

**An exploration of the everyday use
of online mental health tools and
associated technology by people with
mental health problems in Ireland:
A mixed-methods study.**

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Thesis submitted for the degree of Doctor of Philosophy

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August 2025

Declaration

I hereby certify that this material, which I now submit for assessment on the programme of study leading to the award of Doctor of Philosophy is entirely my own work, and that I have exercised reasonable care to ensure that the work is original, and does not to the best of my knowledge breach any law of copyright, and has not been taken from the work of others save and to the extent that such work has been cited and acknowledged within the text of my work.

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Acknowledgements

I am deeply grateful to my supervisors, Dr Mary Farrelly and Dr Lám Mac Gabhann. Their insightful guidance, patience, and constant encouragement have been key cornerstones of my PhD journey.

Sincere thanks to Dr Siobhan MacDermott for willingly getting on board as Third Panel Member and for her involvement and support while acting in this capacity.

Warm thanks to the School technical officers Patrick Boylan and Patrick Doyle for their assistance with all things technological, their good-humouredness and the enjoyable chats. Special thanks to the School Office, the Head of School assistants, and Jonny Hobson at the Graduate Studies Office, for kindly, patiently and promptly assisting with a multitude of admin matters.

I am grateful for the chats, coffee breaks, and fun nights out with the other School PhD students, especially those I've met during the first few years of my PhD, Karen Ward, Jennifer Okeke, Robert Egan, Ellie Marley, Hazel Larkin, Aoife McNicholl, Sara McQuinn, Debbie O'Reilly.

My research would not have been possible without the people who took part in it. I am most thankful to them for their willingness to make time to answer my questions and share their experiences with me.

Heartfelt thanks to the many School lecturers and other School staff who generously made time to help with the development of my data collection tools and with participant recruitment. I would also like to express my deep appreciation for the various organisations that further assisted with the latter.

I extend my gratitude to my examiners, Prof. Suzanne Guerin and Dr. Siobhan Russell, for the attentive consideration given to my work and for offering feedback and constructive criticism that has helped make it more complete.

I would also like to thank the Irish Research Council for awarding me the Government of Ireland Postgraduate Scholarship for the year 2018/2019.

Finally, I am indebted to my family and friends: my close family for their support and for being a safe harbour, and my friends Aurélie, Julie, Michèle, Aoife, Cristina, and Maken, who is sadly no longer with us, for their unwavering encouragement and friendship within and outside of academia. You are amazing people and my life is so much richer for having you in it.

Publications and presentations

MacDermott, S., Ascari, M., Farrelly, M., Mac Gabhann, L. (2020). Cultivating engagement in research using social media networks to recruit participants for health related research. *Journal of Current Trends in Nursing & Health Care*, 1(2), 109.

Manuela, A. (2019, April 10). *Apps, online programmes and other digital resources to improve mental well-being* [Oral presentation]. Public lecture series 2019: Understanding mental health, Dublin City University, Dublin.

Manuela, A. (2018, December 5). *An exploration of the utilisation of online mental health self-help programmes and associated technology by people with mental health problems in their everyday lives: A mixed methods study* [Poster presentation]. School of Nursing and Human Sciences research expo, Dublin City University, Dublin.

Manuela, A. (2018, May 17-18). *An exploration of the utilisation of online mental health self-help programmes and associated technology by people with mental health problems in their everyday lives: A mixed methods study* [Poster presentation]. IIMHN/COMMUNE Project conference: Informing mental health nursing practice, education, and research through co-production, Dublin City University, Dublin.

Manuela, A. (2017, September 27). *An exploration of the utilisation of online mental health self-help programmes and associated technology by people with mental health problems in their everyday lives: A mixed-methods study* [Poster presentation]. 3rd national mental health nursing conference: Embedding recovery principles in psychiatric/mental health nursing practice: Learning from experience, Dublin Castle, Dublin.

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List of abbreviations

CBT – Cognitive Behavioural Therapy

CSO – Centra Statistics Office

eMH – eMental Health

OMHSHP – Online mental health self-help programmes

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Abstract

Thesis title: An exploration of the everyday use of online mental health tools and associated technology by people with mental health problems in Ireland: A mixed-methods study.

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Mental health systems in developed countries need innovating because they are not meeting demands. The use of the Internet and associated technologies in the provision of mental health services and supports, also known as eMental Health (eMH), has been increasingly looked at as a key source of such innovation.

Research into eMH has primarily been driven by an interest in online technologies as novel means of treatment delivery with the potential of making established psychological mental health treatments more widely available and accessible. However, eMH research has prioritised the knowledge generated through clinical trials of online mental health treatments, largely overlooking people's usage and experience of online treatments and supports in real life. Understanding the nature of use of these resources by individuals with mental health problems in their everyday lives is crucial to designing online supports that are relevant to the real-life help-seeking needs of people with mental health problems.

This study has addressed this gap by exploring how adults with a mental health problem use online mental health resources in their everyday lives and what is the role of technology in the experience of seeking mental health support in this way. Using a mixed methods methodology and design integrating the results of an online questionnaire (109 participants) with the results from 10 semi-structured interviews, this study's findings support the need for a pluralistic ecosystem of mental health services and supports where both traditional in-person services and alternative forms of support and modes of access are provided. The findings offer support for the potential of online mental health tools to be one such alternative and a way for mental health systems to expand and diversify available options for support, achieve better inclusivity of people's diverse support needs, and better support their autonomy in seeking help.

CHAPTER 1 – INTRODUCTION

1.1 Introduction

This research study is an exploratory inquiry into how adults who live in the Republic of Ireland and experience a mental health problem use online resources to help with it and support their mental health. Throughout this dissertation, these resources are collectively referred to as online mental health tools and include any online resources that people choose to use in their everyday life for the above mentioned purpose.

This study's research topic is located within eMental (electronic mental) Health (eMH), also known as digital mental health, a broad field of research and practice concerned with the use of information and communication technologies, particularly the Internet, computer devices, and digital technology, in mental health care (Riper et al., 2010). It is a relatively new field, in existence for the last thirty-five years, and it includes diverse areas of interest. The most well-known and studied one is the use of technology-enabled mental health interventions and supports to treat mental health problems, improve people's mental health, and aid mental health services expand their reach and accessibility in response to increasing demands and a widening treatment gap (Bond et al., 2023; Cullen, 2018; Riper et al., 2010). The present study is situated within this area of eMH. It contributes to it by offering insights into real-life usage of online mental health resources by people with a mental health problem and the role of technology in this experience.

Mental health systems in developed countries need innovating because they are not meeting demands and often also do not adequately meet the needs of their users (Gaebel et al., 2020; Richards, 2008). Since its inception over three decades ago, eMH has been looked at by more and more developed countries as a key source of such innovation, underscored by a view of digital technology as an important "enabler" of change (Government of Ireland, 2020; WHO, 2022b). Although some hold a cautious view of what

it can contribute (NICE, 2023a, 2023b), ambitious expectations for eMH are common in the medical eMH literature, currently a dominant branch of the eMH field (this will be discussed in detail in the Literature Review chapter). According to a recent document providing policy guidance to support the adoption of eMH in Europe, eMH “may enlarge the scope of mental health services, provide accessible, affordable, high-quality mental health service delivery and can contribute to improving population-level mental health” (Gaebel et al., 2020, p. 9).

This introductory chapter begins by outlining the context within which eMH for the provision of mental health services and supports has developed. It then introduces the rationale for the present study and its research aims and objectives. It will conclude with an overview of the thesis structure.

1.2 Context

In high-income countries, including Ireland, the ever increasing interest in eMH over the last three decades has come in the wake of two main societal trends: the scale of mental health problems and of the treatment gap, and the increasing pervasiveness of the Internet and digital technologies in society.

1.2.1 Scale of mental health problems and treatment gap

Comparing prevalence data on mental health problems is made difficult by differences between samples, sampling methods, measures used to screen for mental health problems, level of mental health problem severity being assessed (e.g. major depression only, any level of depression), and degree of specificity (ranging from overall psychological distress to specific mental health problems). Nonetheless, international and national data are consistent in showing that mental health problems are pervasive.

In 2019 approximately 13%, or one in eight people, globally (i.e. nearly a billion people worldwide) were estimated to have a mental health problem. Relatively more people in high-income countries are affected by mental health problems than in low-income countries (15.1% and 11.6%, respectively) and similar rates are reported for Europe (14.2%) (WHO, 2022b). The greatest majority of people with a mental health problem are affected by anxiety and depression (OECD & European Union, 2018; WHO, 2022b). The COVID-19 pandemic, which was declared a global pandemic on 11 March 2020 by the World Health Organization, greatly exacerbated pre-existing rates of mental health problems. Pre-pandemic, 31% of people with a mental health problem were affected by anxiety (301 million people, or 4% of the global population) and 28.9% by depression (280 million people, or 3.8% of the global population), while 4% or less lived with bipolar disorder, schizophrenia, or an eating disorder (WHO, 2022b). It was estimated that global rates of depression and anxiety increased by 27.6% and 25.6%, respectively, during the first year of the pandemic (WHO, 2022a). The global rate of people who were experiencing a mental health problem was estimated to have increased to 13.9% in 2021 (IHME, n.d.). Available data also indicate that rates were improving in 2022 while remaining much higher than pre-pandemic (OECD, 2023a; OECD & European Union, 2022).

Data from 2016 indicated that the Irish adult population had one of the highest rates of mental health problems in Europe, with 18.5%, or approximately one in five, adults estimated to be living with anxiety, depression, bipolar disorder, schizophrenia, and alcohol and drug use disorders, or other mental health problem (OECD & European Union, 2018). The same year, the Healthy Ireland Survey, assessing levels of negative mental health (as opposed to specific mental health problems), estimated that 10%, or one in ten, of the Irish population aged 15 years and over had levels of psychological distress high enough to indicate a probable mental health problem (Ipsos MRBI, 2016). The 2015 Irish Health Survey (CSO, 2016b) found that 26% of Irish people aged 15 years and over had some form of depression, of which 8% had a more serious form (moderate or severe). In 2019, the same survey found a lower total rate of depression (14%) and of moderate to severe depression (5%) (CSO, 2019e), while according to another survey 28.5% of the Irish

population aged 18 and over had some form of depression (Daly et al., 2021). Additionally, 21.4% of Irish adults were estimated to have anxiety (*ibid.*). The evolution of rates of mental health problems in Ireland in the wake of the COVID-19 pandemic is consistent with the international data. Irish data from the first two years of the pandemic (2020 and 2021) showed that levels of distress remained as high as pre-pandemic times or grew (Daly et al., 2021; Hyland et al., 2022; Ipsos MRBI, 2021). The 2021 iteration of Healthy Ireland Survey found that 15% of the Irish population had levels of psychological distress indicative of a probable mental health problem (Ipsos MRBI, 2021). Another national study from 2021, which considered people to have a mental health problem if they scored at or above the most stringent cut-off scores, found 11.5% of Irish adults to screen positive for major depression and 7.1% for generalised anxiety (Hyland et al., 2022). Daly et al. (2021) found that 2020 levels of anxiety and depression in the adult Irish population remained similar to 2019 levels, while PTSD levels increased significantly. Where increases in levels of mental health problems were observed, improvements in these rates were also reported at later stages of the pandemic, possibly as people adapted, and after the pandemic, but rates remained higher than pre-pandemic levels (Daly et al., 2021; Ipsos B&A, 2023).

Mental health problems take a heavy toll on individuals and societies. Globally, mental health problems are the leading cause of years lived with disability (YLDs), accounting for one in every six (15.6%) YLDs globally (WHO, 2022b). Depression and anxiety have been among the top ten leading causes of YLDs globally since 2000 (*ibid.*). In recent years, depression has been in the top two leading causes of YLDs globally and anxiety in the top six (WHO, 2017, 2024). Additionally, compared with the general population, people with mental health problems are at higher risk of suicide and physical illness, have higher mortality due to both physical illness and suicide, and are more likely to die prematurely (Walker et al., 2015; WHO, 2022b). Existing estimates of the worldwide economic cost of the illness burden of mental health problems put it at US\$ 2.5 trillion a year in 2010, with indirect costs (due to income and productivity loss) contributing twice as much as direct (e.g. healthcare) costs (Bloom et al., 2011). This figure is expected to increase to US\$ 6

trillion by 2030 (*ibid.*). For the European Union, these costs have been estimated to exceed €600 billion a year (OECD & European Union, 2018).

Ensuring that people receive adequate mental health treatment and support in a timely manner has been a major challenge for healthcare systems since long before the COVID-19 pandemic. Globally, approximately 50% of people in need of mental health treatment and support do not receive any, ranging from 35%-50% in high-income countries to 76% - 85% in low and middle-income countries (OECD, 2021; WHO, 2013). Multiple factors are implicated in this, including underfunding of mental health services (especially community-based services, prevention and early intervention), staffing issues, gaps in the range of available services and their geographical coverage (including both mental health services and social supports), and variation in the quality and level of care (WHO, 2022b). These and other problems (e.g. poorly integrated services) are also well-documented in the Irish mental health system (Mental Health Commission, 2022; Mitchell et al., 2023; Ó Féich et al., 2019). As a result, many people experience difficulties accessing the mental health care they need or desire, or get discouraged from seeking it at all. Other factors that keep people from seeking mental health care include the stigma associated with mental health problems and attitudes and beliefs about mental health and help-seeking (WHO, 2022b). During the first phase of the COVID-19 pandemic (2020-2021) the combination of rising mental health distress in the population and disruptions to all levels of mental health services (primary care, outpatient, community, and emergency psychiatric services) exacerbated existing weaknesses of mental health systems and widened the treatment gap further (WHO, 2022a). Many countries responded by including mental health and psychosocial support in their national COVID-19 response plans, and using telephone and online videoconferencing systems to replace in-person consultations and establish support helplines (OECD, 2023b; WHO, 2020). Some countries also permanently increased mental health support or capacity within their mental health systems (OECD, 2023b). This literature also showed that by 2022 disruptions were fewer and continued to improve afterwards as in-person services were able to gradually resume, but obstacles to accessing services have continued to be experienced by many people.

1.2.2 Growth of Internet and digital technology use

Alongside the above mentioned scale of mental health problems and inadequate mental health service capacity, the growth in Internet and digital technology use within people's everyday lives and society at large represents another important trend that has contributed to the increased interest in using online and digital technologies to deliver mental health services and supports.

The growing attention given to enhancing mental health systems through technology enabled mental health services and supports is part of the broader process of digital transformation undergone by societies. This is known as the digitalisation of society and it is regarded as “a long and constant process in which all domains of societal activities – from industries to entertainment, from art to academia, from health to environment – are concerned and are reconfigured by it” (George, 2020, p. 13). The reconfiguration of mental health care by the digitalisation process is reflected in the view that “traditional service models need to evolve in appropriate ways alongside the major societal trends associated with the pervasiveness of the Internet, smartphones and other technologies” (Cullen, 2018, p. 5).

Since 2010, EU Internet users (individuals aged 16 to 74 who used the Internet in the last three months) and EU households with Internet access have increased from just under seven in ten (67% and 68%, respectively) to nine in ten (91% and 93%) (Eurostat, n.d.-b, 2024). Concomitantly, one in fifteen (6%) individuals in the EU had never used the internet in 2023, representing more than a four-fold decrease since 2010 (27%) (*ibid.*).

Eurostat data show that the growth of Internet use and access in Ireland has evolved in much the same way (Eurostat, n.d.-b, n.d.-a). In the first six months of 2024, more than nine in ten (93%) Irish people aged 16 and over had used the Internet in the last three months and as many household (94%) had Internet access, mostly fixed broadband (86%)

(CSO, 2024b).¹ Just 6% of Irish people aged 16 and older have never used the Internet, a figure mostly accounted for by older individuals, particularly those aged 75 and over (*ibid.*). However, internet usage among older users has increased rapidly in recent years. In 2018, while the share of Internet users among those aged 16 – 44 was already at 97% and had reached 85% among people aged 45 – 59, only one in two (48%) people aged 60 – 74 were Internet users (CSO, 2018). In 2020, this figure had increase to 75% and further increases were reported for all the other age groups (CSO, 2020a). In 2020 the Central Statistics Office (CSO) started to collect Internet usage data for individuals aged 75 and over, finding that fewer than one in two of these older individuals (44%) was an Internet user (*ibid.*). Since then the proportion of Internet users among individuals aged 60 and over has risen further, with 85% of 60 – 74 year-olds and 54% of individuals aged 75 and over now being Internet users (CSO, 2024a). These older Internet users are also going online substantially more frequently than in the past, with 87% of those aged 60 – 74 and 75% of those aged 75 and over now going online every day or almost every day (*ibid.*) compared with 59% and 28% in 2020, respectively (CSO, 2020a). With respect to younger age group, all Irish people aged 16-29 years (100%) and almost all of those aged 30-44 years (99%) and 45-59 years (97%) are now estimated to be Internet users (CSO, 2024a). With almost all people under 60 being Internet users and with the share of Internet users already exceeding eight in ten of people in their 60s, and as the Internet users that are currently in these age groups move into older ages over the next few years, it is to be expected that the proportion of Internet users will also keep growing further among people aged 60 and over, including people aged 75 and over.

The Irish population is now also going online more than ever. In 2019 eight in ten (79%) Irish Internet users went online every day (including every day / almost every day) (CSO, 2019b). Thus one in five people were still going online less often. Additionally, 77% of those who went online every day were online at least several times a day, including 19% who

¹ An additional 1% of Irish individuals aged 16 and over had used the Internet but not in the last three months (CSO, 2024a). These are included in the total count of Irish Internet users.

were online all the time or almost all the time (*ibid.*).² The COVID-19 pandemic, with its protracted periods of social distancing during which many in-person activities were moved online (e.g. education, work, contact with family and friends, etc.), has had a knock-on effect on the amount of time that Irish Internet users spend online, which was particularly visible in the increase of Internet users who in 2020 went online every day and used the Internet all the time / almost all the time. This increase was visible across the entire spectrum of Internet users who go online daily (e.g. all gender and age groups) (CSO, 2020a) and has continued since, although more slowly. Recently it was found that almost all Irish Internet users (95%) go online daily / almost daily, with more than eight in ten (85%) of them going online at least several times a day, and one in four (39%) already being online all or almost all the time (CSO, 2024a). The latter corresponds to twice as many people as in 2019 (CSO, 2019b).

Many areas of our daily lives have now become more “digital” (CSO, 2024b) as we use the Internet and digital services and tools to carry out a variety of activities such as (naming the most common ones) communicate with others (email, instant messaging, Internet (video) telephoning), find information and check the news, use social media, shop online for a variety of goods (e.g. clothing, food) and services (e.g. travel, transport, accommodation), carry out financial activities (e.g. online banking, buying / renewing insurance policies), contact public authorities and public services (e.g. making appointments, finding information on benefits and entitlements, downloading or submitting official forms), engage in learning and training (e.g. online course), and for entertainment purposes (e.g. online video and music streaming, online gaming) (CSO, 2023a, 2023b, 2023c, 2023d, 2023e). These digitally enabled activities have become part of the everyday life of increasing numbers of people. For example, the two most popular online activities are email and finding information of goods / services online, used by 93% and 90% of Internet users, respectively, both up from 84% in 2019; buying clothing online increased from 51% in 2019 to 69% in 2023; and online banking increased from 73% in 2019

² In 2019 the CSO began to collect more detailed data about the amount of time spent online by those who use the Internet every day or almost every day (CSO, 2019b).

to 88% in 2023 (CSO, 2019c, 2019d, 2023c). The lives of Irish people are also becoming more digital on account of the fact that the so-called Internet of Things, where devices and objects are connected to each other via the Internet and exchange data, is becoming part of the daily lives of many Internet users. Half (51%) of Irish Internet users now have home devices or systems connected to the Internet, such as virtual assistants (e.g. Alexa, Google Home), Internet-connected home energy and security systems (e.g. smart meters, Internet connected home alarm system), and home appliances connected to the Internet (e.g. ovens, washing machines, TVs) (CSO, 2022a), with most recent data (*ibid.*) showing that the use of these technologies is on the increase compared with earlier data (CSO, 2020b). Additionally over half of Internet users (54%) now have wearable smart devices (e.g. smart watch, fitness tracker, etc.) (CSO, 2022a), more than twice as many as in 2020 (CSO, 2020b).

Last but not least, the pervasiveness of digital technology in our daily lives is also reflected in the fact that many Irish internet users nowadays access the Internet from multiple devices including smartphones, laptops, tablets, and other devices such as smart TV, game console, e-book reader, smart watch, etc. (CSO, 2023f). Mobile phones / smartphones are by far the most popular device (96%) (*ibid.*). People can be online from multiple devices simultaneously to engage in different activities.

High rates of mental health problems and systematic weaknesses in mental health services pre-existed the COVID-19 pandemic and have been compounded by it. Moreover, in addition to the aftermath of the COVID-19 pandemic, multiple ongoing crises (the wars between Russia and Ukraine and in the Gaza Strip and Israel, the growing climate crisis, widening socioeconomic inequalities, large-scale displacements of people, etc.) continue to impact the global populations' mental health, increasing people's risk of experiencing mental health problems and exacerbating pre-existing ones, and making it increasingly urgent for mental health systems to innovate in order to deal with these challenges (WHO, 2022b). Proponents of eMH regard the pervasiveness of the Internet and digital technology use in people's daily lives as an appealing reason for adopting these technologies to aid in

innovating mental health services and reaching more people in need of support than traditional service-provision pathways alone.

1.3 Study rationale

When this study began in 2015, the eMH field had existed for approximately two and a half decades. During this time, eMH research had been primarily driven by an interest in the Internet, computer devices and digital technology as novel means of treatment delivery with the potential of improving the scalability and reach of established psychological mental health treatments, in the hope of helping to address the treatment gap by making treatments more widely available and accessible and able to reach more people than the traditional (in-person) provision model alone. These digitally delivered treatments typically consisted of self-help interventions or online therapy.

The core of research on eMH treatments during those years consisted of evaluating the clinical efficacy of these online interventions in research trials. This resulted in mounting clinical evidence of the efficacy of online mental health interventions in treating or reducing the severity of common mental health problems such as depression, anxiety, panic disorders and some eating disorders. However, while online interventions performed well in clinical trials, many failed to produce value for end users (patients, healthcare professionals) once they were introduced into real life clinical settings (Mohr, Riper, et al., 2017; Mohr, Weingardt, et al., 2017; Peiris et al., 2018). One of the contributing factors has been the tendency to center the design of online interventions around what clinical researchers believe leads to successful treatment rather than incorporating input from people with mental health problems about their care goals and needs into the design process (Mohr, Weingardt, et al., 2017). Parallel to this there has been a tendency in eMH research to prioritise the knowledge generated through clinical trials and neglect usage and experience of use of online interventions in real life, contributing to a dearth of research on people's use of online interventions other than as participants in research trials (Fulford

et al., 2016). The present research study was conceived in response to this gap, and seeks to contribute to eMH research by exploring how people with mental health problems use online mental health resources in their everyday lives and what is the role of technology in the experience of seeking mental health support in this way. Research trials have unique conditions that are unlikely to be found in real-world settings (Baumel et al., 2019). Additionally, in real life a multitude of mental wellbeing resources are available to the general public, including but not limited to clinically-designed online mental health interventions. Research on the nature of use of these resources by individuals with mental health problems in their everyday lives can help shorten the gap between research and practice and help design online resources that are relevant to the real-life help-seeking and care needs of people with mental health problems.

This study employs a mixed-methods design and provides both quantitative and in-depth qualitative insights into people's real-life use and experience of online mental health resources, inclusive of but not limited to online interventions. To the best of this researcher's knowledge, when this study began in 2015 it was one of the few studies to both focus on real-life usage of online mental health tools and generate in depth understanding of people's experience of using these tools for mental health support (Fleming et al., 2018; Fulford et al., 2016).

Two 2017 viewpoint papers by Mohr and colleagues reflected on the "first generation" of online mental health interventions (Mohr, Riper, et al., 2017, p. E1) and argued that a "paradigm shift" was needed to move the field forward and successfully address its gaps, involving the development of "new models of behavior change that move away from traditional psychotherapy models and incorporate more granular understanding of the lives of patients and applications of these [mental health] technologies" (Mohr, Weingardt, et al., 2017, p. 429). Voices such as these had begun to emerge in the eMH field in response to the realisation that the first two and a half decades of research and development of online mental health interventions had not brought the expected innovation in mental health care delivery. As the eMH field began to take stock of its failures and successes, it

also began to enter a new phase characterised by greater complexity (e.g. awareness of the need for eMH innovation to be a multidisciplinary endeavour) and greater emphasis on incorporating bottom up approaches into the development and implementation of mental health technologies (e.g. inclusion of end users in the design process, use of knowledge of localised service delivery needs to support implementation) rather than these processes being exclusively driven from the top down (Gaebel et al., 2020; Mohr, Weingardt, et al., 2017). There has since been more research aimed at understanding the needs and preferences of people who seek mental health support online (Bell et al., 2022; Biddle et al., 2020; Lattie et al., 2016; Pretorius et al., 2019b; Smith et al., 2021), studying how people engage with digital mental health tools in their everyday life rather than under the contrived conditions of research trials (Fulford et al., 2016; Stawarz et al., 2018, 2019b), and involving end users in the design of eMH resource (Pretorius et al., 2020). Nonetheless, these areas of research remain understudied compared to other areas such as the evaluation of eMH treatments for mental health problems, which has continued to rapidly increase in the last decade (Miralles et al., 2020; Philippe et al., 2022). As a result, this study, and the in-depth exploration of the everyday use of online mental health tools it offers, remains topical to this day.

1.4 Research aims and objectives

This research study explores how adults with mental health problems who live in the Republic of Ireland use online resources to help with a mental health problem and support their mental health. It also explores the role played by the associated technology (e.g. computer devices, Internet) in the experience of getting mental health support in this way.

In the rest of this dissertation, the online resources that people use for mental health support are collectively referred to as online mental health tools and include any online resources that people choose to use in their everyday life for this purpose.

The study has two overarching research aims:

- (1) Explore how online mental health tools are utilised by adults living in the Republic of Ireland to get support for a mental health problem
- (2) Explore the place of technology (Internet and computer devices) in the experience of utilising an online mental health tool to get support for a mental health problem

These research aims are broken down into five objectives:

- (a) Explore the demographic characteristics of adults living in the Republic of Ireland who have experience as users of online mental health tools
- (b) Explore their patterns and modes of usage of online mental health tools
- (c) Explore the role of technology in how individuals utilise online mental health tools
- (d) Explore the interrelation between the technology and the individual's personal context, i.e. the context within which the online mental health tool is utilised
- (e) Explore the experience of using technology to get support for a mental health problem

1.5 Research population

Mental health difficulties range from poor mental health without a clinically diagnosable mental health problem through to commonly diagnosed mental health problems (e.g. anxiety and depression) (WHO, 2017) and significant mental health conditions that can have a severe and enduring impact on a person's wellbeing and ability to engage in everyday and work life activities (e.g. psychoses and bipolar disorder) (Chen et al., 2020; Keyes, 2007). The population this research focuses on includes all of these groups, namely people with mental health difficulties that are not formally diagnosable as well as those that are.

This is because the study invited adults to take part if they identified themselves as having a mental health problem and used online mental health tools to help with it. No restrictions to participation were made in terms of specific diagnoses or level of severity of the mental

health difficulties being experienced. The choice to let individuals identify if they had a mental health problem came from the decision to not limit recruitment to individuals with a formal mental health diagnosis.

First, there are many online mental health tools that are geared towards supporting general wellbeing rather than specific mental health problems (e.g. meditation apps). These are available to the general public, do not include any formal clinical restrictions to use, and can thus be taken up by people with different levels of mental health difficulties. Second, online mental health tools developed for commonly diagnosed mental health problems such as anxiety and depression may state that they are suitable for people with mild to moderate symptoms and unsuitable for those experiencing more severe symptoms, but they do not necessarily require a formal diagnosis or referral to be accessed, allowing people to self-refer to use such tools (they may be asked to answer an initial questionnaire to establish the content of the online mental health tool is appropriate for their symptoms). There is evidence that some of the people who are interested in using online self-help programmes for anxiety or depression have clinically significant mental health symptoms that they never discussed with a healthcare professional, and, therefore, are unlikely to have a diagnosis (Perini et al., 2009; Titov et al., 2008, 2009; Titov, Andrews, Davies, et al., 2010; Titov, Andrews, Johnston, et al., 2010; Wims et al., 2010).

Additionally, the use of diagnostic criteria for mental health problems (e.g. DSM-5) has been criticised for not being an accurate indicator of whether there is a need for mental health care and to what extent (Jorm, 2017). People assessed on diagnostic criteria alone may not qualify for a mental health diagnosis (*ibid.*), but may still experience levels of impairment to daily living that warrant some level of mental health intervention (Bobevski et al., 2017; Brown et al., 2005; Keyes, 2007).

In light of the above, and to avoid excluding people with mental health care needs who do not have a diagnosis, it was decided that participation should not be based on having one. Following MacGabhann, Lakeman, McGowan et al. (2010), people defined whether they

had a mental health problem, and both people with and without a diagnosis were allowed to participate.

In inviting people to participate if they identified themselves as having a mental health problem, the researcher had an expectation that people would come forward if they had a mental health diagnosis or if they had experienced emotional or psychological distress that impacted their mental wellbeing enough for them to wish to seek support for it but without necessarily having a mental health diagnosis. The researcher reasoned that, for those without a mental health diagnosis, their decision to participate would depend on whether they understood the difficulties they were seeking support for as being mental health problems, according to the knowledge, beliefs and understanding they held of their mental health difficulties and of what mental health problems are. This group of people includes individuals whose mental health difficulties, if clinically assessed, may or may not be considered diagnosable mental health problems.

Ultimately, the decision to let individuals participate as long as they identified themselves as having a mental health problem was a decision to mirror the absence of formal (clinical) gatekeeping that allows many online mental health tools to be accessed by people with mental health difficulties regardless of the severity of these difficulties. This researcher recognises that this recruitment approach has potential limitations, which will be discussed in section 8.8 of the Discussion chapter.

1.6 Definition of online mental health tools used in the study

What counted as an online mental health tool was refined during the early stages of the recruitment. Originally the expression ‘online mental health self-help programmes’ was used. These were defined for prospective participants as ‘website- and app-based self-help programmes that are offered as a way to improve mental well-being and cope with mental health problems’. The inclusion of the term ‘self-help’ emphasised the self-help nature of

the online tools that were the initial focus of the study. The use of the term ‘programmes’ reflected the idea of online tools with structured content (e.g. sessions) that people work their way through. These language choices reflected the researcher’s initial focus on the online resources most commonly discussed in the medical eMH literature, namely the guided and unguided interventions delivered via online programme or app that were discussed in section 3.3 of the Literature Review Chapter.

Early in the data collection, exposure to participants’ reported experiences contributed to the researcher expanding her understanding of the variety of online tools that people use to seek support for a mental health problem. The expression ‘online mental health self-help programmes’ was kept in all participant information material (study website, Participant Information Sheet), but its definition was broadened to ‘apps, online programmes and other online resources that are offered as a way to improve mental well-being and cope with mental health problems’.

Throughout this manuscript, the less cumbersome expression ‘online mental health tools’ is used to refer to these resources. As real-life use was an underlying concern and rationale of this study, the definition of such tools was kept broad and the range of online resources covered by it was expanded beyond the original definition, so as to accommodate the variety of online tools that people were using in their everyday life to help with their mental health and mental health problems. The included online tools were as follows: self-help apps and online programmes for the self-management of mental health difficulties (e.g. depression, anxiety, body image issues) or to support general mental wellbeing (e.g. mindfulness / meditation apps, stress-management apps or online programmes, online wellness courses); self-tracking apps (apps used to track mood, behaviours, or activities); mental health apps and platforms based on artificial intelligence (mental health chatbots, virtual therapists); websites providing information or education about mental health problems, treatments and supports; mental health and mental wellbeing resources on social media; online peer-support forums and live chats; mental health support groups on social media; email-based talking therapy; text-based helplines (email, live chat). Video-

based talking therapy (talking therapy conducted remotely through live video feed), telepsychiatry (as defined in section 2.3), and mental health treatment using virtual reality or gamification were excluded.

1.7 Thesis structure

The current introductory chapter has introduced the field of eMH and provided some background to it. It has also introduced the study rationale and the aims and objectives of the research.

Chapter 2 presents a more detailed discussion of the eMH field and provides the backdrop to the study's research topic.

Chapter 3 contains the review of the literature. It discusses the particular research gaps and threads that were identified within the reviewed eMH literature and that provide the rationale for the study's aims and objectives.

Chapter 4 outlines the methodology used in this study. It discusses the appropriateness of addressing the study's aims and objectives using a mixed methods methodology informed by a pragmatist worldview. Additionally it provides the rationale for choosing a two-phase concurrent mixed methods design, outlines the sampling and recruitment strategy, and describes the procedures of data collection and analysis employed in each phase of the research. The chapter also outlines the ethical considerations that were made to protect the safety of participants and of the researcher.

Chapter 5 presents the results from Phase 1 of the study, which involved an online questionnaire of adults in Ireland who use online mental health tools to help with a mental health problem. This phase generated quantitative information about the people who use

online mental health tools for this purpose, their patterns of use of these tools, and patterns relating to their use of the Internet and computer devices.

Chapter 6 presents the results from Phase 2 of the study, which consisted of individual semi-structured interviews with adults who use online mental health tools to help with a mental health problem. This phase generated qualitative, in-depth data on the experience of using such tools for mental health support.

Chapter 7 focuses on the integration of the results from Phase 1 and Phase 2. It explains the integration process and presents the integration results, highlighting how the combination of the quantitative and qualitative results helped produce richer, more comprehensive insights into the phenomena under study.

Chapter 8 reviews the aims and objectives of the research and critically discusses the significance of the research findings. It also considers the study's strengths and limitations, and concludes by offering recommendations based on the findings.

Finally, Chapter 9 elucidates the contributions of the study and offers some final thoughts.

CHAPTER 2 – BACKGROUND

2.1 Introduction

This chapter provides the backdrop to the study's research topic. The eMH field was briefly introduced in the introductory chapter. The present chapter discusses it in greater detail, focusing on the specific area of eMH that is of interest to this research study. The chapter also provides an overview of the eMH landscape in Ireland and outlines how eMH is currently situated within the Irish mental health care system.

2.2 Definition and brief history of eMental Health

According to Riper et al. (2010) eMH, or digital mental health, “can be understood as a generic term to describe the use of information and communication technology (ICT) – in particular the many technologies related to the Internet – when these technologies are used to support and improve mental health conditions and mental health care”. eMH activities include the delivery of mental health services and supports via the Internet and associated technologies, professional education (eLearning), the use of data systems to improve the delivery of services (e.g. electronic patient files), and online research in mental health (Riper et al., 2010; Roland, Lawrance, et al., 2020). In practice, terms like eMH and digital mental health are commonly employed in the narrower sense of using the Internet and associated technologies for the provision of prevention, support, management, and treatment of mental health problems (Christensen et al., 2014; Cullen, 2018). This area has been a core focus of the eMH sphere so far, and, although not limited to it, eMH is commonly associated with it. The present study is situated within this area of eMH.

Digital mental health is one of the more recent names that has been adopted to refer to technology-enabled mental health care, but over the years various names have been used,

with every new name reflecting the impact of developments in the parent field of telemedicine or eHealth (electronic health) (Christensen et al., 2002) and in computer and information technology in general. The precursors of today's technology-enabled (online or digital) mental health services and supports date back to the 1990s (Firth et al., 2016), coinciding with the early days of public Internet access and of personal computers entering households (Lupton, 2018, pp. 4–5). During this early stage, terms such as 'computer-based' and 'telepsychiatry' were commonly used to refer to the technology-enabled provision of mental health care (e.g. Bloom, 1992; Ishak & Burt, 1998; May et al., 2001). As the 1990s progressed, developments in computer and information technology contributed to popularising the use of the Internet. In mental health professions such as psychiatry and psychology, an effect of this was the emergence of the use of the Internet to provide a variety of mental health care resources and services (Barak, 1999; Ishak & Burt, 1998). Terms like 'Internet-based' and variants came into use (e.g. Internet-based treatment, Internet Cognitive Behavioural Therapy, online therapy / counselling) (e.g. Barak, 1999; Rochlen et al., 2004) and widely replaced earlier ones. The term eMental Health also emerged around this time (Christensen et al., 2002). In recent years the word 'digital' (digital mental health, digital mental health services, digital psychiatry, digital psychotherapy, etc.) can be found more and more in the literature on the use of the Internet and associated technologies for the delivery of mental health supports (Lattie, Stiles-Shields, et al., 2022; Mohr, Weingardt, et al., 2017; Torous et al., 2021; Weightman, 2020), likely linked to the increase in attention given by the field to newer advances in digital technology such as smartphones, mobile applications (apps), chatbots, social media, virtual reality, and others.

Overall, the eMH field has steadily expanded since its inception, and particularly during the 2010s, when the number of research publications pertaining to eMH significantly increased at multiple points (Firth et al., 2016; Philippe et al., 2022; Timakum et al., 2022). There are also indications that the growth in eMH research over this time has been greater than that of eHealth (electronic health) and psychiatric research, its parent fields (Firth et al., 2016).

2.3 Overview of eMental Health for the provision of mental health services and supports

Various ways of categorising eMH solutions have been developed, displaying varying levels of complexity depending on the purpose of the system of categorisation being used. This study is concerned with the use of eMH as a way for people to access help and support around their mental health and mental health problems. Consequently, this section provides an overview of the main application areas of eMH related to this, which include online mental health treatment, non-clinical online sources of mental health support, mental health information and education, and mobile health (Chambers & Murphy, 2015; Cullen, 2018). Expanding and emergent areas of interest will also be mentioned briefly. The following overview largely borrows from information provided by a number of previously published overviews of the eMH field, which are referenced throughout the remainder of the section.

eMH for mental health treatment

In terms of using eMH technologies for mental health treatment, telemental health and online mental health interventions are currently the most established areas both in terms of research, efficacy evidence, and implementation. The first area, telemental health, is most commonly associated with the use of telecommunication media in the remote delivery of talking therapy by a therapist to individuals or groups. Telecommunication modalities that are employed for this purpose include the telephone (audio), video-based media such as online video platforms, and text-based media including SMS messaging, email (asynchronous interaction), and live chat (synchronous interaction) (Cullen, 2018). Telemental health as the delivery of talking therapy is also known as telecounselling, telepsychology, online therapy, or using other terms derived from the specific interaction modality being employed (e.g. email therapy). Telemental health also includes the area of telepsychiatry, which is the use of telecommunication media to connect mental health

specialists to non-specialist practitioners (e.g. GPs) to support the latter in providing mental health care (Cullen, 2018; Gaebel et al., 2020). Telepsychiatry has not been used much outside of countries such as the United States, Australia, Canada, and Scandinavian countries (Cullen, 2018) and is not relevant to the scope of the present study.

The other salient area of application of eMH for the provision of mental health treatment is represented by online mental health interventions. These deliver content based on the principles of psychological therapies via digital media including online programmes / platforms and mobile applications (apps). Other names used are internet-based interventions, computer-based interventions, or digital psychotherapy. They are usually based on established evidence-based therapies (e.g. cognitive behavioural therapy, acceptance and commitment therapy, psychodynamic therapy) (Lattie, Stiles-Shields, et al., 2022) and their purpose ranges from wellbeing promotion, psychoeducation and prevention (e.g. educate people about mental health and mental health problems, teach skills to support mental wellbeing) to early intervention and treatment (Cullen, 2018; Gaebel et al., 2020). When offered as stand-alone interventions, the psychoeducational or treatment content is self-administered by the user who works through the intervention independently (unguided option) or with the support of a therapist or other support provider (guided option) (Gaebel et al., 2020; Lattie, Stiles-Shields, et al., 2022). Research and developments on online mental health interventions have mostly focused on anxiety, mood, stress, trauma, and substance use (Philippe et al., 2022). Online mental health interventions can also be used as part of a blended-care approach, i.e. in combination with traditional face-to-face therapy to complement and support the latter (Gaebel et al., 2020; Lattie, Stiles-Shields, et al., 2022).

eMH for non-clinical mental health support

Alongside the provision of psychological treatment, digital technologies have also been used in the provision of additional mental health supports such as online forums / support

groups and crisis support resources. Online forums and support groups are a source of mutual self-help or peer support. Interaction is typically text-based and can be asynchronous (posting on to a discussion board) or take place in real time (live group chat). Some such online forums or groups are created by people with lived experience of a mental health problem for other people with the same problem and offer a space to share mutual support and advice. There are safety concerns associated with these informal support groups as the quality of the moderation can be an issue and many are unmoderated. Dedicated and professionally moderated online forums and chat rooms offer a safer and beneficial alternative (Chambers & Murphy, 2015; Cullen, 2018). eMH solutions for crisis support expand the work of traditional phone crisis lines by making this form of support available through SMS text, email, and live chat (Christensen et al., 2014; Cullen, 2018). Chambers and Murphy (2015) highlight an additional form of human-to-human, non-therapeutic online mental health support provided by dedicated mental health websites that allow for users to post comments on the website and receive emotionally supportive and information-based replies from trained moderators.

eMH for mental health information and psychoeducation

The internet has been consistently found to be a common source of health and mental health information both among the general population (CSO, 2018; Karwig et al., 2015) and people with a mental health problem (Aschbrenner et al., 2018; Athanasopoulou et al., 2017; Baup & Verdoux, 2017). According to Cullen (2018) for most people this is the most visible area of eMH. From a mental health care perspective, the use of digital technologies to provide information and psychoeducation around mental health and mental health problems is aimed at promoting mental wellbeing in the population and preventing mental health problems by equipping people with knowledge about mental health and mental health problems and tools to support their mental wellbeing and manage their distress. Online mental health information also includes the provision of information about help seeking and treatments, and signposting to available sources of help (Chambers & Murphy,

2015). Mental health information and psychoeducation content online can be static (e.g. website) or structured and interactive (e.g. via online mental health interventions). It also includes information obtained from others online such as on peer support forums, email support services and the like.

Mobile health

In the eMH field, mobile health refers to the use of mobile applications (apps), smartphones, and wearables devices (e.g. smartwatches) for the purpose of mental health care. While some of the eMH technologies mentioned previously (e.g. online mental health interventions) can be found as mobile applications or apps, the use of apps for mental health related purposes has grown as an area of eMH application in its own right, particularly around wellbeing apps (e.g. for meditation and relaxation), apps for specific mental health problems (e.g. depression, anxiety), and mental health trackers (allow people to track their behaviours, emotions, activities, etc.). Research and commercial interest in mental health and wellbeing apps have increased greatly in recent years (Miralles et al., 2020; Roland, Lawrence, et al., 2020). Mental health apps and wearables are contributing to novel approaches to mental health care, for example the delivery of personalised information, feedback and supportive messages, and the real-time measurement of physiological data via sensors in wearable devices. At present, however, these technologies also pose many problems and risks for users. Measurements generated by smartphones and wearables often have accuracy problems, and most available mental health and wellbeing apps are commercial products of varying quality, are not clinically validated, and may not adequately protect the confidentiality of user's personal data (Bauer et al., 2020; Miralles et al., 2020). It should be noted that these problems are not limited to mobile health applications. Ensuring that only quality, reliable, effective and safe online mental health information and resources are made available to people is one of the main challenges faced by the eMH field. Academically- and government-backed eMH resources are typically based on evidence-based approaches and clinically evaluated

through research trials, but have to compete with the commercial digital mental health and wellbeing sector, the other main source of eMH innovation and implementation, whose products often rank low in quality and efficacy (Roland, Lawrence, et al., 2020).

Expanding and emerging areas of interest

In the areas of psychoeducation, treatment, symptom management, and recovery support, the development of eMH resources to support people with enduring and severe conditions such as psychoses, schizophrenia and bipolar disorder is a special area of interest (Cullen, 2018). Research and developments in this area are still limited but growing (Ehrt-Schäfer et al., 2023; Naslund et al., 2015).

Lastly, concerning the range of eMH technologies in use in the provision of mental health support, the overview provided so far has covered established areas of application or, in the case of mobile health, areas that are becoming so. In addition to these, new eMH possibilities and scenarios for mental health care are currently being explored and developed following recent technological advances such as gamification, virtual reality, artificial intelligence, chatbots, digital phenotyping and others (Bond et al., 2023; Morrison, 2022; Torous et al., 2021; Woodward et al., 2020).

2.4 Theories of adoption of eMental Health treatments

An expanding area of interest around eMH is to generate theoretically-driven understanding of what drives and obstructs the adoption of eMH clinical resources by end users, particularly in relation to the earlier mentioned online mental health interventions.

Looking at these interventions as “behavioral intervention technologies”, i.e. interventions “aimed at changing behaviors and cognitions related to health, mental health, and

wellness” and that use online and digital technologies to do so (Mohr et al., 2014), there are the two broad components that need combining: the behavioural / psychological and the technological. eMH treatments started off as little more than online versions of in-person and manualised mental health psychological treatments. Later, as results achieved through eMH treatments in real-world healthcare settings remained unsatisfactory, attention was brought to the limited use of theoretical approaches in the development of these interventions, in particular theories and models of human behaviour (Mohr, Riper, et al., 2017; Naslund et al., 2017).

Behaviour theories illustrate the key constructs and mechanisms that “influence or change a target behaviour” and “provid(e) a foundation for developing, implementing, and evaluating behaviour change interventions” (Naslund et al., 2017, p. 326). A number of prominent behaviour theories and models have been deemed to be relevant to the development of eMH treatments, including major traditional theories of human behaviour (like the Theory of Reasoned Action, Theory of Planned Behaviour, Social Cognitive Theory, Transtheoretical Model, the Health Belief Model, and Self-Determination Theory) and major behaviour theories of innovation and technology acceptance (like the Technology Acceptance Model, Diffusion of Innovation Theory, and the Unified Theory of Acceptance and Use of Technology) (Apolinário-Hagen et al., 2024; Naslund et al., 2017; Spadaro et al., 2021). In general, the application of behaviour theories to the development of online mental health interventions can provide better understanding and explanations of the factors and mechanisms that influence their acceptance by people with mental health problems and healthcare providers. This can guide how online interventions can best engage users and support behaviour change more effectively (Mohr et al., 2014; Naslund et al., 2017; Spadaro et al., 2021).

Traditional theories of behaviour change that have already been widely applied in the development of behavioural health and mental health interventions can provide a helpful starting point for online ones (Mohr, Riper, et al., 2017; Naslund et al., 2017). For example, emerging evidence supports the relevance of self-determination theory in the context of

identifying the psychological and technology-usability needs of young people who seek mental health support online (Pretorius et al., 2020; Sze Cheng et al., 2021). However, generally many traditional behaviour theories have proven difficult to apply to the development of online interventions (Naslund et al., 2017). One difficulty is that many such theories conceive of human behaviour as static or linear (*ibid.*), whereas newer technologies used as part of such interventions, such as mobile devices and wearable sensors, now provide opportunities to collect data about individuals' behaviours as they change in response to changing conditions or factors (e.g. mood, social conditions), requiring a more dynamic understanding of behaviour (Nahum-Shani et al., 2015; Spruijt-Metz et al., 2015). Another difficulty is that outcome measures from traditional behaviour theories, which have been tried and tested in in-person relationships, may not adequately capture outcomes in online settings (Hanley et al., 2021; Sefi & Hanley, 2012).

In the context of applying behaviour theories to identify and explain the mechanisms that lead to the adoption and usage of online mental health technologies, the use of theoretical frameworks that include technology acceptance constructs is recommended (Harst et al., 2019). The Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) are prominent theories of technology acceptance (Yadegari et al., 2024) that explain the factors and mechanisms that lead users to decide to accept a technology. Their use is established in a variety of contexts, including eHealth, a parent field of eMH (Harst et al., 2019; Heinsch et al., 2021). The TAM was introduced by Davis in 1986 (Davis, 1986), while the UTAUT (Venkatesh et al., 2003) was developed by integrating constructs from several existing behaviour theories into the TAM. Both theories posit that users' intention to use a technology (acceptance) influences actual use (adoption). In the core TAM structure, intention to use is determined by users' beliefs about the usefulness and ease of use of the technology, making individual attitudes, beliefs, and behaviours the core focus of the TAM (Heinsch et al., 2021; Lai, 2017). The UTAUT extends the TAM by assuming that the intention to use technology is affected by both individual predictors (effort expectancy and performance expectancy) and a contextual predictor (social influence), with an additional contextual predictor (facilitating conditions) directly affecting

actual use. The contextual factors in the UTAUT allow this model to take into account the influence of broader social and contextual components on people's adoption of technology, for example their organisational context and technological infrastructure (Harst et al., 2019). The UTAUT also incorporates four moderators (gender, age, experience, and voluntariness of use) (Kim & Crowston, 2011).

When using theories and models of behaviour change to guide the development and evaluation of online mental health interventions, existing evidence highlights the importance of using theories and models that take into account the complexities and specificities of seeking, engaging with, and delivering mental health supports in and via digital environments (Cross et al., 2023; Feijt et al., 2018; Hanley et al., 2021; Mohr, Riper, et al., 2017; Naslund et al., 2017). In relation to this, investigating the viability of the TAM and UTAUT in the context of such interventions is one emerging and expanding area of activity. UTAUT constructs have been shown to influence acceptance of digital mental health in patients and healthcare professionals, alongside additional constructs like trust (Apolinário-Hagen et al., 2024), depression (Rentrop et al., 2022), factors specific to the digital environment (e.g. Internet anxiety, stress caused by constant availability via mobile phone or email) (Philippi et al., 2021; Rentrop et al., 2022), and public value factors (Alhur et al., 2024). Compared with the UTAUT, the TAM is a less comprehensive explanatory model. It disregards social factors and there is evidence that one of its two core constructs, perceived ease of use, has limited relevance in some settings or populations, including some users of digital mental health resources (Kartini et al., 2024; Monthuy-Blanc et al., 2013; Sawrikar & Mote, 2022; Tan et al., 2024). Possibly to offset these limitations, studies of acceptance of these resources often use the TAM as part of integrated models where its constructs are combined with constructs from other behavioural theories, like the UTAUT (Alojail, 2024), the Theory of Planned Behaviour (Sawrikar & Mote, 2022), the Health Behaviour Model (Tito & Arefin, 2025), the Task-Technology Fit theory (Tan et al., 2024), the Uses and Gratifications Theory (Park & Kim, 2023), and other relevant concepts from the fields of technology acceptance and digital health interventions (e.g. technology self-efficacy, digital alliance) (Tan et al., 2024). Integrated TAM models have been superior to

basic TAM models in shedding light on the factors and mechanisms that influence people's intentions to use online mental health resources (*ibid.*).

Rogers' (2003) Diffusion of Innovations theory (DOI) is a theory of how innovations spread that has been used widely in technology adoption research (Yadegari et al., 2024). The DOI posits that the process of innovation diffusion has four key elements (innovation, communication channels, time, social system). Time is an important component of the DOI. By contrast to the TAM and UTAUT, in the DOI the adoption of an innovation "is not a temporary behaviour, but a model that takes shape after a series of activities and decisions" (Yadegari et al., 2024, p. 1102). Five characteristics of the innovation impact on adoption, namely relative advantage, compatibility, complexity, trialability, and observability. Individuals' perceptions of these characteristics determine the speed with which an innovation is adopted by the members of a social system (Sahin, 2006). Based on their relative speed of adoption compared with other members in the system, members are categorised into five categories of adopters, called innovators, early adopters, early majority, late majority, and laggards (*ibid.*). The application of the DOI to eHealth / eMH adoption is moderately common (Heinsch et al., 2021). In the context of online mental health interventions and telemental health, available evidence, mostly focusing on adoption by healthcare providers, indicates that the DOI's adopters categories and innovation characteristics provide useful frameworks for understanding different views of, motivations, and levels of readiness to adopt these eMH resources, as well as barriers and drivers of adoption (Anttila et al., 2011; Carper et al., 2013; Feijt et al., 2018; Melia et al., 2021; Williamson Yarbrough, 2023). The DOI has also been applied to study online mental health adoption as a process (Feijt et al., 2018).

A limit of existing studies that have applied theories of technology acceptance such as the UTAUT, TAM and DOI to studying the acceptance of eHealth / eMH is that these theories are not always adequately adapted to fully reflect the complexity of eHealth / eMH care and the additional factors of technology acceptance that are specific to online health and mental health care environments (Apolinário-Hagen et al., 2017; Li et al., 2013). Taking this

into consideration, another trend in the area of theory-driven studies of online mental health adoption and development relates to behaviour frameworks that have been tailored to or specifically developed for online mental health interventions (Naslund et al., 2017). Examples include Dynamic Models of Behaviour and Behaviour Models for Just-in-Time Adaptive Interventions (used to create online interventions that harness mobile and wearable technology to provide interventions that are responsive to individual's changing needs for support over time and able to adapt accordingly) (Naslund et al., 2017; Spruijt-Metz et al., 2015), Mohr et al.'s (2011) Supportive Accountability model (used to understand how human support enhances users' adherence to online interventions), Mohr et al.'s (2014) Behavioural Intervention Technology model (a framework that guides the design of online interventions in a comprehensive manner, "from the clinical aim to the technological delivery framework" (*ibid.*)), and Cross and Alvarez-Jimenez's (2024) Digital Cumulative Complexity Model (which explains and supports users' engagement in online mental health interventions by considering "broader contextual factors and their complex interactions with personal characteristics, intervention requirements and technological features" (*ibid.*)). The development of bespoke behaviour models for online mental health resources exists at the intersection of psychology and information technology and their many subfields.

2.5 The landscape of eMental Health services and supports in Ireland

The interest in eMH is growing in many countries worldwide, but there is considerable variation between countries at the level of eMH related activity. The use of eMH for mental health care provision is already relatively or well established within the mental health systems of some countries (e.g. US, Australia, Scandinavian Countries, UK), while it is still slow in other countries despite their growing interest in eMH (Gaebel et al., 2020; Kalman et al., 2024; Topooco et al., 2017). Topooco et al. (2017, pp. 2–3) distinguished countries into three groups depending on their level of eMH implementation: "frontrunners" are countries that have comparatively "come far in terms of inclusion of e-health and presence

of digital treatment approaches”; “followers” are countries where eHealth and eMH are still evolving; and “learners” are that still have limited experience and implementation of eHealth and eMH. Currently Ireland can be placed in the middle group (Gaebel et al., 2021).

eMH innovation in Ireland has primarily been driven by the initiatives of individual organisations, including many voluntary mental health organisations and others such as universities, private mental health services, social enterprises (e.g. MyMind), and technology entrepreneurs (e.g. SilverCloud Health) (Mental Health Reform, 2020). In many cases, the adoption of eMH solutions in Ireland has been a bottom-up response to problems of service access in local communities or particular user groups, and have been independently put in place by the organisations serving those communities or groups upon identifying unmet access needs within them (Gaebel et al., 2020; Mental Health Reform, 2020). An early example of this is the *bodywhysConnect* online support group for people with eating disorders, established by Bodywhys as early as 2001 in response to the barriers experienced by people to accessing Bodywhys’ face-to-face support groups, such as stigmatisation and lack of anonymity, especially in rural areas (Darcy & Dooley, 2007).

On the broader system level, the Government and the public (HSE) mental health care system have been slower at addressing and implementing eMH. This has been attributed to a number of structural barriers, including capacity issues in the public mental health care system, an underdeveloped IT infrastructure, and the lack of specific eMH policies and strategies (Gaebel et al., 2020, pp. 152–154; Reilly et al., 2022). Although these issues remain to be properly addressed, over time there has been a notable increase in eMH related activity at the policy level as well as at the practice level across all Irish mental health sectors (public, private, voluntary).

On the level of policy and related activities, initial but limited references to eMH were found in the old mental health policy framework *A Vision for Change* (published in 2006) and in the Irish eHealth Strategy (published in 2013) (Gaebel et al., 2020). Over the past ten years eMH has been given attention in a growing number of documents that have provided

specific eMH adoption recommendations (Cullen & McDaid, 2017; National Youth Mental Health Task Force, 2017), briefings and state-of-the-art reports on the Irish eMH ecosystem (Cullen, 2018; Mental Health Reform, 2019, 2020), and best practice guidelines (Chambers & Murphy, 2015; IACP, 2021, 2024; PSI, 2020). The current national mental health policy *Sharing the Vision* (Government of Ireland, 2020) recommends the implementation of eMH to augment existing mental health services, specifically in the domain of mental health promotion, prevention and early intervention and the domain of service access, coordination and continuity of care.

Currently, Ireland has a strong, active interest in eMH as evidenced by these policy developments and the many initiatives and eMH solutions that are already in place in all mental health sectors. For example, eMH support options are prevalent across major voluntary mental health organisations. The Irish voluntary and community mental health sector plays an important role in relation to mental health promotion and education and to providing mental health support to the communities these organisations work with (Government of Ireland, 2020). National voluntary organisations such as Aware, Bodywhys, Samaritans, Pieta House, Suicide or Survive, Spunout, and the Irish Society for the Prevention of Cruelty to Children (ISPCC), all traditionally providing supports such as phone lines, in-person counselling, and in-person support groups and programmes, have expanded their services through a range of eMH options, including email, text and chat support services, online and phone counselling, clinically moderated online live support groups (chats) and programmes, and online self-help programmes for psychoeducation or early treatment. Mental health information and signposting to available supports is another important area of eMH activity for these organisations. An example of this is Bodywhys' Active Waiting support webpage for people seeking treatment for an eating disorder, a collection of useful online information and resources "for those who may have started the GP / referral process, but are not yet at the treatment stage" (Bodywhys, n.d.).

eMH has also been playing an important role in expanding support options and improving service access for third level students, helping support higher demands for student mental

health services (Mental Health Reform, 2019) and also helping to reach marginalised and at-risk student groups that usually do not use student mental health services (e.g. students from ethnic minorities, students considering suicide or self-harm) (Clarke, 2024). Examples of existing eMH initiatives in third level settings include online counselling and online mental health / wellbeing programmes and workshops offered in-house by individual third level institutions, SilverCloud CBT online self-help programmes, and peer to peer college student eMH supports such as the after-hours phone line NiteLine and the online support community platform Togetherall (jointly funded by the HSE and Higher Education authority).

Lastly, digital mental health initiatives have intensified within the HSE since 2018 (HSE Ireland, 2024). The pandemic acted as a catalyst for quicker and wider implementation of eMH (Kalman et al., 2024), particularly telemental health (use of telephone and online video connection to provide mental health services), across all mental health sectors (public, private, voluntary) (Mental Health Reform, 2021), but other initiatives also emerged during this time which accelerated the pace of digitisation of public mental health care services. A number of existing eMH services and supports developed by the HSE in collaboration with voluntary, third level and other organisations were rolled out nationally between 2020 and 2023. Additionally, in 2022 the Digital Specialist Group was established to drive the *Sharing the Vision* digital mental health recommendations and develop a Digital Mental Health Action Plan for the HSE (currently under development) (Clarke, 2024).

The current national mental health policy *Sharing the Vision* (Government of Ireland, 2020) envisages mental health services and supports in Ireland to be multi-disciplinary, integrated, and coordinated through a stepped care approach. In this approach, supports and services are mapped along a continuum from least to most intensive to address needs and circumstances of varying complexity. Figure 1 shows the four-tiered stepped-care approach that organises service delivery in Ireland, as presented in the *Sharing the Vision* policy.

Figure 1 - Stepped care approach to mental health service delivery in Ireland



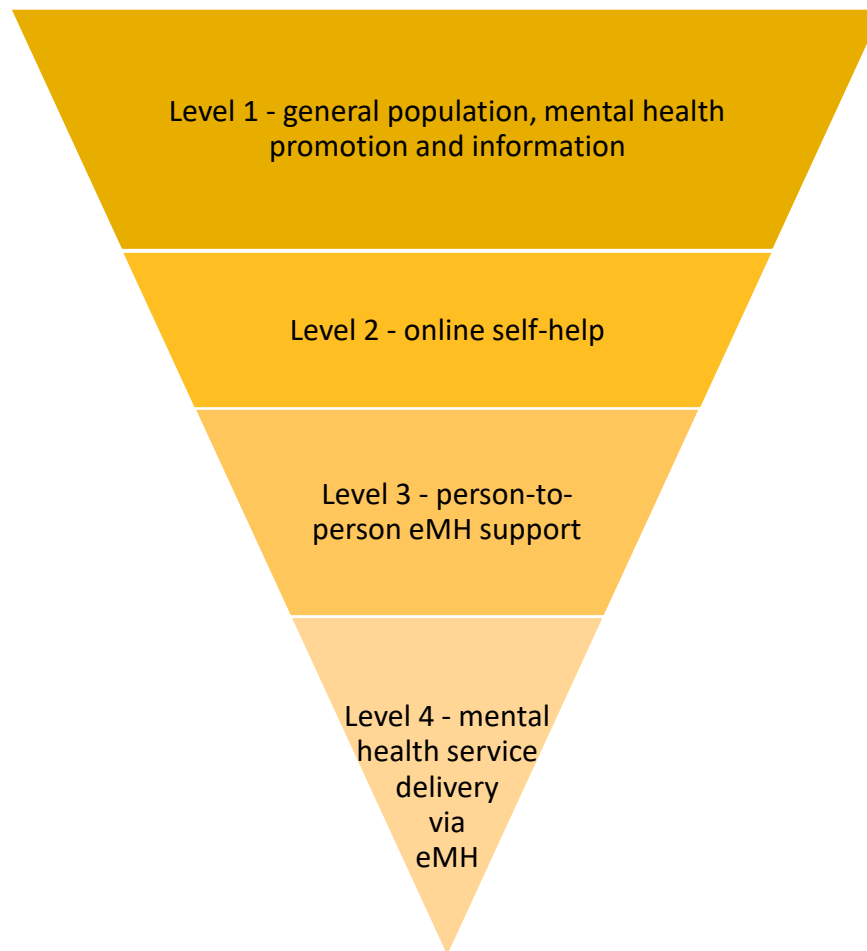
Government of Ireland (2020, p. 35)

Low-intensity supports are provided by the services in Tier 1 and Tier 2, while medium-intensity supports are provided by both Tier 2 and Tier 3 services. High-intensity supports are those provided by Tier 4 services. Although represented separately and sequentially, the four levels of the stepped-care model proposed by the *Sharing the Vision* policy do not constitute a rigid hierarchy, resulting in a layered model of care (Twomey & Byrne, 2012). Each person accesses the level of support that matches their needs and can subsequently move to a different level as their care needs change. They can also simultaneously access services and supports from more than one level, according to their needs and preferences (Government of Ireland, 2020).

Sharing the Vision recommends that a range of integrated supports and services are made available to the whole population as part of this model, including eMH approaches which the policy sees as a key enabler for mental health services to achieve this (Clarke, 2024). The policy recommends that eMH is leveraged to promote mental health awareness, signpost to available services and supports, and enhance access to supports and services. In relation to the latter, *Sharing the Vision* envisages that eMH technologies will play a role in enhancing access to low and medium intensity supports through the implementation of online mental health programmes designed for health and wellbeing promotion (Tier 1 and 2) or for early intervention and treatment (Tier 2 and 3). It also acknowledges telemental health as an aid in the delivery of low and medium intensity talking therapies (e.g. counselling delivered over the phone or online video connection) and the use of telepsychiatry (a branch of telemental health) to enhance access to specialist mental care services and expand emergency mental health care.

Existing eMH initiatives by the HSE relate to the *Sharing the Vision* eMH recommendations and provide support options at the various levels of the stepped-care model.

Figure 2 - Stepped-care model approach to eMH resources



From Clarke (2024)

Clarke (2024) offers an overview of the HSE eMH initiatives that have been implemented within this stepped-care based eMH model. At Level 1, recent initiatives include the provision of trusted and reliable information about mental health and available supports, particularly through the yourmentalhealth.ie website. Level 2 relates to eMH resources for self-help. Existing examples in the HSE include the My Mental Health Plan online interactive tool, the HSE Eating Disorder Self Help App, and online self-directed programmes such as the Stress Control and Minding Your Wellbeing programmes. At Level 3 of the model are found non-clinical person-to-person online support options such as the text support service Text About It provided by Spunout and funded by the HSE, and the already mentioned Togetherall online support community for third level students. Finally, at Level 4 are digital

options for those requiring more specialised services, including telepsychiatry, online counselling (e.g. MyMind, Turn2Me), digital services for young people delivered by partner organisations such as Jigsaw and Spunout, and the national digital CBT service which provides access to online guided CBT programmes for anxiety and depression, delivered by SilverCloud Health via referral from GPs or primary care mental health care providers (Clarke, 2024).

2.6 Ireland compared with eMental Health advanced countries

Ireland has achieved an appreciable level of engagement with eMH over the last ten years, thanks to the Irish government and the HSE putting eMH on the national mental health care agenda. Compared with other high-income countries, eMH in Ireland can be considered as being in-between those with a limited level of eMH engagement and those with well-established eMH strategies like Australia and England (Gaebel et al., 2021).

Australia has been at the forefront of researching, developing and implementing eMH supports and treatments since the late 1990s / early 2000s (Burns et al., 2014; Christensen et al., 2002; Rosenberg et al., 2023). Since then, eMH services in Australia have expanded rapidly, facilitated by a number of factors. Australia has had high research interest by universities and high research output in the area of digital mental health interventions for more than two decades (Drozd et al., 2016; Ganapathy et al., 2024). Crucially, the use of digital solutions to assist in preventing and treating mental health problems, as well as to improve integration and coordination of care, is strongly endorsed in several key mental health policy documents (Australian Government National Mental Health Commission, 2022; Butterfly Foundation, 2017; Department of Health, 2017; NEDC, 2023) as well as by dedicated eMH policy strategies (Australian Digital Health Agency, 2023; Department of Health, 2021) and safety and quality frameworks (Australian Commission on Safety and Quality in Health Care, 2020). Australia is one of the first governments worldwide to have

a national digital mental health strategy, which it introduced in 2012 (Bennett-Levy et al., 2021).

Multiple country-wide projects supporting the availability, implementation and awareness of eMH supports and treatments have been funded by the Australian federal government, including as part of the Telephone Counselling, Self Help and Web-based Support Programme (since 2006) and the national e-Mental Health Strategy (since 2012) (Department of Health, 2020), Project Sinergy (2014-2016 and again in 2017-2020) (Milton et al., 2021), the Under the Radar project in 2019 (Department of Health, 2020) and, recently, the nation-wide initiative of a digital early intervention service due to be rolled out in 2026 (and based on UK's Talking Therapies model, discussed later in this section) (Baldwin, 2024). Governmental funding of several national eMH resources was also increased during the COVID-19 pandemic in order to increase their availability (Rosenberg et al., 2023). As of 2020, the Australian government was funding 29 digital mental health services (Department of Health, 2020, p. 34). Additionally, the Better Access scheme (launched in 2006) extends Medicare benefits to people with mental health problems eligible for short-term evidence-based interventions, both offline and online, in order to improve service access by helping them with the costs (Pirkis et al., 2022)³.

Lastly, in common with Ireland, the mental health voluntary sector (e.g. ReachOut, headspace, Kids Helpline, the Butterfly Foundation, The Black Dog Institute) has been a key player in the provision of eMH supports and treatments at various levels of need since the early days of eMH in Australia (Burns et al., 2014). Many digital mental health services in Australia are leading voluntary organisations (Ridout et al., 2024), making an important contribution to the high level of presence that digital mental health supports and treatments have in Australia.

³ Medicare is Australia's universal health care system. It provides access to a range of health services at low or no cost.

The UK is another country that is considered an eMH forerunner (Topooco et al., 2017). In reality, eMH adoption in the UK is largely driven by England, and is otherwise unevenly distributed (Allcock et al., 2024) and much more limited within UK's other member nations (Gaebel et al., 2021). England's level of engagement with eHealth and eMH also stands out compared with other European countries (*ibid.*), having rapidly expanded in the last ten years thanks to the intensification of policy endorsement, government funding, research, and implementation initiatives.

Multiple health policies by government agencies and the National Health Service (NHS) have strongly supported the digitisation of the national health sector (National Information Board, 2014; NHS, 2014, 2019, 2025), taking forward the work set out in earlier national digital strategy documents (National Information Board, 2014, p. 3). In England, designated organisations lead this work, including NHS Digital since 2016 (formerly Health and Social Care Information Centre) (NHS Digital, 2017, p. 9) and NHS England's Transformation Directorate, initially born as NHSx in 2019 (NHS England, n.d.-c). With capacity issues in mental health care growing and pressures to make mental health a national healthcare priority, over the years the above mentioned policies have also put increasing emphasis on the role of eMH to improve mental health care. In 2016, the NHS framework for action in mental health care The Five Year Forward View for Mental Health (Mental Health Taskforce, 2016) included an ambition to expand access to digital mental health services to increase treatment accessibility and choice (Gaebel et al., 2020, p. 159), a commitment to developing regulatory frameworks to ensure the quality and safety of the digital tools to be implemented in the NHS mental health services (e.g. digital interventions, electronic health records), and the allocation of funding to evaluate and scale existing digital tools (NHS, 2016). Two 2019 NHS policies further highlighted the key position of the digital in the future of the NHS mental health services, with stated plans to continue to support the development and implementation of digital resources to support mental health and recovery (Foley & Woollard, 2019; NHS, 2019). Funding towards eMH has been made available at multiple times, for example the 2016 NHS England's funding to speed up the adoption of eMH tools (NHS England, 2016), the 2023 government funding towards the

digitisation of NHS England’s mental health services (Mental Health Network NHS Confederation, 2023), and 2024 funding to support organisations in the development of work-related eMH interventions (SBRI Healthcare, n.d.).

In the area of regulatory and evaluation frameworks, the Medicine and Healthcare products Regulatory Agency (MHRA)⁴ and the National Institute for Health and Care Excellence (NICE)⁵ currently provide the existing applicable frameworks, including MHRA regulations on medical devices and NICE’s Evidence Standards Framework for digital health technologies (developed in 2018-2019) (NICE, n.d.-b). NICE’s Early Value Assessment programme for health technologies (NICE, n.d.-a) is also useful in this context. Importantly, a collaborative project involving MHRA and NICE, with funding from Wellcome Trust, is addressing the limits of the regulatory frameworks of these two bodies in the context of digital mental health, with the goal of developing guidance on regulating and evaluating digital mental health technologies specifically (Hopkin et al., 2025). Guidance for manufacturers of such technologies has so far been released as part of this project (Medicines and Healthcare products Regulatory Agency, 2025).

Alongside work in the area of policy and regulations, several other eMH initiatives have been put in place to expand and accelerate the implementation of digital mental health resources in the national healthcare sector, by supporting the development of the necessary knowledge. Examples include the NHS Mental Health Global Digital Exemplars (digitally advanced mental health trusts serving as mentors to other trusts) (NHS England, n.d.-a), the NHS Mental Health Digital Playbook (to support clinicians and organisations “that are looking for digital tools that support the delivery of patient pathways” (NHS England, n.d.-b), and the NHS Principles for Using Digital Technologies in Mental Health Inpatient Treatment and Care (NHS England, 2025).

⁴ The MHRA is the UK body responsible for regulating medical devices, including digital mental health technologies that qualify as software as a medical device.

⁵ NICE provides guidance to the NHS England on clinical practice, including digital mental health treatments, based on the review of published evidence. The first NICE guidelines for digital mental health treatments were issued in 2006 (Bennion et al., 2017).

In the area of digital mental health supports, eMH resources implemented by the NHS include the Every Mind Matters website and the provision of NICE approved technology-enabled CBT-based approaches for mild to moderate symptoms of depression and anxiety (e.g. online guided CBT-based programmes) as part of the NHS Talking Therapies service, which provides free access to psychological therapies for common mental health problems. This service, formerly known as Improving Access to Psychological Therapies (IAPT), started to include online mental health interventions almost two decades ago (Department of Health, 2007). Treatments within this service are delivered using a stepped-care model, with online mental health interventions delivered at Step 2 (low-intensity interventions) (Jardine et al., 2024), similar to Ireland as explained in Section 2.5.

Outside of the NHS, online mental health supports are also provided by mental health charities and community groups (e.g. Mind, Anxiety UK, Bipolar UK, Mental Health Innovations, Walk the Talk, and many more), including mental health information and services signposting, online support groups and self-help programmes, online support lines, and online counselling. For example, the website of the Mind charity focuses on providing mental health information and signposting, while the charity Mental Health Innovations provides a range of digital mental health supports, including Shout, a national, 24/7 crisis text-message service, and The Mix, an innovative online mental health service for young people (Mental Health Innovations, n.d.). Lastly, the expanding digital mental health landscape in England is also evidenced by the presence of a number of prominent digital mental health companies, i.e. private developers of eMH technologies, from which UK organisations have been procuring the eMH technologies they deploy. Examples include SilverCloud Health, Thrive, ieso, Healios, and Togetherall. The online mental health interventions offered in the NHS Talking Therapies are provided by some of these eMH companies (Catarino et al., 2018; Jardine et al., 2024). Employers and universities in the UK also partner with eMH companies to provide their staff or students with online options for support (SilverCloud Health, n.d.; Thrive Mental Wellbeing, n.d.), reflecting another way in which eMH is expanding in the UK.

While not all aspects of the eMH system of countries like the UK and Australia are well developed (e.g. limited integration between online mental health services and the overall mental health ecosystem) (Mental Health Network NHS Confederation, 2023; Ridout et al., 2024), when compared to countries like Ireland it is evident that they have reached a comparatively mature stage, characterised by a good level of alignment between higher hierarchies (government, policy makers) and on-the-ground stakeholders (researchers, digital mental health developers, mental health service providers and users), strong endorsement at policy level, translation of policy into action, adequate funding for research and implementation, adequate digital infrastructure, and dedicated eMH policies and frameworks (e.g. eMH strategies, eMH quality and safety frameworks) (Gaebel et al., 2020). Many of these areas are not well developed in Ireland, posing a barrier to the expansion of eMH (*ibid.*).

2.7 Conclusion

This chapter has outlined the main areas of eMH application related to the delivery of mental health services and supports. It has also discussed eMH developments in Ireland at the level of policy and practice, highlighted the main eMH initiatives that relate to the current Irish mental health policy, and described two international examples of more advanced eMH contexts for comparison. This chapter helps contextualise the research topic of the present study and the review of the literature, which is presented in the next chapter.

CHAPTER 3 – LITERATURE REVIEW

3.1 Introduction

The literature review presented in this chapter discusses the identification of the particular research gaps and threads that provide the logic for the study's aims and objectives. The chapter commences with a brief introduction of how mental health problems have been treated in Ireland. There follows a review of the dominant aspects of the literature on online mental health interventions and identification of a number of issues within them. This will set the ground for the two subsequent sections, which will continue the work of critically discussing gaps in the literature by focusing on two of them in particular. The concluding section introduces the aims and objectives that are set by this research in response to the identified gaps.

3.2 Mental health treatment in Ireland

It is useful to first provide a brief overview of how mental health problems have been treated in Ireland. This is to introduce the notion of psychologically based services and treatments, which is important to the discussion of online mental health tools contained in this chapter.

Historically, mental health services in Ireland have been modelled around institution-based care, i.e. in-patient treatment in psychiatric hospitals, where “patient care was prescribed by medics and implemented by nurses, with patients having little control over decision-making [and] clinical treatment” (Brennan, 2014, p. 18). Despite policy changes in the second half of the 20th century leading to the progressive decline in the number of psychiatric hospitals and the reorientation of mental health care towards community-based provision, the governmental structures and culture of institutionalised / psychiatric

care strongly persisted in the new community services (Brennan, 2014). Another element of mental health services (hospital- and community-based alike) was that they were bio-medically focused (i.e. based on an understanding of mental health problems as medical, or biological, conditions), with biological interventions being the dominant form of treatment, particularly medication (*ibid.*).

During this time the use and availability of psychosocial interventions was extremely limited (Brennan, 2014), but this began to change following the expansion of alternative perspectives, including psychological and social explanations of mental health problems, patients' perspectives, and the social movement known as the user / survivor movement (Pilgrim, 2005). Policy developments in the last two decades in Ireland have consolidated the provision of community based services, embraced a view of mental health as dependent on a range of interconnected factors (physical, psychological, and social), and acknowledged psychosocial supports as fundamental to mental health services, particularly psychological supports (Department of Health and Children, 2006; Government of Ireland, 2020; HSE, 2017). The use of psychological therapies in the treatment of mental health problems is supported by research evidence internationally (Hunsley et al., 2014; Berkham and Lambert, 2021) and nationally (Brand et al., 2021; HSE, 2022), and is recommended by the clinical guidelines developed by various professional and scientific bodies (National Institute for Health and Care Excellence (NICE), American Psychological Association (APA) Division 12, Australian Psychological Society, Cochrane Collaboration) (Morian et al., 2017).

Today mental health care provision in Ireland is primarily community based. There has been growing demand for psychosocially oriented services and treatments among service users (Ó Féich et al., 2019) as well as GPs and mental health professionals (Kelly, 2022; PSI, 2017). Currently, the availability and integration of these treatments in the mental health system is still relatively limited, with mental health services remaining mainly bio-medically focused and highly reliant on medication treatment (Brennan, 2014; Ó Féich et al., 2019; O'Doherty et al., 2020).

3.3 Dominant trends in the literature on online mental health interventions

Initiatives such as the Counselling in Primary Care (CIPC) Service in Ireland (launched in 2013) and NHS Talking Therapies in the UK (formerly Improving Access to Psychological Therapies (IAPT), launched in 2008) are aimed at expanding the national availability of psychological therapy so that patients' preferences for this treatment can be met and services' overreliance on medication can be counterbalanced (Clark, 2018). However, the dominant or traditional delivery model for psychological treatments, which consists of highly trained mental health professionals delivering treatment at in-person sessions in a clinical setting (Kazdin, 2019), is highly resource and cost intensive to implement. It also has poor scalability (ability to reach a large number of people) due to its reliance on the availability of highly specialised professionals and to treatment access being location bound and requiring physical attendance of patients (*ibid.*). The reliance of treatment delivery on this model, combined with increasing treatment demands, has resulted in several shortcomings such as shortages of accredited therapists and specialist services, long waiting lists, high patient caseload leading to limited therapist time, and unequal distribution of services between urban and rural areas. Consequently, many people experience delays and other difficulties to accessing psychological treatments (Bergström et al., 2010; Cooper & Bailey-Straebler, 2015; Ó Féich et al., 2019). Additionally, the services that provide these treatments are not always tuned to individuals' help-seeking needs. There is often a lack of alternatives for those who have difficulties accessing services due to transportation issues or geographical distance, those who cannot afford treatment costs, those from ethnic and cultural minorities, and those who do not approach in-person services due to the stigma they feel or the lack of anonymity, particularly in closed communities (Darcy & Dooley, 2007; Hutchinson, 2014; Kazdin, 2019). This lack of flexibility and options greatly limits the reach of psychologically oriented mental health services and treatments, i.e. the extent to which they can serve the treatment and treatment access needs of different individuals and groups (Kazdin, 2019).

Among efforts to address these issues, the search for solutions that can offer greater scalability, reach, and cost-effectiveness has become a priority (Kazdin, 2019). It also figures prominently as a rationale for putting online solutions on research and policy agendas. The first generation of studies on online mental health interventions looked at computers, the Internet and digital technology as novel means of treatment dissemination that, thanks to their increasing affordability and growing pervasiveness within people's lives and some groups in particular (e.g. young people), were regarded as a promising way to help psychological treatments reach many more people in need of treatment than in-person mental health services alone (Barak & Grohol, 2011; Richards, 2008). This first generation of studies was particularly concerned with harnessing technology in an attempt to free up the delivery of evidence-based psychotherapeutic approaches from the constraints of the dominant, in-person model of treatment delivery. Research in this area has consisted of translating traditional psychotherapeutic interventions to online modes of delivery, including both "therapist-led" and "programme-led" approaches (Cooper & Bailey-Straebler, 2015).

Therapist-led approaches are typically referred to as online therapy (Barak & Grohol, 2011). Like traditional in-person therapy, online therapy consists of treatment content that is delivered by a therapist (Cooper & Bailey-Straebler, 2015), although remotely instead of in person. Clinical trials have investigated various forms of online therapy, including therapist and client meeting face-to-face virtually online or, in earlier studies, through videoconferencing equipment (Mitchell et al., 2008; Ruskin et al., 2004), individual email therapy (asynchronous and text-based) (Robinson & Sefarty, 2008; ter Huurne et al., 2013; Vernmark et al., 2010), and group therapy using online chatrooms (in real-time and text-based) (Paxton et al., 2007). Online therapy has been found to be effective compared with controls such as no or delayed treatment and self-directed interventions with no or minimal therapist guidance, with improvements maintained over time (Paxton et al., 2007; Robinson & Sefarty, 2008; Ruwaard et al., 2013; ter Huurne et al., 2013; Vernmark et al., 2010). Studies have also shown that the effects of online therapy are comparable to those of in-person therapy, suggesting it is as effective (Barak & Grohol, 2011; Mitchell et al.,

2008; Ruskin et al., 2004), although the rate of improvement in online therapy patients might be slightly slower (Poletti et al., 2021). Limited before the COVID-19 pandemic, online therapy, and particularly online face-to-face therapy (i.e. via video), is now practiced by many therapists, a result of the widespread shift to working online that occurred during the pandemic. Nonetheless, online therapy remains in many aspects a relatively new area of study. Spurred on by the new state of affairs, more research has appeared in the last few years, particularly into the dynamics of working therapeutically online, the changes experienced by practitioners and patients compared with working in person, and the associated challenges and benefits (Browne, 2023; Giordano et al., 2022; Maher et al., 2023; McBeath et al., 2020; Stadler et al., 2023).

Being a form of therapist-led treatment, online therapy still depends on the availability of trained specialists, which poses specific challenges to treatment scalability such as how to train more therapists or how to increase the clinical range of therapies (Cooper & Bailey-Straebler, 2015). The scalability of therapist-led treatments is limited compared with programme-led treatments, where the treatment content is accessed directly by the client (*ibid.*). Programme-led treatments are the online mental health interventions described in section 2.3 of Chapter 2. They are also referred to as online self-help programmes. In these programmes the treatment content, typically informed by a psychotherapeutic theory, is presented in a structured manner (e.g. modules) and the client engages with it on their own, with or without support from a therapist or other guide (e.g. trained facilitator or non-specialist professional). When available, support is often provided via email and its extent can vary greatly between programmes. Online mental health interventions that include guidance from a therapist or other supporter are also referred to as guided self-help, while those that do not are also known as unguided self-help.

The treatment efficacy of online self-help programmes, and particularly guided ones, has been a core focus of the digital mental health field since its inception (Barak & Grohol, 2011; Mohr, Weingardt, et al., 2017; Philippe et al., 2022). There has also been a notable overlap between this and the search for ways to broaden the dissemination and reach of

cognitive behavioural therapy (CBT). This has resulted in CBT being the treatment approach most commonly researched and used in online self-help programmes (Barak & Grohol, 2011; Lattie, Stiles-Shields, et al., 2022; Morrison, 2020), interchangeably referred to as online or digital CBT interventions, computerised CBT (cCBT), or Internet-based CBT (iCBT). Another characteristic of the literature on online self-help programmes is that it has been largely driven by a service delivery agenda, underpinned by a view of technology as an instrument of care delivery with supposed advantages of scalability and cost-effectiveness over the traditional (in person) way of delivering evidence-based psychological treatments (Bauer & Moessner, 2013; Bulik et al., 2012). CBT is one such approach, formally recommended in the treatment of common mental health problems (depression, anxiety and panic disorders, obsessive compulsive disorder) and some eating disorders (NICE, 2005, 2013, 2017, 2022). CBT is subject to the same limits of scalability and reach of the dominant model of treatment delivery described previously. From a service delivery perspective, CBT that has been adapted to be delivered in guided self-help mode is on the higher end of the scalability spectrum since learning this form of CBT requires less specialised training than full-scale CBT, making it deliverable by a range of health professionals; it also involves less contact between provider and client, and is less costly to implement than standard CBT (Fairburn & Wilson, 2013; Lattie, Stiles-Shields, et al., 2022; Wilson & Zandberg, 2012). These advantages extend to online CBT programmes delivered with the support of a therapist or coach (Lattie, Stiles-Shields, et al., 2022). Given the widespread Internet use in the population, using the Internet to deliver CBT self-help programmes is seen as having even greater scalability and potential to facilitate access to CBT for more people because of the advantages of flexible access (access is not confined to the physical location and work hours of service centres) and anonymity (treatment can be accessed in the privacy of one's home) (Wilson & Zandberg, 2012).

Research trials comparing guided online CBT interventions with controls (no treatment, waiting lists, treatment as usual, or unguided online CBT programme) support its efficacy for a range of mental health problems including depression, anxiety, and panic (Andersson et al., 2019; Bergström et al., 2009; Doherty et al., 2012; Perini et al., 2009; Titov et al.,

2008, 2009; Titov, Andrews, Davies, et al., 2010; Titov, Andrews, Johnston, et al., 2010; Vernmark et al., 2010; Wims et al., 2010), bulimia and binge eating disorders (Carrard, Crépin, Rouget, Lam, Golay, et al., 2011; Carrard, Crépin, Rouget, Lam, Van der Linden, et al., 2011; Carrard, Fernandez-Aranda, et al., 2011; Fernández-Aranda et al., 2009; Sánchez-Ortiz, Munro, et al., 2011), as well as post-traumatic stress disorder and substance addiction problem (Lattie, Stiles-Shields, et al., 2022; Philippe et al., 2022). Research trials also indicate that the overall effects of online CBT interventions are equivalent to those of both individual and group CBT delivered in person by a therapist (Andersson et al., 2019; Bergström et al., 2010; Carlbring et al., 2018; Hedman et al., 2011; Kiropoulos et al., 2008; Lattie, Stiles-Shields, et al., 2022; Weightman, 2020). Guided online CBT programmes for anxiety and depression recently implemented by the National Health Service in Ireland have proved effective in reducing symptoms, with users also reporting high levels of satisfaction with the programme (Harty et al., 2023). The delivery of unguided online CBT interventions has also been studied and is of particular interest from a treatment dissemination perspective because of its greater potential for scale than guided online CBT interventions. Compared with these, unguided online CBT interventions have often been found to produce inferior treatment outcomes (Lattie, Stiles-Shields, et al., 2022; Philippe et al., 2022), but overall they have been less well studied and there is emerging evidence that they may be an efficacious form of treatment for some individuals (Karyotaki et al., 2021; Loughnan et al., 2019).

According to Philippe et al. (2022), available research into the efficacy of self-help online interventions for anxiety, mood problems, stress, and trauma is one of the most substantial in terms of both number of studies, quality, and strength of evidence, compared with digital mental health research on other mental health conditions and intervention modalities. Philippe et al. (*ibid.*) found that the overall quality of this body of literature, which consists of randomised controlled trials (RCTs), is moderate, and advise that more robust RCT designs are needed to improve it, involving appropriate control conditions, long-term follow-up assessments, and standardized rating scales to measure outcomes. Small samples are another common issue in RCTs of online self-help programmes for mental

health problems, and can result in samples not being adequately powered to detect differences between treatment conditions. RCTs are considered a gold standard in generating clinical evidence of treatment efficacy. While the points made by Philippe et al. (2022) to improve the quality of RCTs emphasise adherence to RCT best practice, the traditional RCT model has been criticised for its rigidity (Mohr, Weingardt, et al., 2017) and the associated limits in the evidence it generates, such as a tendency to focus on standardised treatment programmes (Doherty et al., 2012). According to Doherty et al. (*ibid.*, p. 1429), in research on the efficacy of online mental health programmes “there is pressure towards precisely defined and somewhat rigid interventions which are amenable to study in randomized controlled trials, rather than personalized interventions. The result of this is that the intervention may not seem as relevant to the client and because of this impact on engagement”. Another limit of RCTs is that efficacy is typically measured based on participants who complete a treatment programme, i.e. individuals who are interested or motivated enough to adhere to it. According to Mohr, Weingardt, et al. (2017, p. 428), these people are “likely an infinitesimal portion of the larger population served by care systems”. Additionally, from a technology development perspective, the rigidity of traditional RCT designs disregards the iterative nature of the process of digital product development (Peiris et al., 2018). Coupled with the fact that digital technologies are continuously evolving, this can result in outdated online mental health technologies by the time these have been clinically validated (Mohr, Weingardt, et al., 2017).

Despite these limits, the concern with scaling up CBT and other therapeutic approaches has been a major driver in the development and research of online therapy and online self-help programmes. In turn, the positive treatment outcomes demonstrated by these interventions in efficacy trials have fed back into the mental health service delivery agenda where it has motivated the continued development and efficacy evaluation of these interventions, particularly online self-help programmes. Effective online interventions are expected to be of particular benefit to those whose treatment access needs are not met by in-person treatment, such as those who desire more flexible and / or confidential access to treatment, do not wish to have therapy in person, are unable to travel, or live in areas with

limited availability of needed services (Bond et al., 2023; Gaebel et al., 2020; NICE, 2023b, 2023a; Weightman, 2020). However, while the supposed potential of online interventions to help reduce barriers to treatment access regularly serves as a rationale for efficacy studies, the actual impact of these interventions on treatment access and reach remains unclear. Research on such interventions has largely focused on evaluating their efficacy and effectiveness (Gaebel et al., 2020; May et al., 2001). This is understandable, given that the need for an intervention to be scalable does not override the need for it to be effective for the largest possible number of patients (Fairburn & Wilson, 2013). However, online interventions that are effective in research trials have frequently failed to be successfully implemented in real-world settings (Mohr, Riper, et al., 2017). The adoption of these interventions by many mental health systems (Ireland included) remains slow and limited (Gaebel et al., 2020). Additionally, there persists a scarcity of research on the effects of existing online interventions on the treatment gap and on the mental health service delivery system overall (Bauer & Moessner, 2013; Gaebel et al., 2020; Musiat & Tarrier, 2014; Palmqvist et al., 2007). As a result, there remains a notable gap between the theorized role of digital mental health in drastically improving availability and access to mental health care and the realization of this vision (Gaebel et al., 2020; Roland, Lawrence, et al., 2020). Nonetheless, claims about the potential of digital mental health to help significantly improve mental health care delivery and coverage abound in the digital mental health literature, where this discourse is often employed as a rhetorical strategy to justify exploring the use of new technologies in the search for more effective and equitable forms of service delivery.

3.4 Lack of research on real-life experience of use of online mental health tools

Currently, a gap exists between the vision that policy makers, developers, and researchers have for digital mental health and the translation of this vision into effective online solutions in real life (Gaebel et al., 2020).

Online mental health interventions have been mainly developed based on what researchers and developers think users need in terms of mental health support and technology features (Fulford et al., 2016; Mohr, Weingardt, et al., 2017). End users' often marginal role in the design process of these interventions is believed to partly account for many such interventions failing to be relevant to the needs and preferences of their intended audience and underperforming when implemented in real-life contexts (Bucci et al., 2019; Chambers & Murphy, 2015; Mohr, Weingardt, et al., 2017). End users' views and input are often sought separately from the design and development process of digital interventions, through studies of people's attitudes and intentions to use such interventions if they experienced a mental health problem (Apolinário-Hagen et al., 2017; Linardon et al., 2021; March et al., 2018; Proudfoot et al., 2010) and via participant qualitative feedback following participation in an online intervention research trial (Celleri et al., 2024; Donkin & Glozier, 2012; Gerhards et al., 2011; Koelen et al., 2025; McClay et al., 2013; Sánchez-Ortiz, House, et al., 2011; Todkill & Powell, 2013). These approaches, which generate end users' input separately from the development of online interventions, can limit the extent to which users' insights can meaningfully help inform the development of these interventions alongside the insights of other stakeholders, a process known as co-production.

Additionally, specifically concerning studies of people's attitudes towards and intentions to use online interventions, these studies ask what people would do if they experienced a mental health problem or were seeking help for one (e.g. what treatment they would seek). This cannot be taken to reflect people's real-life decisions, i.e. what they would do if actually faced with such situations, challenging the use of the insights from such studies to help inform the design of online interventions. Furthermore, studies that explore people's intentions to use these interventions do not necessarily distinguish between initial uptake (e.g. downloading, signing up) and subsequent engagement, an important distinction to make given that factors prompting initial uptake may differ from those that support engagement after this initial point (Boucher & Raiker, 2024).

Limits also exist to qualitative insights generated through participant feedback following participation in an online intervention research trial. Emerging research comparing research trial usage rates of online mental health self-help interventions with real-world usage rates of the same interventions shows that usage and engagement is notably poorer in the latter, suggesting that people use online interventions differently in real life compared with trial settings (Baumel et al., 2019; Fleming et al., 2018). This is partly explained by the fact that the research trial conditions under which online interventions are tested and usually found to be effective may not resemble users' conditions of access and use in real-world settings (e.g. when online interventions are made available to the general public) (Baumel et al., 2019). For example, research trials involve assessment procedures that researchers are required to follow in order to establish the efficacy of an online intervention (e.g. pre- and post-intervention measurements of symptoms). They can have strict inclusion / exclusion criteria, such as the exclusion of individuals with multiple conditions or who are receiving other mental health interventions. They may also include conditions that affect engagement with the online intervention but that may not be available in real-world usage (e.g. reminders to log in to an online self-help programme) (*ibid.*). Another way in which participating in a research trial may affect use and engagement is when people feel motivated to complete participation because of a desire to help the researchers or to help others like them (Donkin & Glozier, 2012).

Qualitative investigations of the experiences of users of online mental health interventions are needed for their ability to generate deeper insights into the processes, needs, and motivations of users of these interventions and the barriers they face (Boucher & Raiker, 2024; Koelen et al., 2025; Leichsenring et al., 2019), but are still limited. According to Koelen et al. (2025), qualitative research into the experiences of users of CBT-based online interventions remains relatively scarce, despite the expanding abundance of RCTs on these interventions. According to Fulford et al.'s (2016) systematic review of qualitative research on the use of online / digital technology by people with mood disorders, there is a lack of research aimed at generating in-depth understanding of people's experience of use of these technologies, including online mental health interventions, in particular their

experience of use in real-world settings rather than as participants in research trials. Useful information is generated through explorations of participants' experience of use after participation in a research trial. However, as discussed above, people may view and experience the use of online interventions differently in the real world, highlighting the importance of focusing on real life experiences of use. Additionally, it can be difficult for qualitative research with RCT participants of online interventions to include the views and experiences of those who drop out from these studies, as it can be difficult to contact these participants once they withdraw. When RCT participants are invited to participate in qualitative follow-up interviews without the researcher purposefully selecting both intervention completers and drop-outs, this may result in a sample biased towards those with greater engagement and better experience than the larger RCT sample, with consequent overrepresentation of these experiences over less positive or negative ones (Jackson et al., 2024). In turn, these issues make it difficult for the qualitative arm of RCTs to investigate comprehensively the diverse factors that can affect engagement and dropouts (Boucher & Raiker, 2024; Doherty et al., 2012). Another limit of RCTs of online interventions is the fact that they focus on individual online interventions, producing a picture of an intervention being used in isolation, whereas in reality people may combine multiple online tools, with each serving a different purpose in the everyday management of their mental health problems (Chiauzzi & Newell, 2019; Stawarz et al., 2019b).

According to Webster (2002, p. 451), when new health technologies are developed, they “do not simply arrive in the health market – this has to be created, and clinicians and patients, regulatory agencies and health authorities all have to see them as of value”. Currently, because of the scarcity of in-depth research into the real-life experiences of use of online interventions by people with a mental health problem, it remains unclear whether the enthusiastic expectations that policy makers, developers, and researchers have for eMH correspond to how such interventions are actually viewed and used by those who are expected to benefit from them. In addressing this question, in-depth explorations of real-life experiences of use by people with a mental health problem have an important contribution to make, offering an understanding of what makes the use of online mental

health technologies meaningful (or not) to people (Fulford et al., 2016). In the Irish context, the importance of and need for research on users' experiences has been highlighted by a recent state-of-the-art review of eMental Health in the country (Cullen, 2018).

3.5 Role of technology in the “promissory” discourse on digital mental health

In sociological critiques of digital health discourses, the term “promissory” has been used to indicate the linguistic ways in which key stakeholders such as policy makers, developers, and researchers promote a vision of digital technologies as resources to be harnessed to solve issues of service availability and accessibility in health and mental health care, with purported cost-effective benefits for both service providers and users once these resources are successfully implemented (Henwood & Marent, 2019; Lupton, 2016). A characteristic of this discourse is an instrumental view of technology as a tool endowed with features that have the potential to help solve problems of care delivery and access for both mental health professionals and lay people (Lupton, 2018). This corresponds to a unidirectional view of the relationship between technology and user, where technology is framed as a tool put at the service of mental health systems and patients to bring them benefits, “a tool to achieve goals” (Henwood & Marent, 2019, p. 2; also Gulbrandsen et al., 2020). Another characteristic of the digital mental health promissory discourse is that it tends to promote the uncritical adoption of technology as a solution to the treatment gap in mental health care. This is due to its tendency to ascribe better opportunities for treatment access to the technological tools themselves (adding these tools to mental health systems is the agent of change), while people's personal, social and economic conditions, and the role these play in people's ability to access technology and mental health care in the first place, are often marginalised (Koteyko et al., 2015; Lupton, 2013, 2014). The promissory discourse “separate(s) the technology from its users as well as from the contexts of its use” (Koteyko et al., 2015, p. 480).

Qualitative sociological research has shown that there often is a discrepancy between the promissory representations of health-related technologies in policy documents, clinical literature, and manufacturers' documents, and end users' real-life experiences of using these technologies (Allen, 2012; Lehoux et al., 2004; May et al., 2001). The latter reveal that the process of adopting a health technology is characterized by complexity and ambivalence, to different extents for different people, in contrast to "assumptions about the straightforwardness" of improving access to care that inform promissory discourses of health technologies (Lehoux et al., 2004, p. 641). This literature indicates that what opportunities, benefits, and constraints users find in the health technologies they use emerge from a dialectical relationship between the users, the technologies, and the contexts within which these technologies are used (Faulkner, 2009; Timmermans & Berg, 2003). These studies point to the need for empirical examinations of users' engagement with health technologies "in the context of their situated use", in order to understand what these technologies actually bring to those who use them (Lehoux et al., 2004, p. 641; also Heath, Luff, & Svensson, 2003). This type of analysis involves looking at how technologies, users, and their personal contexts all contribute to shaping the opportunities and limitations for care or self-care that users find in health technologies (Allen, 2012; Lehoux et al., 2004; Livingstone, 2008). Real-life usage studies show that when we look at how health technologies are used by people in their everyday lives we understand more about their care needs and the challenges they experience when using these technologies to support their health. Including knowledge from and about real-life users of online mental health tools will be essential to develop online tools and services that are effective in meeting the care needs of their users.

3.6 Response to gaps in the literature: Research aims and objectives

To summarize, currently little is known about how individuals actually utilise online mental health tools in the context of the everyday self-management of their mental health problems. Moreover, with respect to the technology that underlies online mental health

tools, an understanding of the role of technology in the treatment experience has so far been limited by a view of the relationship between technology and user as a unidirectional process (individual uses technology produces effects). Following from these premises, it is the view of this researcher that knowledge about online mental health tools would benefit from two additions: understand how online mental health tools are used by people with mental health problems in their everyday lives rather than in a research setting; and explore the role played by technology in this experience, with a view to contextualising technology's role in relation to the personal context or circumstances within which an individual takes up an online mental health tool and uses it.

This is an exploratory study aiming to generate information about the underresearched topic of how people with mental health problems use online mental health tools in their everyday lives, with attention also given to the role played in this by the technology associated with these tools. The study focuses on adults with mental health problems who live in the Republic of Ireland and who have used online mental health tools for mental health support. Because people's real life is a core focus on this study, the focus is not restricted to any one particular type of online mental health tool, rather the study takes an interest in finding out from people what online mental health tools they used.

The study has two overarching research aims:

- 1) Explore how online mental health tools are utilised by adults living in the Republic of Ireland to get support for a mental health problem
- 2) Explore the place of technology (Internet and computer devices) in the experience of utilising an online mental health tool to get support for a mental health problem

These research aims are broken down into five objectives:

- (a) Explore the demographic characteristics of adults living in the Republic of Ireland who have experience as users of online mental health tools
- (b) Explore their patterns and modes of usage of online mental health tools

- (c) Explore the role of technology in how individuals utilise online mental health tools
- (d) Explore the interrelation between the technology and the individual's personal context, i.e. the context within which the online mental health tool is utilised
- (e) Explore the experience of using technology to get support for a mental health problem

3.7 Conclusion

Addressing the limits of the dominant in-person model of mental health service delivery has become increasingly urgent under the pressure of growing numbers of people experiencing mental health problems and seeking help from services. It is in this context that governments and healthcare providers have been looking with great interest at the use of online technologies in the hope of helping to improve the availability and accessibility of psychological interventions. In reviewing the literature on digital mental health interventions, this chapter has highlighted that the dominant interests that have driven the development of these interventions have overlooked equally important aspects of this expanding field, namely the experiences of real-world end users and how the use of online mental health tools to help with a mental health problem plays out within individuals' personal circumstances. In an effort to address the scarcity of research on these issues, the present study has carried out an exploration of real-life use of online mental health tools by people with a mental health problem and the role of technology in this experience.

CHAPTER 4 – METHODOLOGY

4.1 Introduction

This chapter commences by introducing mixed methods research and argues for the appropriateness of a pragmatically based mixed methods methodology to address the study's aims and objectives. Next the two-phase mixed methods design applied in the study is presented. The target population and eligibility criteria are then discussed, and the sampling and recruitment strategy are outlined. Subsequently, the two stages of data collection and analysis are described. Finally, ethical appraisal of the research is provided.

4.2 Mixed methods research

This section presents the rationale for choosing a mixed methods methodology and adopting the paradigm of pragmatism.

4.2.1 Mixed methods as methodology

Mixing methods has been discussed and pursued since the 1950s, but it was in the late 1980s / early 1990s that mixed methods began to develop into a formal approach to research, at the height of a long-standing debate among scholars about whether qualitative and quantitative methods can be combined (known as the paradigm debate or wars) (Johnson et al., 2007; Onwuegbuzie & Leech, 2005; Teddlie & Tashakkori, 2009). Scholars on one side of the debate supported the “incompatibility thesis” (Howe, 1988), the view that quantitative and qualitative research are incompatible due to the differences between their philosophical foundations (or paradigms). As a result of this, they also believed that the methods of data collection and analysis typically associated with each research

approach could not be mixed. This view presupposes that research methods are intrinsically linked to given research paradigms (Teddlie & Tashakkori, 2009). On the other side of the debate, mixed methodologists rejected this position and embraced the “compatibility thesis” (Howe, 1988), which posits that the link between paradigms and methods “is neither sacrosanct nor necessary” (Johnson & Onwuegbuzie, 2004, p. 15). Since then, the practice of mixing methods has established itself as a distinct research orientation, developing its own definitions, rationales, procedures, and philosophical foundations (Creswell & Plano Clark, 2018; Tashakkori & Teddlie, 2003, p. x).

The development of mixed methods as a field is reflected in the evolution of its definition (Creswell & Plano Clark, 2018). Over the years mixed methods research has been defined from a variety of perspectives, with definitions often incorporating two or more of these, in particular a methods perspective, a methodological perspective, a philosophical perspective, or perspectives that emphasise the rationale for using mixed methods or the idea of mixed methods as a research community (Creswell & Plano Clark, 2018; Plano Clark & Ivankova, 2016). In this study, mixed methods research is the methodology that underpins the entire research process. Within a methodology perspective, “discussions of mixed methods should focus on the entire process of research, from the philosophical assumptions, through the questions, data collection, data analysis, and on to the interpretation of findings” (Creswell & Tashakkori, 2007, p. 304; Johnson et al., 2007). Clear connections are drawn between these components, aligning methods with the aims and objectives of the research and the views and assumptions that frame these and the whole research process (Creswell & Tashakkori, 2007; Hesse-Biber, 2010).

According to Teddlie and Tashakkori (2003) the research process can be broken down into three general stages: conceptualisation (research aims and objectives, research design), methods (sampling, data collection, data analysis, integration), and inference (interpretation of results). Firstly, at the conceptualisation level, the present study is guided by overarching research aims and objectives that are informed by both a quantitative component and a qualitative component, and are operationalised into a research design

involving a quantitative phase and a qualitative phase implemented separately but conceptually linked by the complementarity of their purposes. Second, at the methods level, quantitative and qualitative data are generated around similar topic areas, and analysed separately; their results are then integrated to enable more comprehensive interpretations. Lastly, at the inference level, the results of the integration are interpreted to consider how they answer the research aims and objectives. Thus, in this study the mixing of qualitative and quantitative components occurs across all three main stages of the research process. For this reason, this research study best fits with a view of mixed methods research as methodology. The following definition of mixed methods research by Creswell and Plano Clark (2018, p. 5) pinpoints the core components of a mixed methods methodology and is the definition used in this study:

In mixed methods, the researcher

- collects and analyzes both qualitative and quantitative data rigorously in response to research questions and hypotheses,
- integrates (or mixes or combines) the two forms of data and their results,
- organizes these procedures into specific research designs that provide the logic and procedures for conducting the study, and
- frames these procedures within theory and philosophy.

4.2.2 Rationale for choosing a mixed methods methodology

The overall purpose of the study is exploratory, aiming to generate ideas, information and insights (Denscombe, 2010; Newman et al., 2003) about the under-studied topic of in-the-wild usage of online mental health tools by people with mental health problems.

The study has two overarching research aims:

- (1) Explore how online mental health tools are utilised by adults living in the Republic of Ireland to get support for a mental health problem
- (2) Explore the place of technology (Internet and computer devices) in the experience of utilising an online mental health tool to get support for a mental health problem

These research aims are broken down into five research objectives:

- (a) Explore the demographic characteristics of adults living in the Republic of Ireland who have experience as users of online mental health tools
- (b) Explore their patterns and modes of usage of online mental health tools
- (c) Explore the role of technology in how individuals utilise such tools
- (d) Explore the interrelation between the technology and the individual's personal context, i.e. the context within which the online mental health tool is utilised
- (e) Explore the experience of using technology to get support for a mental health problem

In the present study, a mixed methods methodology was deemed to be best suited because the research problem is viewed as multi-faceted, creating a need for both “qualitative understanding” and “quantitative understanding” (Creswell & Plano Clark, 2018; Curry & Nunez-Smith, 2015). First, the researcher wanted to gain an understanding of real-life usage of online mental health tools at the level of broad, collective patterns (e.g. who are the users of online mental health tools, what do they use, when and what for, what computer devices they use to do so) and the possible associations between some of these. Second, a different angle was needed alongside this as the researcher also wished to hear from people themselves how they used online mental health tools as part of their everyday lives, their own perspectives and experiences, creating the need to collect information at the level of individual experiences. Given the need to investigate the research problem from both angles, a mixed methods approach was chosen as mixed methods provide a formal set of procedures for collecting, analyzing, and integrating data in studies where

there is a need for both quantitative and qualitative perspectives and methods (Plano Clark & Ivankova, 2016). The purpose of approaching the research problem from both a quantitative and qualitative perspective was to enhance the exploratory reach of the research by complementing quantitatively generated “breadth of information” (collective patterns of usage) with qualitatively generated “depth of information” (personal experiences) (Mayoh et al., 2012) and thereby achieve a deeper, more meaningful understanding of the research problem than allowed by either perspective or method alone (Creswell & Plano Clark, 2018; Johnson et al., 2007; Mayoh et al., 2012; Teddlie & Tashakkori, 2009; Tobin & Begley, 2004). Combining quantitative and qualitative perspectives and methods in this way within an exploratory study helps uncover different facets of a phenomenon, some of which would be missed if using a purely quantitative or qualitative approach (Mayoh et al., 2012). The result is an enriched, “multidimensional understanding” of the phenomenon under study and its complexity (Mayoh et al., 2012, p. 24; Mason, 2006).

To accomplish this, two separate data sets were used, one quantitative for the purpose of breadth of information, the other qualitative for the purpose of depth of information. Research objectives (b) to (e) were addressed through both types of data, which covered similar topic areas for the purpose of comparison and thereby help produce more comprehensive interpretations of the research results, to be achieved via the integration of the quantitative and qualitative results (Creswell & Plano Clark, 2018). Integration is explained later in the chapter at section 4.3. Table 1 below offers an overview of the types of data that were used to address the five research objectives and, through these, the overarching research aims.

Table 1 - Types of data used to address the research aims and objectives

Research aims	Research objectives	Type of data
(1) Explore how online mental health tools are used by adults living in the Republic of Ireland to get support for a mental health problem (2) Explore the place of technology (Internet and computer devices) in the experience of using an online mental health tool to get support for a mental health problem	(a) Explore demographics of adults who have used online mental health tools	Quantitative data
	(b) Explore patterns and modes of use of online mental health tools	Quantitative and qualitative data
	(c) Explore the role of technology in how people use online mental health tools	Quantitative and qualitative data
	(d) Explore the interrelations between the technology and the individual's personal context	Quantitative and qualitative data
	(e) Explore the experience of using technology to get support for a mental health problem	Quantitative and qualitative data

Based on Thomas & Hodges (2010, pp. 43–44).

4.2.3 Research paradigm

As previously discussed, this study aligns with a view of mixed methods as methodology, which maintains the importance of paradigms or philosophical assumptions in research. Paradigms are an important component of the research process because they guide how we look at things (Greene, 2006). Guba (1990, pp. 17–18) maintains that a paradigm is “a basic set of beliefs that guides action” and research paradigms are “*those paradigms that guide disciplined inquiry*” (original emphasis). Another important role of a research paradigm is to offer appropriate philosophical and theoretical justification for looking at the world in a particular way (ontology) and generating knowledge about it (epistemology) (Greene, 2006). The paradigm of pragmatism provides the conceptual justification for the use of mixed methods in the present study. This section discusses the choice of pragmatism as an appropriate paradigm for this study.

This research study involves a combination of qualitative and quantitative components within all three main stages of the research (conceptualisation, methods, and inference – see section 4.2.1). Additionally, the purpose of mixing methods in this study is to produce more comprehensive interpretations. Pragmatism is the appropriate paradigm for this study because it offers “a method and philosophy that attempt to fit together the insights provided by qualitative and quantitative research into a workable solution” (Johnson & Onwuegbuzie, 2004, p. 16). Pragmatism has played an important role in the development of mixed methods as a formal approach to inquiry. During the paradigm wars, framing mixed methods within pragmatism helped see mixed methods as “a movement that move(d) past the paradigm wars by offering a logical and practical alternative” (Johnson & Onwuegbuzie, 2004, p. 17). Pragmatism inserted itself in the constructivism versus positivism / postpositivism debate by rejecting its forced either / or choices with regards to methods and epistemology, and endorsing pluralism of worldview assumptions and research methods (Creswell, 2014; Johnson & Onwuegbuzie, 2004; Teddlie & Tashakkori, 2009). In light of this flexibility and pluralism, pragmatism helps justify the choice of mixed methods research in the present study.

The debate over whether quantitative and qualitative methods can be mixed is a debate about the relationship between epistemology and methods. According to Onwuegbuzie and Leech (2005), purists, situationalists, and pragmatists represent the three main schools of thought around this issue. For purists, quantitative and qualitative methods originate from radically different philosophical assumptions and cannot, therefore, be combined. Additionally, purists on each side view their worldview and associated methods as superior in understanding the world to those of the purists on the opposite side. Situationalists believe instead that both quantitative and qualitative methods are useful, but still view them as belonging with separate epistemological orientations. By contrast, pragmatists reject a one-to-one correspondence between epistemology and methodology / methods and believe that the choice of methodology and methods should be driven by practical, outcome-oriented considerations, in particular the research question and the desired consequences or goals of the research (Johnson & Onwuegbuzie, 2004; Onwuegbuzie & Leech, 2005; Sandelowski, 2000; Teddlie & Tashakkori, 2009). This provides researchers with the flexibility to choose the method or mix of methods that they believe will best meet the needs, purposes, and circumstances of their research studies (Creswell, 2014; Creswell & Plano Clark, 2018; Mason, 2006).

Pragmatism endorses that different perspectives and methods are valuable and needed in understanding reality (Johnson & Onwuegbuzie, 2004). Pragmatism doesn't view the nature of reality as being only one way as in the philosophies of positivism / postpositivism and constructivism, nor does it commit to or offer any one theory of reality (Creswell & Plano Clark, 2018; Johnson & Onwuegbuzie, 2004; Teddlie & Tashakkori, 2009). In mixed methods, this manifests as researchers drawing freely from both positivist / postpositivist and constructivist assumptions (Creswell, 2014).

Quantitative and qualitative purists and the incompatibility thesis have been criticised by mixed methodologists for focusing on the differences between positivism / postpositivism and constructivism and overlooking aspects that make such dichotomies difficult to uphold (Onwuegbuzie & Leech, 2005; Teddlie & Tashakkori,

2009). Teddlie and Tashakkori (2009, p. 103) argue for a more nuanced, pragmatically-oriented understanding of research approaches where quantitative, qualitative, and mixed methods research are conceived as “positions along a continuum (the QUAL-MM-QUAN continuum)”. This view emphasises the difficulty, if not the impossibility, for research to ever be unambiguously qualitative or quantitative (Teddlie and Tashakkori, 2009). For instance, all data (words or numbers) are ultimately “an attempt to capture a raw experience” and could in this sense be considered as “basically qualitative”; likewise, all data can at least be “binarized”, i.e. reduced to a variable expressed in binary form (1 vs 0) (Onwuegbuzie & Leech, 2005, p. 381). According to Teddlie and Tashakkori (2009, p. 73) pragmatism supports a dialectical way of thinking about the relationship between quantitative and qualitative research that is particularly useful to the project of mixed methods research in that it “always takes QUAL [qualitative research] and QUAN [quantitative research] seriously but then develops a synthesis for each study”.

This study is interested in the lived experience of people who use online mental health tools for mental health support, and the role played by technology in this as experienced by people who use such tools. The phenomenon under study is conceptualised as multi-faceted and made up of both aspects that are best illuminated using a qualitative lens and aspects that are best illuminated using a quantitative lens. According to Mason (2006, p. 11) lived experience is multi-dimensional and we need research approaches that “open our perspective” to this multi-dimensionality in order to better understand it. Pragmatism rejects a unified view of reality and embraces plurality of method, and is therefore an advantageous choice for the present study.

4.3 Research design

When developing a mixed methods research strategy, important issues to consider include the level of interaction between the quantitative and qualitative components (whether they are implemented independently or intentionally connected throughout the study), their timing (when the quantitative and qualitative components are

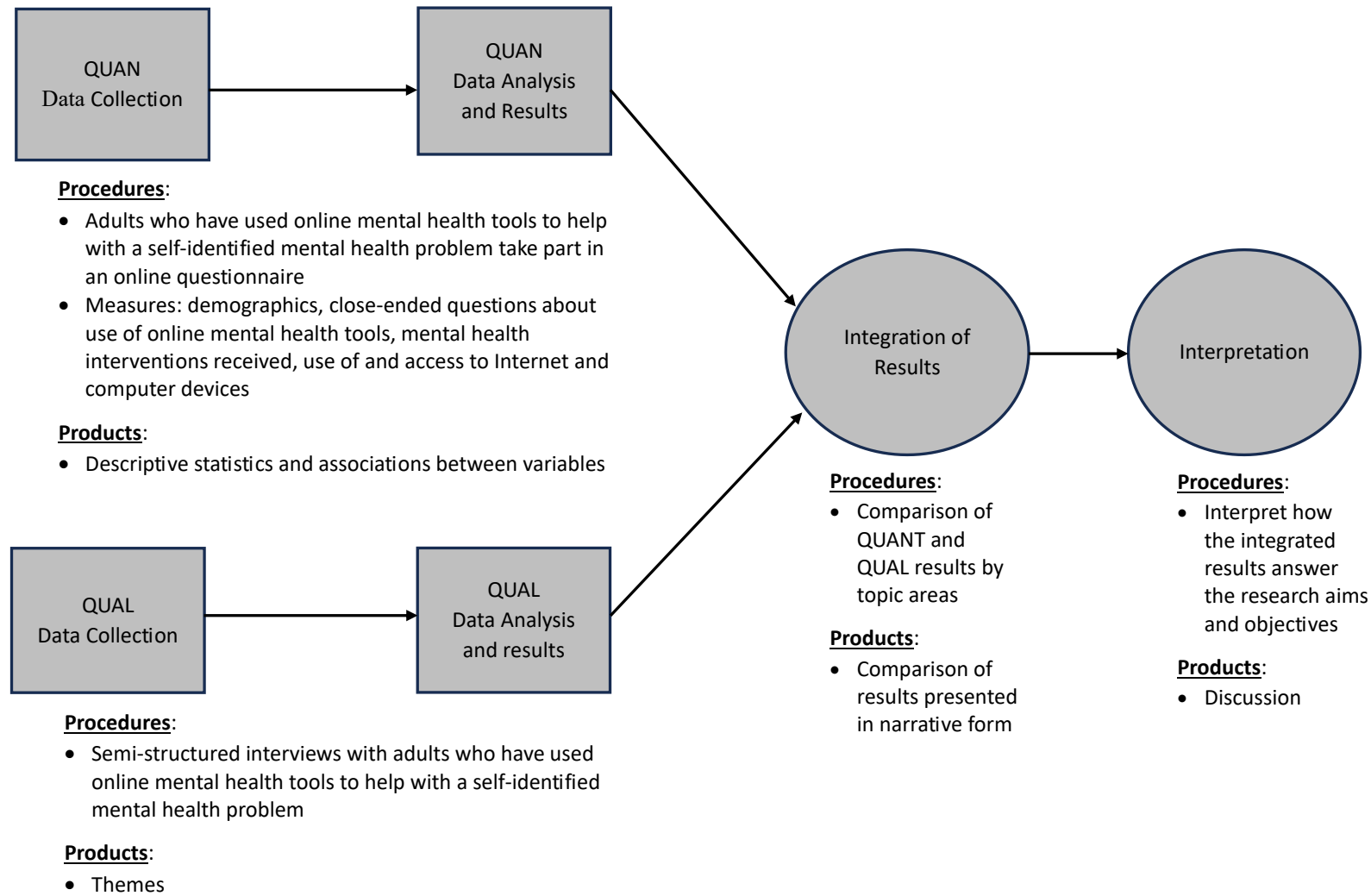
implemented relative to each other, i.e. concurrently or sequentially), and their relative priority (the weight or importance each component has in answering a study's research questions) (Creswell & Plano Clark, 2018; Green, 2007). The present study involved two separate phases of data collection and analysis, one quantitative and one qualitative, that had different but complementary intents, guided by common research aims and objectives (Bazeley, 2009). The intent of Phase 1 was to generate breadth of information about the phenomenon under study. It employed an online questionnaire to allow information about a large number of users of online mental health tools to be collected in quantitative form, for the purpose of identifying patterns and trends about users and uses of online mental health tools for mental health support. In a complementary fashion, Phase 2 aimed to generate depth of information and it involved in-depth interviews with users of online mental health tools for the purpose of exploring in greater depth their use of such tools for mental health support within their daily lives. As both phases answered to the same research aims and objectives, they addressed similar aspects of the research problem in order to facilitate comparison of the quantitative and qualitative results. The specific methods of data collection and analysis employed in each phase are explained at sections 4.6 and 4.7 of this chapter. Regarding the relative priority of the two phases, there was an equal need for depth and breadth of information, thus the two phases were assigned equal importance in generating the data needed to address the research aims and objectives. Concerning their level of interaction and timing, one phase was not needed to develop or inform the other, therefore the two phases were carried out independently (i.e. with no interaction between them) and at relatively the same time. Integration occurred at the interpretation or inferential stage by merging the independently obtained quantitative and qualitative results to produce the overall interpretations (inferences) of the study (Moran-Ellis et al., 2006; O'Cathain et al., 2010; Teddlie & Tashakkori, 2009). This mixed methods design is known as concurrent, parallel, or convergent. It is a strategy in which the researcher collects and analyses the quantitative and qualitative data separately for the purpose of combining or comparing the two sets of results and thereby produce richer, more complete interpretations of the research problem (Creswell & Plano Clark, 2018; O'Cathain et al., 2010).

Crucial to achieving this is the integration process. Integration is a defining and critical feature of mixed methods as a distinct approach to research (Creswell and Plano Clark, 2018). It refers to the intentional mixing of the quantitative and qualitative components of a mixed methods study. O’Cathain et al. (2010, p. 1147) describe it as “the interaction or conversation” between them. The researcher interrogates the quantitative and qualitative data or results and considers how they relate to one another, bringing the knowledge generated from each data together to produce additional knowledge that incorporates both (O’Cathain et al., 2007, 2010). Integration yields knowledge beyond that generated from the separate quantitative and qualitative analyses and results, distinguishing mixed methods research from research where both quantitative and qualitative data are collected and analysed but not brought together and explicitly combined (Bazeley & Kemp, 2012; Creswell & Plano Clark, 2018; Teddlie & Tashakkori, 2009).

In the present study, integration represented an additional layer of analysis as it involved jointly analysing the quantitative and qualitative results, generating integration results. The integration procedure consisted of comparing the two sets of results by concept and is explained at the start of Chapter 7 (Integration chapter). The integration results were then interpreted to consider how they answered the research aims and objectives (Creswell & Plano Clark, 2018).

The diagram in Figure 3 shows the research design and its components, adapted from Creswell and Plano Clark’s (2018, p. 76) visual model for mixed methods concurrent designs.

Figure 3 - Study's research design



4.4 Eligibility criteria

The target population consisted of adults in Ireland with a self-identified mental health problem who used online mental health tools to help with their mental health. Individuals were eligible to participate if they met the following criteria:

- a) be aged 18 or older
- b) be currently living in the Republic of Ireland
- c) identify themselves as having or having had a mental health problem (a clinical diagnosis is not necessary)
- d) have used an online mental health tool to get support for a mental health problem
- e) be comfortable with using the English language.

The decision to let people define their mental health problem and the definition of online mental health tools used in this study were discussed in detail in sections 1.5 and 1.6, respectively, and won't be repeated here.

4.5 Sampling and recruitment

This section describes the procedures employed to obtain the samples for the study, namely the sampling strategy and the recruitment process.

4.5.1 Sampling strategy

Purposive sampling was employed to connect with the target population and recruit both questionnaire and interview participants. When sampling purposively, people or events “are selected with a specific purpose in mind, and that purpose reflects the particular qualities of the people or events chosen and their relevance to the topic of the

investigation” (Denscombe, 2010, p. 35). The particular qualities of the people or events that are the subject of the investigation make it difficult for these to be adequately obtained through other methods such as random sampling (Liamputtong, 2019). The target population of the present study, explained in section 4.4, required finding individuals with particular characteristics, namely individuals with a self-identified mental health problem who had used online resources to help with it. This made it unsuitable to randomly select participants from available lists such as users signed up to a particular online mental health tool or a list of users of mental health services, as neither guarantee that the selected individuals have all of the required characteristics (Liamputtong, 2019). Thus purposive sampling was used. This also involved the researcher using her judgement as to what were the places where individuals with those characteristics were more likely to be found (MacGabhann et al., 2010). Moreover, because purposive sampling aims to generate a sample formed of cases from which a lot can be learned about the phenomenon under study (Patton, 2002), it is a useful strategy when the phenomenon under study is “new territory” and the goal of the research is to explore it and offer pointers for future research (Patton, 2002, p. 46), such as was the purpose of the present study.

4.5.2 Size of the sample

Given that the quantitative and qualitative data were collected for different purposes, it was deemed acceptable for the two samples to have a different size (Creswell & Plano Clark, 2018). This supported the appropriate application of the methods employed in each phase (*ibid.*), namely the use of a quantitative questionnaire with a large sample for the purpose of illuminating the “generality of a given phenomenon or feature, [...] how typical or widespread it is, how much of it there is” (Williams & Chesterman, 2002, p. 64) and the use of semi-structured interviews with a few people to develop an in-depth understanding of the phenomenon. Creswell and Plano Clark (2018) caution that the use of differently sized samples within a mixed methods concurrent design may limit the integration process,

but maintain that this problem is minimised when the intent is to combine the two sets of results by topic, as in the present study.

4.5.3 Recruitment strategy

Developing a recruitment strategy involves making decisions about how prospective participants will be contacted and invited to take part in the study. Given that the participants needed for this study were Internet users, recruitment mostly (but not exclusively) took place online. A study website was also created as a first point of information for prospective participants.

4.5.3.1 Study website

A purpose-built website was created as a visibility strategy. It was reasoned that potential participants might prefer to visit the website for quick, convenient, and anonymous access to information about the study and participation rather than emailing the researcher. The website was designed using WordPress (www.wordpress.com). A WordPress Personal Plan subscription was purchased (at 48,00 Euro a year) in order to keep the website free from ads and customize its domain (<http://omhshp-research-study.com>). The website design was kept minimal. A logo was created to add a visually distinctive element and a headshot picture of the researcher was added to the homepage. The website included five pages: the homepage, providing an overview of the research study and participation; a page with details of the research background and aims; a page explaining what counted as an online mental health tool for the purpose of participating in the study; Information Sheet for participating in the online questionnaire; Information Sheet for participating in the interview; and contact details of the researcher. A screenshot of the website homepage can be viewed in Appendix B.

4.5.3.2 Online questionnaire participant recruitment

Chronologically, recruitment commenced with the online questionnaire. The recruitment approach for the online questionnaire involved advertising the study widely across the Republic of Ireland, using multiple online channels alongside some offline ones, in order to maximise the number of individuals with the relevant characteristics knowing about the study and participating in the online questionnaire. A sample size for the online questionnaire could not be pre-determined given that the researcher was sampling from the general population. However, it was planned to end the recruitment / data collection process after 12 weeks. This choice was based on precedents of online surveys that successfully recruited 'hard to reach' groups from the general population by using the same sampling and recruitment approach within a similar timeframe (Higgins et al., 2011; Lakeman et al., 2012; Mayock et al., 2009). The researcher was looking to replicate a working model based on a timeframe approach to recruitment / data collection rather than a sample size approach. Due to initial slow uptake of the questionnaire, recruitment was extended beyond the original timeframe and relaunched by targeting places and networks where people with mental health problems who use the Internet for mental health support may be more easily found, such as mental health organisations with a visible online presence and following and mental health online groups.

The online questionnaire was open for 15 months (May 2018 to August 2019). Three main rounds of recruitment were conducted within this time (May – June 2018, August – October 2018, January – April 2019). The study advert invited interested individuals to find out more about the study and how to participate. One or two individuals did so by first contacting the researcher, whose email address was provided on the study advert. These individuals were emailed the Questionnaire Information Sheet and the link to the study website where they could access the questionnaire. All other participants directly continued on to the website and questionnaire from the study advert. Once on the website, they were invited

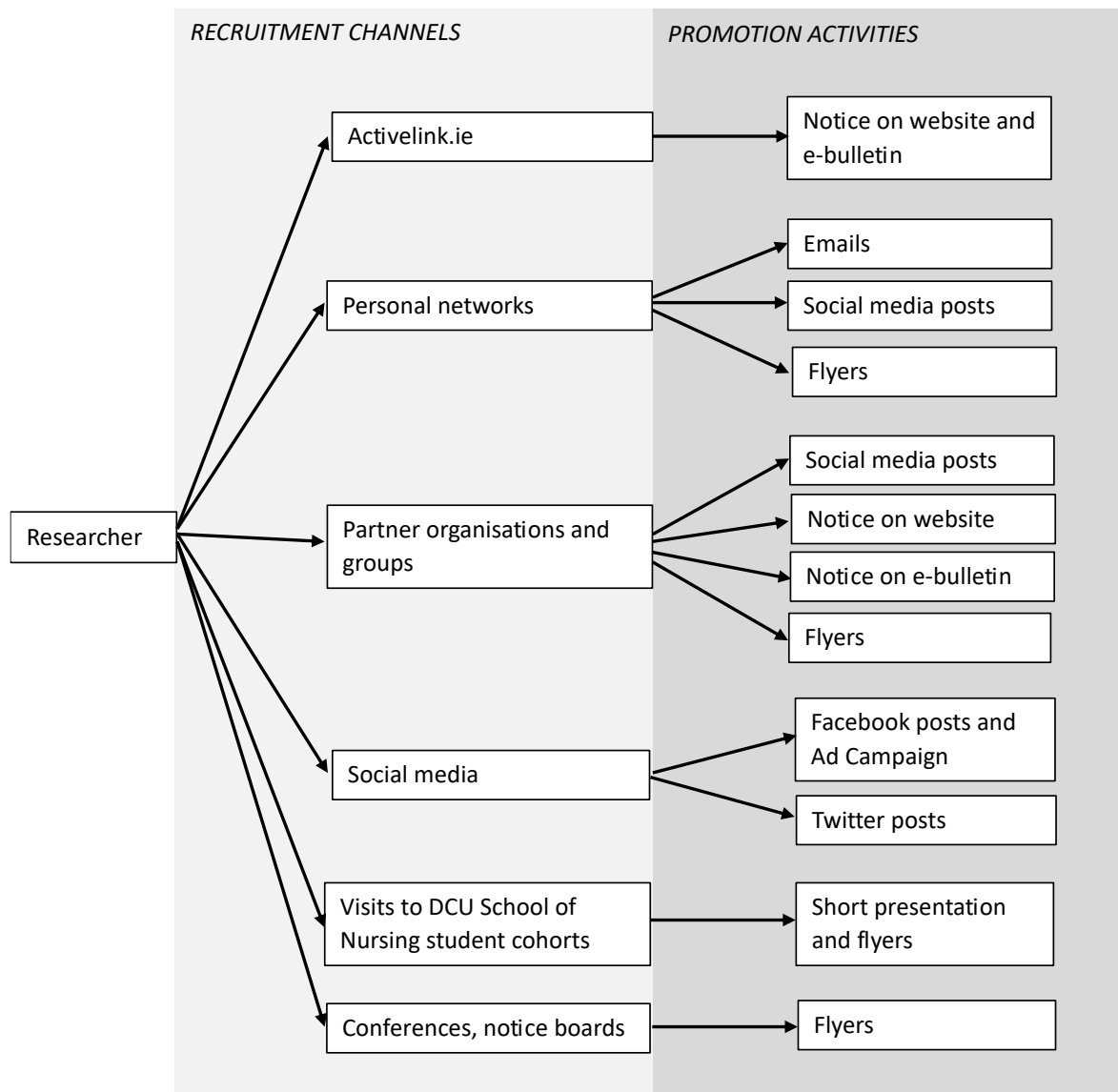
to carefully read the Information Sheet and contact the researcher with any concerns or questions they might have before proceeding to the questionnaire.

The channels used to disseminate the questionnaire recruitment notice are described next. Their effectiveness in recruiting participants is discussed at the start of Chapter 5 (quantitative results chapter).

4.5.3.2.1 Recruitment channels

The main channels for recruiting questionnaire participants included the Activelink website, the social media Twitter and Facebook, select organisations and social media groups and pages, personal networks, and other activities such as visits to student cohorts in the DCU School of Nursing and conferences. Research flyers were created and both digital and print copies were distributed via these recruitment channels. Figure 4 below provides an overview of the recruitment channels and related activities that were undertaken to disseminate the recruitment notice.

Figure 4 - Diagram of recruitment channels



Based on Bender et al. (2017)

Research flyers

A research flyer was created digitally, first using PowerPoint and subsequently Canva, a graphic-design tool available online (www.canva.com). The flyer included an invitation to participate, the research logo, a QR code that people could scan from their mobile device

to access the research website, and the researcher contact details. An iteration of the flyer can be viewed in Appendix C.

Activelink website

Activelink (<https://www.activelink.ie/>) is an online network for the community, voluntary, non-profit and related sectors in Ireland. It provides organisations and individuals in those sectors and those interested in them with a platform to publicly share and find news and information about the Irish non-profit sector. The study advert was published on the Activelink website six times over 10 non-consecutive months and concomitantly appeared in the Activelink e-bulletin which is sent out to subscribers every month.

Organisations and social media groups / pages

A number of Irish-based mental health and non-mental health non-statutory organisations and social media groups and pages were contacted via email, Facebook or Twitter between August – December 2018 and January – April 2019. They were asked for their support with disseminating the recruitment notice across their social media pages, mailing lists, or any other way it was appropriate for them to use. Non-statutory mental health and youth organisations were selected based on their national visibility, reputation, and wide online presence (e.g. Aware). Mental health and wellbeing groups on Facebook were selected if they were currently active and had a basis in Ireland. Academic departments and the student counselling services of third level institutions were also contacted. A total of 148 organisations and online groups were contacted, of which 34 agreed to share a recruitment notice via their social media pages, websites, mailing lists, or print flyers. The search strategy for the Facebook groups and pages, and the full list of the organisations and Facebook groups that were contacted, are provided in Appendix D.

Twitter

After signing up to the social media platform Twitter (<https://twitter.com/>) (now known as X) and creating a profile page for my researcher persona, the researcher 'tweeted' (posted) about the study. The post was initially retweeted (shared) by the researcher's supervisors, friends, and colleagues among her Twitter connections, attracting a number of other Twitter users from their own networks who in turn retweeted the post.

One of the challenges when recruiting through social media is to keep the momentum up. A post on Twitter can gain momentum quickly as Twitter contacts retweet, but it can also get off Twitter's radar as quickly if it is not kept going.

The following strategies were employed to give visibility to the recruitment post on Twitter:

- Inclusion of a visual element such as the digital version of the research flyer or imaged stock pictures related to the research topic.
- *Pinned post*. This allows to 'pin' a post to the top of one's profile page, making it the first post people see when they visit the page. The researcher pinned the study advert to her profile page, making it the first post visitors would see on her page.
- *Hashtags*. Hastagging content on social media platforms consists of the # symbol followed by a keyword, for example #depression. Hashtags are used to categorize posts on social media. Users can add hashtags to their posts to make them easier to be found by others. Hashtags can also be entered in the search box of a social media page to search for posts tagged with that hashtag.

The following hashtags were used to tag the recruitment posts: #Ireland #mentalhealth #eMentalHealth #mHealth #ehealth #research #WorldMentalHealthDay (on World Mental Health Day 2018) #FridayFeeling (on Friday 04/01/2019; this hashtag was in the first 10 Ireland trends on Twitter).

- *Mentions.* When posting on Twitter it is possible to mention a Twitter user by typing the @ symbol followed by their handle (i.e. their username; e.g. @OmshpStudy). The researcher used mentions in her recruitment tweets to target specific individuals and ask them to retweet the study advert. These mentions included mental health organisations, mental health professionals and other individuals with an active interest in the mental health field, preferably with a large following on Twitter.

Screenshots of Twitter posts can be seen in Appendix D.

Facebook

To advertise the study on the social media platform Facebook (<https://www.facebook.com/>), the researcher signed up to Facebook and set up an account for her researcher persona. The account was public (i.e. visible to anyone). Next, connections with other Facebook users were created to create a network of contacts to use as a base to disseminate the research advert and invite others to share to their own connections. Using the research flyer or other relevant pictures as images, the researcher posted about the study, also including hashtags such as #Ireland and #mentalhealth in the post.

The researcher also set up a Facebook Ad Campaign. First a Page for the research study had to be created (linked to the researcher's Facebook account). Next, a Facebook Ad Campaign was created using the Create Ads tab. When setting up a Facebook Ad Campaign, a number of options are available to customise the Ad Campaign to the desired audience, placement (where one wants the Ad to show), and allocated budget. The researcher chose the Ad to appear on the Facebook Feeds of anyone aged 18 to 65+ years and living in Ireland (other available parameters to help refine one's target audience were not relevant to the target audience). An initial daily budget of 4 euro was allocated to the Ad Campaign, which Facebook estimated would allow the Ad to reach between 1,300-4,100 Facebook users

daily. The budget was later increased to 6 euro a day to boost the Ad reach. The Ad included an image and text.

The Facebook Ad Campaign ran for 11 days in September 2018 (19th – 29th September). Five and a half days into the Campaign, the Ad had resulted in no new complete questionnaire responses. Based on available performance data for the Ad, it was decided to redesign the Ad and launch it again. The designed Ad run for five and a half more days. The Ad Campaign resulted in a total of 66,609 Impressions with a reach of 54,751 people (number of people on whose feeds the Ad appeared). The Ad had been clicked on a total of 69 times (number of clicks on the link in the Ad that led to the study website), with few people continuing to the questionnaire and none completing it. Given the lack of results, the decision was made to stop the Ad Campaign. The total spend was 73,80 euro. Images of the Ad and additional information about the performance of the Ad Campaign are provided in Appendix D.

Visits to DCU classes

In October and November 2018 the researcher tried to boost recruitment by visiting 6 Undergraduate and 4 Postgraduate classes in mental health and psychotherapy courses in the DCU School of Nursing and Human Sciences, with permission from the Programme Chairs and Modules Coordinators. During each visit, which lasted between 5-10 minutes, the researcher introduced the study to the students and distributed flyers of the online survey.

Other recruitment activities

Additional recruitment activities involved the following:

- Once-off publication of the recruitment notice on the e-bulletin of the Association of Internet Researchers
- Dissemination of the recruitment notice through personal networks, e.g. friends, supervisors, and colleagues who then shared the recruitment notice within their own personal and work networks as they deemed appropriate
- Dissemination of print research flyers at the following locations and events:
 - IIMHN / Commune Conference 2018 (17-18 May 2018, Dublin City University)
 - Annual general meeting of the Community Mental Health Nurses Association (20-21 October 2018)
 - SNHS Research Expo (5 December 2018, School of Nursing and Human Sciences, Dublin City University)
 - Notice boards on the DCU Glasnevin Campus (Faculty buildings and Student Union building), main entrances of Trinity College Dublin campus, National College of Art and Design, and Dublin City Central Library

4.5.3.3 Interview participant recruitment

The purpose of Phase 2 was to generate rich, in-depth information about the use of online mental health tools at the level of individuals' everyday uses and experiences, the role of technology in how people use such tools, and how this interrelates with the individual's personal, everyday context within which an online mental health tool is engaged with. Based on precedents of qualitative studies exploring the intersections between technology use and context (Allen, 2012; Lehoux et al., 2004; Livingstone, 2008; May et al., 2001), it was initially deemed that a sample of 15 participants would allow for ample in-depth exploration of these issues. A challenge to reaching this number came up as recruitment

proved particularly lengthy. Following this, a judgement call was made to end data collection after 10 interviews, taking into account that the original target number was based on purely qualitative research studies while the present study was mixed methods (i.e. it relied on quantitative and qualitative data rather than a single type of data). This decision was supported by the quality of the 10 interviews which were deemed to be of sufficient length and richness to allow for in-depth qualitative analysis of the research problem.

The difficulties in recruiting interview participants also led to changes in the recruitment strategy. All interview participants were originally to be recruited from those who had taken part in the online questionnaire. People interested in participating in the questionnaire were informed on the study website of the possibility of also taking part in the interview after they completed the questionnaire. A reminder was included at the end of the questionnaire. People who contacted the researcher expressing their interest in participating in the interview were sent the Information Sheet and invited to read it carefully. If they confirmed that they wished to continue and do the interview, arrangements were made to schedule a date and time for it. Seven interviewees were recruited through the questionnaire over a number of months. Given such slow uptake, a more direct method of recruitment for Phase 2 was implemented to boost recruitment, so that individuals not interested in participating in the online questionnaire but willing to talk to the researcher about their experience of using online mental health tools would be allowed to take part. An interview recruitment notice was published online on the Activelink website and newsletter and on Twitter. Additionally, print flyers (see Appendix C) were distributed to the Healthy Living Center (DCU), Recovery College (DCU), mental health undergraduate students at Dublin City University (with permission), affixed to notice boards at Dublin City University campus and Dublin City Central Library, and handed out at the Annual Critical Voices Conference 2019 (13-14 November, School of Applied Social Studies and School of Nursing and Midwifery, University College Cork). The re-recruitment of interviewees resulted in three additional interview participants, bringing the total

number of interviews to ten. The ten interviews were conducted between June 2018 and September 2020.

4.6 Phase 1: Online questionnaire

As the intent of Phase 1 was to generate breadth of information, a questionnaire was chosen to allow information about a large number of users of online mental health tools to be collected in quantitative form, with the intent of identifying patterns and trends about their use of online mental health tools for mental health support and the role of technology in this. The purpose of this phase was descriptive (describe patterns in the data) and exploratory (explore possible associations between variables) rather than to generalise from the research sample to the research population (Sandelowski, 2000). This section presents how the questionnaire was developed, its structure, and the methods used to analyse the data.

4.6.1 Questionnaire development

The purpose of the online questionnaire was to explore the demographic characteristics of adults who use online mental health tools for mental health support, selected characteristics of their use of such tools, what devices were used to access such tools, the time and location of access, what mental health interventions people had ever received, and aspects of daily Internet use in general and in relation to mental health problems.

Characteristics of users of online mental health tools and of their usage of such tools and the associated technology were explored along a number of aspects whose choice for inclusion in the questionnaire was influenced by the literature review and the researcher's judgement. The questions were either formulated by the researcher, sourced directly from existing resources, or adapted for the purpose of the study from said resources. These

resources included survey instruments and structured interviews from existing research. A complete list of these resources is provided in Appendix E. Additional online resources were consulted to source specific information to aid in the formulation of pre-planned responses (e.g. the estimated annual living wage, which was taken into account when designing a question about income).

The main question format used in the questionnaire is closed-ended, i.e. respondents chose their answers from a list of pre-planned response options. This allowed the researcher to collect data in a standardised format and explore if characteristics of interest to the research were or were not present in adults who use online mental health tools and their use of such tools. Care was taken to adapt the content and wording of the questions and pre-planned answers to the Irish context. For example, in the question asking about current occupation status, the option “Unable to access paid work because of asylum seeker status” was included to reflect the limitations to accessing paid work imposed on asylum seekers in Ireland. In some cases, a fill-in ‘Other – please specify’ option was also included, to allow respondents to answer a question in their own words if they felt that none of the pre-determined response options adequately described their personal experience or circumstances. Additionally, an open-ended question was placed at the end of the questionnaire and invited participants to make any additional comments they may have had about their use of online mental health tools and the Internet. The purpose of including this question was to give participants an opportunity to share information in their own words, if they so wished.

4.6.1.2 Expert review of questionnaire

Expert review of the questionnaire was sought from a panel of 6 experts in mental health disciplines and survey development based in the School of Nursing, Psychotherapy and Community Health in Dublin City University. The reviewers accessed the questionnaire online, filled in a template with their feedback, and returned it to the researcher. The template was created by the researcher.

The reviewers pre-tested the questionnaire for face validity and content validity. They offered their feedback about the clarity of questions and instructions, the relevance of questions and pre-planned responses, the completeness of the questionnaire, and its appropriateness to answer the aims of the research. They also gave feedback on the design and ease of use of the online questionnaire. Based on their recommendations, aspects of the questionnaire that were refined included question wording, question layout and format, question length, and consistency of scales.

4.6.1.3 Using Qualtrics to design the questionnaire

The survey was drafted in Office Word and designed for online administration using the online survey software Qualtrics (www.qualtrics.com). An institutional Qualtrics account was made available to the researcher by the DCU School of Nursing, Psychotherapy and Community Health.

Questionnaires created on Qualtrics are accessible from desktop / laptop devices as well as from mobile devices (tablets smartphones), whose screens are smaller. While setting up the questionnaire on Qualtrics, it was important to take into account how different question formats would display on different screens, especially those of smaller devices. For example, a question that uses a matrix format may allow for more than one piece of information to be gathered within the same question, helping to reduce the length of the survey. However, while this question format may display comfortably on the bigger screens of desktop and laptop computers, its readability and user-friendliness may be reduced when displaying on smaller touchscreen devices such as smartphones. In turn, this may result in more complex or lengthy interactions with the touchscreen. Taking this on board, while designing the questionnaire on Qualtrics the decision was made to simplify the original design of some questions. This sometimes resulted in a question being split into two questions. While this resulted in a slightly longer questionnaire, priority was given to ensuring that all questions displayed comfortably on Smartphone screens, hopefully

producing questions that were quicker and easier to answer on smaller touchscreen devices.

4.6.2 Questionnaire structure

On opening the online questionnaire, participants were provided with instructions on completing the questionnaire and asked to indicate their consent to participate. The questionnaire had a total of 58 questions organized into five broad thematic sections. Each section was introduced by a short description. The questionnaire is included in Appendix F. Table 2 below offers an overview of the five questionnaire sections and their content and rationale.

Table 2 - Overview of questionnaire content and rationales

Section	Content and rationale
Demographic questions	To offer a demographic profile of adults who live in Ireland and have used online mental health tools to help with a mental health problem
Online mental health tools used and characteristics of their use	To generate information about patterns and modes of use of online mental health tools, including aspects relating to technology (devices used to access online mental health tools; events potentially hindering people's access to computer devices, the Internet, and online mental health tools).
Mental health interventions received	To establish whether people had received any traditional mental health interventions beside seeking support from online mental health tools. To establish the timing of engaging in these two forms of support relative to each other.
Internet use in general and in relation to mental health	To generate information about the overall presence of the Internet in people's life and specifically as a source of information about mental health / mental health problems.
Closing section	To collect information on recruitment sources, what computer device the participants accessed the questionnaire from, and from what location. Space was also provided for participants to write any additional comments they wished to share about their use of online mental health tools and the Internet.

4.6.3 Data analysis

The quantitative data were analysed using descriptive and inferential statistics. Descriptive statistics are methods used to summarize quantitative data, discover patterns and relationships within the data, and communicate the results through easily interpretable tables, graphs, and summaries (Teddlie & Tashakkori, 2009). Inferential statistics are methods used to analyse numeric data for the purpose of making inferences from a sample to a population or testing hypotheses (*ibid.*). Descriptive statistics were used to summarise general trends. Inferential statistics were used to test relationships between select variables from the descriptive statistic results and thereby deepen the exploration of aspects of participants' use of online mental health tools. The descriptive and inferential statistic methods that were employed are detailed at the beginning of Chapter 5. The analyses were performed using the statistical data analysis package SPSS Version 25.

The questionnaire also yielded some qualitative data that mostly came from the open-ended question asked at the end of the questionnaire, with the addition of the comments written by a few participants at an earlier point in the questionnaire. The researcher had planned to carry out in-depth qualitative analysis of these data using thematic analysis (Braun & Clarke, 2006), but this was not possible due to their limited depth. Descriptive categories and subcategories were instead generated on the basis of the surface meaning of the data. They tied in with the quantitative results and made for interesting illustrative quotes, but had limited value in helping to explain or elaborate quantitative patterns of interest due to a lack of conceptual depth. Additionally, these categories and their subcategories all came up in greater depth in the analysis of the interview data. For these reasons, the decision was made to present them alongside the quantitative results and exclude them from any further use. Moreover, the anonymity of the questionnaire made it impossible to know if any of the comments from the questionnaire belonged to any of the interviewees who also took part in Phase 1 of the study. This made it inappropriate to use these data to further support the themes generated from the thematic analysis of the interviews.

4.7 Phase 2: Interviews

This section presents the methods of data collection and analysis applied in the Phase 2 of the study.

4.7.1 Semi-structured interviews

The qualitative phase of the study aimed to generate in-depth information and understanding about people's use of online mental health tools and the place of technology in this experience. A method that was open to the complexity and diversity of everyday life and personal experience was needed, therefore a qualitative method was chosen (Flick, 2009). As an open, qualitative method, individual in-depth interviewing was employed to explore the opportunities and limitations for mental health support that people experienced when using online mental health tools, the aspects of online mental health tools and the associated technology that contributed to this as experienced by the participants (Merolli et al., 2013), and the everyday, personal context within which this experience was embedded (Lehoux et al., 2004; Livingstone, 2008). The interviews were semi-structured. This is a method in which the agenda is set by the researcher while allowing the interviewee flexibility of response by using open-ended questions and nondirective probes (Creswell, 2014; Robson & McCartan, 2016). This approach best suited the current study as there was a need to generate in-depth information that was grounded in people's own experiences.

4.7.1.1 Interview guide

To help ease interviewees into the interview, they were first asked what online mental health tools they had used (or the main ones). The rest of the interview was framed around these, using a number of key open-ended questions formulated by the researcher. These questions invited the interviewee to talk about what their experience with using those online mental health tools had been like (e.g. what they had found helpful or unhelpful), how they got to use them or what was going on for them when they decided to use them, how they found out about them, their experience of using two or more online mental health tools at the same time and / or alongside other sources of support. An interview guide was created to help ensure that all of these topics were covered, although the actual order in which they were discussed could vary as the sequence of the questions could need adapting to the course created by the interviewee's responses (Robson & McCartan, 2016). To end the interview, interviewees were asked what they thought about the Internet as a source of support for mental health problems, and whether there was anything else they wanted to add that hadn't been discussed.

The initial interview guide was updated over time with suggestions for probes and additional questions about the key topics. A copy of the extended interview guide is shown in Appendix H.

4.7.2 Interview process and modes

This section describes the process of the interview meeting and the modes in which the interviews were conducted (in person and online).

In the introduction part of the interview meeting, the researcher explained the purpose of the interview and outlined its structure to the participant. Next, the information sheet and consent form were reviewed, and consent was formally collected at this point unless already done so via email. The last step before starting the interview proper involved

collecting demographic information about the interviewee using a short questionnaire. A print copy was used which was either read out to the interviewee or given to them to fill out on their own.

The interviews were conducted either in person or online. Interviews were carried out online when meeting in person was either impractical (e.g. time constraints, geographical distance) or not possible (due to community-wide restrictions to in-person activities during the first year of the COVID-19 pandemic). A total of six interviews took place in person. Four interviews took place online using either the Skype application (one interview) or the Zoom application.

4.7.3 Data analysis

As the purpose of Phase 2 of the research was to pursue a deeper understanding of people's own experience of using online mental health tools, thematic analysis was considered a suitable method choice as it allows to generate in-depth knowledge that is grounded in the data (Braun & Clarke, 2006). Another strength of thematic analysis is the ability to produce a rich and complex account of the data, which is particularly useful when exploring a new or under-studied area (*ibid.*), such as in the present study. Thematic analysis works by identifying salient patterns of meaning (themes) within the data, a characteristics it shares with other more established approaches to qualitative data analysis. These other approaches, however, are typically tied to particular purposes such as develop theory (grounded theory), conduct a deep analytical analysis of each case (interpretative phenomenological analysis), or investigate language / discursive practice (discourse analysis) (Braun & Clarke, 2020). In the present study the analysis of the qualitative data had no further needs in addition to generating an in-depth account of the salient aspects of people's experience with online mental health tools, therefore the choice of thematic analysis was considered to be appropriate to the needs of Phase 2.

Thematic analysis was performed following the approach developed by Braun and Clarke (2006, 2019, 2020). This was chosen as it breaks down the thematic analysis process into clear, systematic steps that provide a particularly useful starting point for engaging with the process of analysis in a rigorous manner. The data analysis procedure is described at the start of Chapter 6.

4.8 Ethics

Ethical approval to conduct the research study was obtained from Dublin City University Research Ethics Committee.

The researcher assessed that participating in the research would pose low risk for both participants and researcher. This section discusses the factors that were taken into account to ethically appraise the research. The potential vulnerability of the research population was carefully considered. The nature of the research, recruitment, and methods of data collection and analysis were considered from the perspective of their ethical implications for participants (e.g. confidentiality, risks). Following on from this, steps were taken to support participants' autonomy of choice, protect their confidentiality, facilitate a safe research environment for them, and ensure the safe handling of their data. Potential benefits to participants that may arise from the research and safety issues for the researcher were also appraised. No unforeseen ethical issues came up during the study.

4.8.1 Research population vulnerability

People who experience a mental health problem are often considered a vulnerable research population (Lakeman et al., 2013). After carefully considering the issue of potential vulnerability, risks, and benefits for people with a mental health problem participating in this study, the researcher's assessment was that this research population

did not present particular elements of vulnerability concerning their ability to give informed consent, to autonomously choose whether to take part, and to withdraw their participation. Research supports that people with a mental health problem are competent individuals who have clear views of mental health research, expect to receive adequate information before participation, weigh potential benefits and risks, and take their emotional fitness into account when considering whether to participate, or continue participating, in a research study (Biddle et al., 2013; Lakeman et al., 2013; Newman & Kaloupek, 2009; Schäfer et al., 2011). Evidence suggests that this also applies to those with more severe experiences of mental health problems (Candilis et al., 2006; Newman & Kaloupek, 2009; Schäfer et al., 2011). The nature of the research, what was requested of participants and why, and the potential risks and benefits of participation, were all expressed in comprehensible language in the Participant Information Sheet that prospective participants received. The researcher's contact details were also provided should individuals have any queries or concerns about the study and participating.

Additionally, the study did not present aspects that might restrict or impede people's autonomy of decision over whether to participate. The research had no covert goals, did not use deception, and did not involve the collection of any information about participants without their consent. All participants were over eighteen years of age and were volunteers from the general public who self-selected and indicated their willingness to participate by answering positively to a publicly disseminated call for participants. The study involved no conditions that might have led to participants' initial consent or continued participation being less than voluntary, such as the prospect of access to a mental health intervention, being offered compensation, or being recruited through someone who holds a position of authority over them (e.g. their mental health care provider).

4.8.2 Informed consent

Consent was sought separately for each phase of the study. Consent to participate in the online questionnaire was sought by getting participants to tick a box acknowledging that by proceeding they consented to participate in the questionnaire. This unlocked access to the questionnaire. For the in-person interviews, a consent form was completed by the participant at the interview, dated, and signed by both participant and researcher, who each retained a copy. For the online interviews, the consent form signed by the researcher was sent to the participant via email, signed by this either digitally or by hand, and returned to the researcher via email. The consent form is reported in Appendix G.

4.8.3 Anonymity and confidentiality

Participants' anonymity and confidentiality were protected in a number of ways. In Phase 1, participants' identity was protected by the fact that the questionnaire was anonymous and self-administered online. No personal information (e.g. names, contact details) were asked, therefore no one, including the researcher, could identify individual participants from their questionnaire. To protect interviewees' confidentiality, several steps were taken. After each interview, a copy of the email exchange between the researcher and interviewee (containing the name and email address of the latter) was saved onto the researcher's password-protected laptop computer and the original emails were deleted. Interviewees' identity was further protected by anonymizing their interview data and ensuring secure storage and disposal of those data as outlined in section 4.8.7. Only anonymised data extracts are used in this thesis and any other publications arising from this research (e.g. conference presentations, journal articles). Interview participants were explained that their data would be treated as strictly confidential but that legal limitations apply (information can be subject to subpoena, freedom of information claim or mandated reporting). There were no additional specific limitations to data confidentiality in this study.

4.8.4 Potential risks to participants and risk management procedures

In this study, potential risks to participants were associated with sensitive data and with the event of experiencing distress during the interview. These risks and the procedures taken to minimize them are detailed in what follows.

Sensitive data

The online questionnaire collected some potentially sensitive data about participants, including their sexual orientation, ethnic / cultural background, interventions / treatments received for their mental health problem, and problems for which they used online mental health tools. These may be sensitive data for people with mental health problems, those who are or have been service users, and those belonging to sexual or ethnic / cultural minorities. An interview participant may also share information of a sensitive nature during the interview. The greatest risk associated with sensitive data is when a participant can be identified. This risk was greatly minimized in this study. First, as the questionnaire was self-administered online and entirely anonymous, participants' identity was protected in Phase 1. Second, the names and contact details of the interview participants (e.g. email address) were kept strictly confidential and were known only to the researcher. Third, all data and associated material (questionnaires, interviews, interview notes) were treated confidentially and anonymised where necessary (interview data). Lastly, secure data handling procedures (detailed in section 4.8.7) have ensured the safe collection and storage of the data, maximising the protection of confidentiality.

Experiencing distress while participating in the interview

As in all research where people are asked about their personal experiences, the researcher was mindful that participants might experience some psychological discomfort due to the

possibility of recalling negative or difficult moments associated with their experience of using an online mental health tool for mental health support. With support from the literature (Dempsey et al., 2016; Lakeman et al., 2013; Newman & Kaloupek, 2009; Schäfer et al., 2011), the researcher's assessment was that the risk of psychological harm for an interview participant becoming distressed was low and unlikely to have long-lasting effects. First, the literature shows that when people with mental health problems experience distressing feelings while participating in qualitative research, such feelings appear to be transitory, and most participants are able to tolerate them or find them understandable rather than harmful (Becker-Blease & Freyd, 2006; Biddle et al., 2013; Jaffe et al., 2015). Second, careful steps were taken to minimize the risk of a participant becoming distressed and to appropriately respond to a distressed participant. These steps are as follows:

- *Communicating potential risks to prospective participants* – Potential risks (and benefits) of participating in the interview were clearly communicated to participants, so that they could decide if it was in their best interest and safe for them to participate. First, the Participant Information Sheet invited participants to consider the possibility that they might remember negative or difficult moments relating to their experience of using an online mental health tool. Second, participants were assured that they would not be pressed to talk about anything they did not feel comfortable talking about, and that it would be their choice as to whether to continue, stop, or terminate their participation should they experience distress during the interview.
- *Creating an emotionally safe research space* – In research with people with mental health problems, creating an emotionally safe space enables participants to disclose their experiences and underlying emotions to a researcher without feeling threatened (Lakeman et al., 2013). This requires that a participant's expression of distress, should this happen, is met by the researcher with empathy and acceptance (Dempsey et al., 2016; Lakeman et al., 2013). Additionally, making the encounter between researcher and participant a safe space is crucial to facilitating the therapeutic potential of participating in qualitative research interviews (Lakeman et al., 2013).

Several steps were taken to ensure a safe research space and experience for the interviewees. First, adequate information about the study and the potential risks and benefits of participation was provided in the Participant Information Sheet and in response to any such queries participants had. Second, the voluntary nature of the participation was highlighted in the Participant Information Sheet as well as verbally at the interview during the consent process. Third, for in-person interviews, it was ensured that it took place in a safe and quiet physical environment, such as a private room in a public building. Five participants agreed to have the interview in a private room in the School of Nursing building at Dublin City University, while one participant offered to have the interview done in their home and this was deemed acceptable by the researcher. For online interviews, participants were advised to choose a comfortable, private, and undisturbed location. The online interviewees were assured that, should they be disturbed, the researcher would immediately pause the interview and resume only if and when they are ready. Lastly, the researcher endeavoured to be personable, be an empathic, perceptive, open-minded, and nonjudgmental listener, and be ready to stay with the participant and the emotions they express, including distress (Dempsey et al., 2016; Lakeman et al., 2013). These capacities are central to creating an emotionally safe research space, and training is needed to develop them, including qualitative interview training (Dempsey et al., 2016). The researcher had previous experience of qualitative interviewing with research participants from a similarly 'vulnerable' research population (adults with eating disorders who had taken part in the pilot study of an online self-help intervention for eating disorders). She has also availed of qualitative interviewing training by attending a two-day workshop on qualitative interview methods with Dr Andrew Balmer (DCU Qualitative Research Summer School, May 2015, Dublin City University).

- *Providing a safety net* – The researcher prepared for the possibility of a participant becoming distressed by familiarising herself with Dempsey et al.'s (2016) Distress Protocol (Appendix I), which they devised for researchers conducting qualitative interviews on sensitive topics with vulnerable populations. It lists simple but clear steps

and actions that the researcher can take to assist a distressed participant. The Distress Protocol applied to both the in-person and the online interviews. As part of the Distress Protocol, the researcher checks with the participant who becomes distressed if they wish to take a break, terminate, or continue the interview. Should a participant become distressed and choose to continue, the Interview Guide provided several opportunities to shift the interview to safer, non-emotional topics (e.g. questions relating to technological aspects of online mental health tools), which may allow the interview to continue on a more positive note and help alleviate any tension that might have built up.

The contact details of support services were also made available to participants, should they wish to receive advice or support after experiencing distress during the interview. The contact details of the support services were included in the Participant Information Sheet, of which each interviewee received a copy. These contacts details were also made available to questionnaire participants via the questionnaire Information Sheet.

4.8.5 Potential benefits to participants

Evidence suggests that most people with mental health problems who participate in well-conducted mental health research have, on balance, a positive participation experience and find the in-depth explorations of their experiences emotionally, if not therapeutically, beneficial (Biddle et al., 2013; Jaffe et al., 2015; Jorm et al., 2007; Lakeman et al., 2013; Taylor et al., 2010). Such benefits frequently arise from talking at length about one's experience and telling one's story and having it heard (Biddle et al., 2013; Lakeman et al., 2013). In the present study, the researcher anticipated that people might find similar benefits in participating in the interview. Other moral and emotional benefits that participants are likely to experience arise from self-selecting and exercising one's choice to participate, and knowing that by participating one is helping others (Candilis et al., 2006; Lakeman et al., 2013; Schäfer et al., 2011).

4.8.6 Researcher safety

As participants were recruited across the country, the researcher expected to travel to various locations in the Republic of Ireland, if feasible, to meet with the interview participants. The researcher was mindful of potential risks associated with this, such as if meeting a participant in an isolated area or being exposed to someone who purports an interest in the study and turns out to be someone other than who they claimed to be. The following procedures from MacDermott (2015, p. 74) were put in place to minimise any risk when meeting interview participants:

- 1) Do not give personal details to participants (e.g. home address, phone number).
- 2) Meet participants in daylight or early evening.
- 3) Ensure safe traveling to and from the location and venue of the meeting.
- 4) If travelling to an unfamiliar location, gather travel information beforehand and familiarize yourself with the area on arrival.
- 5) Inform someone you can trust of the area or town / city to be travelled to and how much time will be spent there.
- 6) Put details of the location and venue for the interview into a sealed envelope (to maintain participant confidentiality). On the outside of the envelope put (1) expected time of arrival and (2) time you expect to finish. Give this to someone you can trust and are able to contact easily. Call this person before entering this venue; call again when leaving venue. Ensure that you collect the envelope from them as soon as practicable afterwards. The envelope should only be opened by your contact person in the event of an emergency.
- 7) Keep a fully charged mobile phone and ensure there is plenty of credit on it.
- 8) Conduct the interviews in a private space within a public building, for example a room within a local community or family centre or within a university. This was to ensure safety for the participants as much as for the researcher.

4.8.7 Data handling

Procedures were followed to ensure to ensure the safe collection, storage, and disposal of the research data.

Interview data collection

In-person interviews took place in a private room within the School of Nursing building at Dublin City University or, in one case, in the interviewee's home at their suggestion and after the researcher assessed that this was a suitable and safe solution for both. These interviews were recorded using a digital recorder and a smartphone for back-up.

Online interviews were conducted from a private, undisturbed room which was either the researcher's office or, during the COVID-19 lockdowns, a suitable room in her accommodation. To enhance privacy, the researcher used headphones to ensure that no one else could hear the participant end of the call. The online interviews were carried out using either the Skype application (one interview) or the Zoom application in audio-mode only (no video). For the Skype interview, the researcher set up a dedicated research account on Skype to connect with the participants. For the Zoom interviews, the institutional Zoom account made available to the researcher by Dublin City University was utilised. To record the Skype interviews, the researcher downloaded the Mp3 Skype Recorder Free Edition (<https://voipcallrecording.com/>) and installed it on her laptop. This allowed the recordings to be saved onto the researcher's laptop rather than an online (cloud) storage system. Zoom interviews were recorded using the Zoom integrated recorder, activating the setting that allowed recordings to be save to a local computer (the researcher's laptop) and deactivating the setting for saving recordings on the Zoom cloud storage.

Skype was used in the early stages of Phase 2. Later (during the COVID-19 lockdowns), in line with advice from the DCU Data Protection Unit, Zoom was deemed to be a more secure alternative. Specific security and privacy settings that were used in Zoom included password-only access to a Zoom meeting and locking the meeting once the participant had joined.

Data storage and disposal

All research data was stored in digital format on the researcher's password-protected laptop computer. Only the researcher had access to this computer. The questionnaires were exported from the Qualtrics account and saved as PDF files (individual questionnaires) and SPSS files (collated data). The interview audio-recordings were saved on the researcher's laptop as soon as practicable after each interview, and deleted from the recording device. The written interview transcripts were saved as PDF files for secure digital storage, and kept separately from the interview audio-recordings. Written notes and observations taken during the interviews were initially kept in a locked cabinet in the researcher's office in the School of Nursing and Human Sciences, and saved on to PDF format as soon as possible. Hardcopy Consent Forms signed by the interviewees were to be stored in the same locked cabinet in the researcher's office. This was possible only for as long as the researcher had access to a private office space. Afterwards, the forms were kept safe at the researcher's home inside a locked file box. All research data and records were backed up on the researcher's DCU Apps Google Drive account, which is private and encrypted. Consent forms returned via email (for the online interviews) and all email exchanges between the researcher and the interviewees was saved onto the researcher's laptop and the original emails were deleted.

All research data are kept for a pre-specified amount of time, at the end of which they will be permanently deleted. The interview audio-recordings are to be kept until completion of the PhD (submission of the hard-bound thesis). The interview transcripts, notes, and

questionnaire data will be kept for 7 years from the submission of the hard-bound dissertation, to support publications that may arise from the research. During this time, the data will be safely kept, in digital format, on the researcher's password-protected laptop computer and DCU Apps Google Drive account.

4.9 Conclusion

This chapter illustrated the research methodology and ethical considerations. The chapter opened with a discussion of the rationale for choosing a mixed methods methodology and how the philosophy of pragmatism aligns with this choice of methodology. The decision to employ a concurrent mixed methods design was then discussed as best suited to the intent of combining and comparing information collected at the level of both depth and breadth. The need for a purposive sampling strategy was explained, and the specific procedures of data collection and analysis employed within the quantitative and qualitative phase were presented in detail. The chapter concluded with an ethical appraisal of the research. The following three chapters present the quantitative, qualitative, and integration results.

CHAPTER 5 – PHASE 1 – QUANTITATIVE RESULTS

5.1 Introduction

This chapter presents the results from a cross-sectional online questionnaire of adults in the Republic of Ireland who self-identified as having (or having had) a mental health problem and who sought support for it using an online mental health tool. A total of 109 individuals completed the questionnaire. It is not possible to determine how many people viewed the recruitment notices, therefore a response rate cannot be calculated.

The questionnaire data and results are presented across a number of sections. The sources through which the participants learned about the study are first reported. Next the results of the descriptive statistics analyses of the questionnaire data are reported. There follow the analyses of associations that were conducted to deepen the exploration of participants' use of online mental health tools. The chapter concludes with a summary of the key results.

The questionnaire also generated qualitative data from a total of 48 (44%) participants. These data consist of the comments participants wrote in response to the open-response question at the end of the questionnaire (44/109) and the comments a few participants wrote in reply to Question 16 of the questionnaire (11/109). As previously discussed in section 4.6.3, these comments made for interesting data, but had limited depth (ranging in length between 3 – 163 words). This offered little scope to deepen their analysis beyond their surface meaning, resulting in the analysis remaining primarily descriptive (Clarke & Braun, 2018). These data were sorted into three main categories, with each category providing a summary of participants' comments in that category. As the main contribution of these data is to 'give life' to the quantitative results (e.g. in showing the variety of views about a given issues), they will be presented as quotes alongside the descriptive statistics results where relevant. Superfluous content was removed from the quotes, indicated by three dots within square brackets [...]. No other changes were made to the text of the

quotes (typos were not corrected). The quotes are provided with participant number after each quote, e.g. P12 denotes Participant number 12 (out of those who provided a comment).

5.2 Recruitment sources

Various recruitment channels were employed with some mixed results. The Activelink website, organisations / groups, social media, and print flyers were the main ways in which the recruitment notice was disseminated. Information was collected to establish what were the channels through which participants had heard about the study. Advertising on the Activelink website was the most effective recruitment strategy, with over one third (35.8%, 39/109) of the survey participants recruited in this way. Recruiting through mental health or other organisations and groups (e.g. youth organisations, college departments) yielded a similar (although slightly lower) proportion of participants (30.3%, 33/109)⁶, but was more effortful as it required the contribution of 34 such organisations and groups that agreed to disseminate the recruitment notice. The third largest group of participants was recruited through social media (16.5%, 18/109)⁷. Few participants heard about the study through other sources. The wider breakdown of these data is provided in Appendix J.

Information was also collected regarding what computer device the participants used to access the survey (desktop computer, laptop, smartphone, Smart TV, tablet or other) and what was their location at that time (home, a place outside the home or on the move).

⁶ Participants who heard about the study through a mental health or other organisation or group include those who selected 'Through a mental health organisation / group' (12.8%, 14/109), 'Through a non-mental health organisation / group' (5.5%, 6/109) and participants who used the 'Other – please specify' option and wrote that they heard about the study through SpunOut (4.5%, 5/109), their college or department (6.3%, 7/109) or a depression/anxiety group on Facebook (0.9%, 1/109) (see Appendix J).

⁷ Participants who heard about the study through social media include those who selected 'Facebook Ad' (5.5%, 6/109), Twitter (10.1%, 11/109) and one participant who used the 'Other – please specify' option and wrote that they heard about the study on LinkedIn (0.9%, 1/109) (see Appendix J).

These data are reported in Appendix J and show that most participants did the questionnaire on a Smartphone (56.9%, 62/109) or on a desktop or laptop computer (39.5%, 43/109), and either while at home (66.1%, 72/109) or at another fixed location (31.2%, 34/109).

5.3 Descriptive statistics

5.3.1 Data analysis

This section presents the results from the descriptive statistics analyses of the questionnaire data, which include the demographic characteristics of the participants, characteristics of the online mental health tools they used and their patterns and modes of use, the mental health interventions they had received, and aspects of their daily Internet use in general and in relation to mental health. Percentages are rounded to the nearest tenth (therefore they may not add to exactly 100%).

5.3.2 Results

5.3.2.1 Demographics

Participants' demographic information includes age, gender, sexual orientation, ethnic / cultural background, education, employment, annual income, relationship status, living situation and who they were living with, and the county and setting (urban / rural) in which they lived.

Participants' age ranged from 18 to 66 years old (Mean (SD) = 33.78 (12.19), Median = 31), with over half of participants (56.9%, 62/109) aged between 18 – 34 years old. The majority were female (80.7%, 88/109) and heterosexual (69.7%, 76/109). Almost all participants

White (94.5%, 103/109),⁸ mostly White Irish (85.3%, 92/109). A wider breakdown of the age, gender, sexual orientation, and ethnic / cultural background of the sample is provided in Table 3 below.

Table 3 - Age, gender, sexual orientation, and ethnic / cultural background

Demographics	Participants
Age	N=109 n (%)
18-24	29 (26.6)
25-34	33 (30.3)
35-44	24 (22.0)
45-54	16 (14.7)
55-64	4 (3.7)
65+	2 (1.8)
Missing	1 (0.9)
Gender	N=109 n (%)
Female	88 (80.7)
Male	20 (18.3)
Other gender identity - please specify: Male (trans)	1 (0.9)
Sexual orientation	N=109 n (%)
Straight / Heterosexual	76 (69.7)
Bisexual	22 (20.2)
Gay / Homosexual	4 (3.7)
Lesbian	3 (2.8)
Other - please specify: Asexual Bi-curious Demisexual Pansexual	4 (3.7) 1 (0.9) 1 (0.9) 1 (0.9) 1 (0.9)

⁸ Participants who indicated having a White background other than 'White Irish' included those respondents who selected 'Any other White background' (8.3%, 9/109) and one participant (0.9%) who selected 'Other' and specified being of White English / Irish mix (Table 3).

Ethnic / cultural background	N=109 n (%)
White Irish	93 (85.3)
Any other White background	9 (8.3)
Asian or Asian Irish – Any other Asian background	2 (1.8)
Black or Black Irish – African	1 (0.9)
Black or Black Irish – Any other Black background	0
Asian or Asian Irish – Chinese	0
White Irish Traveller	0
Other, including mixed background - please specify:	4 (3.7)
Latin	1 (0.9)
White English / Irish mix	1 (0.9)
White(northern european) and asian	1 (0.9)
<i>(one participant did not specify)</i>	1 (0.9)

Most participants (56%, 61/109) had a third level degree (Bachelors, postgraduate or doctoral degree). Most were currently working (56%, 61/109)⁹ or students / in training (25.7%, 28/109)¹⁰. Approximately one third of those who worked were in part-time employment (17.4%, 19/109). Additionally, more than 1 in 10 (13.7%, 15/109) were unemployed / job seeking or on long-term disability or illness pension.¹¹ Notably, more than half of the sample (56.8%) were students / in training, in part-time employment, unemployed or on long-term disability or illness pension, i.e. individuals who are more likely to lack financial stability. Regarding participants' annual income or how much money they had to live on each year,¹² 60.6% (66/109) reported having an annual income of up to

⁹ Participants who were working included those who were employed fulltime or part-time (48.6%, 53/109), self-employed (6.4%, 7/109) and one participant (0.9%) who specified working under a Community Employment (CE) scheme (Table 4).

¹⁰ This includes participants who indicated they were a 'Student or in training (e.g. apprentice, internship)' (23.9%, 26/109) and two participants (1.8%) who selected 'Other' and specified being students (Table 4).

¹¹ These included participants who were unemployed / job seekers (7.3%), on long-term sickness / disability benefit (5.5%), and one participant (0.9%) who selected 'Other' and specified being on an invalidity pension (Table 4).

¹² Participants were asked to indicate their personal annual income after tax or annual household income if they shared income with someone else such as a spouse or partner. If

€25,000, with more than half (37.6%, 41/109) reporting an annual income of up to €12,000. The wider breakdown of the data on education, employment and annual income is shown in Table 4 below.

Table 4 - Education, employment, and annual income

Demographics	Participants
Education, highest level completed	N=109 n (%)
Bachelors degree	29 (26.6)
Postgraduate degree	27 (24.8)
Leaving certificate	26 (23.9)
Diploma or certificate (post leaving certificate)	17 (15.6)
Doctoral degree	5 (4.6)
Junior certificate	2 (1.8)
Primary school	0
Other - please specify:	3 (2.8)
Dip...currently 2nd year degree	1 (0.9)
Intermediate certificate*	1 (0.9)
Professional qualification	1 (0.9)
Employment status	N=109 n (%)
Employed full time	34 (31.2)
Student or in training (e.g. apprentice, internship)	26 (23.9)
Employed part-time	19 (17.4)
Unemployed / Job seeker	8 (7.3)
Self-employed	7 (6.4)
On long-term sickness / disability benefit	6 (5.5)
Looking after family / home	3 (2.8)
Retired	2 (1.8)
Carer for a family member	0
Unable to access paid work because of asylum seeker status	0
Other - please specify:	4 (3.7)
CE scheme	1 (0.9)
INVALIDITY PENSION	1 (0.9)
PhD student	1 (0.9)

they did not have an income they were asked to indicate how much money they had to live on each year.

was employed 16 years up to 2017...i am job-seeking for part-time work as well as studying	1 (0.9)
Annual income or amount of money participants had to live on yearly	N=109 n (%)
Under €12,000	41 (37.6)
€12,001 - €25,000	25 (22.9)
€25,001 - €40,000	21 (19.3)
€40,001 - €55,000	9 (8.3)
€55,001 - €70,000	9 (8.3)
Over €70,000	4 (3.7)

* Secondary level education – it was replaced in 1992 by the Junior Certificate

Over half of the participants (56.9%, 62/109) reported being in a relationship, either married / in a civil partnership / cohabitating or in a relationship but not cohabitating.¹³ The majority lived either in a house or apartment that they owned or privately rented (54.1%, 59/109) or with their parents (30.3%, 33/109). Overall, 88.1% (96/109) of participants lived with someone (with children, with partner / spouse with or without children, with parents, with family members, with friend / housemates or with others). A wider breakdown of these data is provided in Table 5 below.

Table 5 - Relationship status, living situation, and who participants were living with

Demographics	Participants
Relationship status	N=109 n (%)
Single, never married or in a civil partnership	43 (39.4)
Married / in a civil partnership / cohabitating	34 (31.2)
In a relationship (not cohabitating)	25 (22.9)
Separated or divorced from spouse / civil partner	4 (3.7)
Widowed / surviving civil partner	0
Other - please specify:	3 (2.8)

¹³ Participants who were in a relationship included those who selected 'In a relationship (not cohabitating)' (22.9%, 25/109) and 'Married / in a civil partnership / cohabitating' (31.2%, 34/109) as well as the three participants (2.8%) who selected 'Other' and specified being in a relationship (Table 5).

divorced and in a relationship - not co-habiting	1 (0.9)
Engaged to be married	1 (0.9)
In a relationship not married (cohabitating)	1 (0.9)
Living situation	N=109 n (%)
Living with parents	33 (30.3)
Private rental, house / apartment	32 (29.4)
Own house / apartment	27 (24.8)
Private rental, room	11 (10.1)
Local authority housing	4 (3.7)
Group home or hostel	2 (1.8)
Out of home / homeless / in emergency accommodation	0
Direct Provision accommodation	0
Other - please specify	0
Who participants were living with*	N=109 n (%)
Living with partner / spouse (without children)	22 (20.2)
Living with parent(s)	22 (20.2)
Living with family members	21 (19.3)
Living with friends or housemates	20 (18.3)
Living alone (without children)	15 (13.8)
Living with partner / spouse (with children)	15 (13.8)
Living alone (with children)	5 (4.6)
Living with others in a group home / hostel	2 (1.8)
Other – please specify: Alone - child 24 and living independently	1 (0.9)

* Participants could select all options that applied to them, therefore they could have multiple responses.

The final set of demographic data, presented in Table 6 below, includes the county and setting in which the participants were living. Participants were from 21 of the 26 counties of the Republic of Ireland. Most were in County Dublin (44%, 48/109), followed by County Galway (11%, 12/109). A detailed breakdown of the data by county is provided in Appendix K. Three quarters of participants lived in an urban area (76.1%; 83/109).

Table 6 - Geographical location and setting (rural / urban) of participants

Demographics	Participants
County	N=109 n (%)
Dublin	48 (44.0)
Galway	12 (11.0)
Other	49 (44.9)
Setting	N=109 n (%)
In the country / rural area	26 (23.9)
Town / urban area	83 (76.1)

5.3.2.2 Use of online mental health tools

Participants were asked several questions to explore their patterns and modes of use of online mental health tools.

Online mental health tools used by the participants and their perceived usefulness

Participants were asked to name the online mental health tools they had used (up to 12). This generated 302 responses. Using these data, a count was produced of how many participants had used one, two or more online mental health tools, shown in Table 7 below. There were many participants who had used multiple such tools, although most (59.6%, 65/109) reported using only one or two.

Table 7 - Number of online mental health tools used by participants

Number of online mental health tools	Participants
	N=109 n (%)
1	31 (28.4)
2	34 (31.2)
3	15 (13.8)
4	16 (14.7)
5 - 12	13 (11.9)

The 302 online mental health tools used by the participants were sorted into categories, although not all responses could be categorised as some had insufficient information. For example, some participants described the type of support but not the online form in which they accessed it (e.g. “Cognitive Diary”, “LGBT support”) or they simply named the issue they were seeking to address (e.g. “Loneliness”, “Panic attacks”). A total of 17.9% (54/301) of responses could not be categorised. Bearing this in mind, most participants had used self-help and wellbeing apps (54.1%, 59/109), followed by online programmes and courses (27.5%, 30/109), supports involving contact with others (helplines, online counselling, support groups, online communities) (21.1%, 23/109), and looking at mental health related information online such as on dedicated mental health websites (19.3%, 21/109). Other online mental health tools used by the participants included online video / audio resources (9.2%, 10/109) and online personality / assessment tests (1.8%, 2/109). A few participants specified that the mental health resources they used were on social media, mostly YouTube (8.3%, 9/109). The detailed categorical breakdown of the online mental health tools used by the participants is provided in Appendix M.

The participants were also asked to rate the usefulness of each online mental health tool they had used, by rating them on a 5-item scale ranging from *Extremely useful* to *Very useful*, *Somewhat useful*, *Not very useful* and *Not at all useful*. Table 8 below shows the ratings collapsed into three main groupings (Extremely useful / Very useful; Somewhat useful; Not very useful / Not at all useful) and how many participants gave each rating. The total exceeds 109 because several participants who used multiple online mental health

tools rated these differently, therefore these participants appear in multiple groupings. The table shows that two thirds of the participants (68.6%, 75/109) rated at least one online mental health tool as extremely / very useful, half of the participants (51.4%, 56/109) rated at least one online mental health tool as somewhat useful, and less than on third of the participants (28.4%, 34/109) rated at least one online mental health tool as not very / not at all useful.

Table 8 - Participants' usefulness rating of online mental health tools

Usefulness rating	Number of participants who gave each rating*
	N=109
	n (%)
Extremely useful / very useful	75 (68.6)
Somewhat useful	56 (51.4)
Not very useful / not at all useful	34 (28.4)

* Participants had multiple responses.

A similar picture emerged from looking at the data in terms of how many of the 302 online mental health tools were given each rating. These data can be seen in Appendix K. In sum, while most participants had at least one decidedly positive experience, less positive experiences as well as negative experiences with online mental health tools were also (relatively) common in the sample. This mix of experiences and views was also reflected in the questionnaire's qualitative data. The analysis of these data yielded two descriptive themes, 'Helpful aspects of online mental health tools' and 'Unhelpful aspects of online mental health tools', that helped bring the quantitative data to life. Out of the 48 participants who commented on the use of online mental health tools and the Internet for mental health support, positive views or experiences were reported by 68.8% (33/48) and negative views or experiences by 37.5% (18/48). A visual summary of the two themes is provided in Appendix L.

The first theme, 'Helpful aspects of online mental health tools', presents a variety of ways in which participants found or viewed online mental health tools helpful as well as comments expressing appreciation of the Internet as a source of mental health support. A

few participants remarked positively on the accessibility and availability of online mental health tools when needed:

It has helped me so many times as it is always available in times of need. [P31]

I liked having the ongoing help that the meditations gave me . I could use them to help me anytime I needed and got instant relief. [...] [P13]

For some participants, online mental health tools were a tool to help themselves and be more active in their own care:

[...] I find OMHSHPs¹⁴ a very useful tool that can be accessed at any time of the day and can be useful in calming me down when i am particularly anxious and also makes me feel i am being proactive in my struggle for recovery. [P5]

[...] It also feels like I have a more active role in helping myself. I am being active in my own care rather than waiting for appointments [P17]

Several participants wrote about ways in which they used online mental health tools or the Internet that helped them feel better, such as to relax, improve their mood and motivation about recovery, feeling less lonely, or finding comfort in having access to the Internet:

[...] They're also a great help for motivating me when I'm feeling negative about recovery or my mental health in general. [P27]

It's been really helpful to me to find like minded people and to not feel so alone. [P32]

¹⁴ OMHSHPs (online mental health self-help programmes) is the term that was used in the online questionnaire to refer to online mental health tools. Please see explanation in section 4.4 of the Methodology Chapter.

[...] [I] find that it is essential to have use of the Internet for me...and I find it a great comfort.... [P15]

For other participants, online mental health tools and the Internet were a source of access to help and helpful information. They wrote about using online resources to find useful ways of dealing with their problem, learn about mental health, and understand their problem better:

I have used search engines to research psychology or psychotherapy in the past. Usually to find effective coping mechanisms for anxiety, answer questions I may have about mental health or psychotherapy. [...] [P20]

[...] I find them a very useful tool. Their main utility is, in my opinion, give me an introduction to what different mental health issues look like and be aware of which behaviours can be signs that I should be discussing with the therapist. [...] [P23]

A few simply commented in generic terms about the helpfulness of online mental health tools.

Meditation, experiences of others, etc can be very helpful [...] [P8]

I'm very positive about them and look forward to improvements [P26]

By contrast, the theme 'Unhelpful aspects of online mental health tools' presents ways in which participants found or viewed online mental health tools and the Internet unhelpful for mental health support. Issues that participants had encountered while using such tools concerned the design, content, or terms of use of the tools. These could lead to disengaging from an online mental health tool or specific activities as part of it.

An interactive mental health app for mainstream use would be very useful. Most are not really interactive and you lose interest/attention [P2]

[...] it felt limited in how much it could engage a user beyond introducing them to basic concepts of CBT, mindfulness. etc. [...] [P24]

[...] The one connected with TCD did not allow the use of a nickname (I asked), they required your full name and town to be on all public posted - so I didn't post. [...] [P30]

Some participants also expressed the view that certain online environments or activities or the Internet in general could be unsupportive and detrimental to one's mental health and make one's problem worse.

Although in the past I found online forums regarding individuals person journeys with depression helpful, now I find that they can be a negative place full of negative comments [...] [P1]

[...] The impersonal nature of the internet can compound suffering and isolation of people in need of help. [P16]

A couple of participants who did an online self-help programme with help from a facilitator reported issues with this that had negatively affected their experience. For example:

Having volunteer support was great at the start. The volunteer however changed in the middle. After that I wasn't comfortable to keep sharing updates and dropped out towards the end. [...] [3]

My experience of OMHSHPs is that it was impersonal. The facilitator's messages appeared to be "canned" responses. It was not like dealing with a chatbot than a real person. For that reason I did not complete the course. [P34]

Other criticisms about online mental health tools and the Internet as sources of mental health support were general comments about their unhelpfulness or highlighted issues with finding reliable information online in a timely manner.

I do not find online mental health programs helpful [P7]

I have benefited from the information I discovered on the internet about my mental health issues but it is given the enormity of information found it frustrating to find credible resources and took months of searching until I stumbled upon something that related to me. [...] [P16]

Use of online mental health tools with supporter help

Engaging in an online mental health tool can involve contact with a 'supporter' such as a healthcare professional (e.g. GP, mental health professional) or a facilitator (e.g. trained volunteer). The participants were asked to indicate which online mental health tools, if any, they had done with the help of a supporter, who their supporter was, how often they were in contact with them, and in what way. A little under half of participant (45%, 49/109) did one or more online mental health tools with the help of a supporter. This was most frequently a mental health professional (42.9%, 21/49) or a facilitator (40.9%, 20/49). Contact with the supporter tended to occur at least once a week (47%, 23/49) or at least monthly (but not every week) (40.9%, 20/49). Email was the most used means of contact (42.9%, 21/49), followed by in-person appointments (38.8%, 19/49) and instant messaging (24.5%, 12/49). A detailed breakdown of the data is provided in Appendix K. Among the open-response comments, three participants commented on their experience with their supporter, all three focusing on issues they had encountered during this. This has already been covered under the previous section and won't be repeated here.

Reasons for using an online mental health tool

Participants were asked what were the reasons why they used online mental health tools. They chose as many answers as were relevant to them from a list of 21 possible reasons. They also had the option to answer in their own words. The most popular reason for using an online mental health tool was linked to the cost of such tools, namely their perceived affordability or being free of cost (*Affordability / free of cost*, 66.1%, 72/109). Among the open-ended comments, very few were in relation to the issue of affordability or cost. Most of these compared online mental health tools with traditional forms of support, expressing various views about the role of these tools and the Internet as sources of affordable supports. For example:

DBT is prohibitively expensive but I find practicing the techniques helpful [P29]

Very limited options in free versions of OMHSHPs, but premium memberships is too expensive, especially when compared to in person help through mental health charities, on campus counselling etc. [...] [41]

The second most common reason for using an online mental health tool was *To gain insights into how to manage a certain issue / experience* (57.8%, 63/109). Consistent with this, some of the participants who answered the open-ended question at the end of the survey did comment on using online mental health tools and the Internet to find ways of dealing with their problem or understand their problem better, as previously noted when outlining the theme 'Helpful aspects of online mental health tools'. Both benefits and issues around using online mental health tools or the Internet for such purposes were highlighted. For example:

I learned a lot about myself. I hope more people can reap the rewards [21]

I have found the use of OMHSHPs to be helpful and the internet both good and bad for mental health. It can be used as a tool to help yourself and discover new ways of dealing with things or it can be used to your own detriment often contributing to the mental health issues in the first place. [18]

Desperation for help was the third most common reason for using an online mental health tool, selected by half (50.5%, 55/109) of the sample. No insights came from the questionnaire qualitative data.

The rest of possible reasons for using an online mental health tool were selected by fewer participants in different proportions. The results are displayed in detail in Table 9 below.

Table 9 - Reasons for using an online mental health tool

	Participants*
	N=109 n (%)
Affordability / free of cost	72 (66.1)
To gain insights into how to manage a certain issue / experience	63 (57.8)
Desperation for help	55 (50.5)
Possibility of doing the OMHSHP in my own time**	52 (47.7)
Possibility of starting the OMHSHP immediately	49 (45.0)
Curiosity	42 (38.5)
Possibility of working through the OMHSHP at my own pace	42 (38.5)
Possibility of getting help without needing to leave the house	40 (36.7)
To find out how a certain approach (e.g. cognitive behavioural therapy) worked / whether it would work for me	39 (35.8)
Privacy (e.g. no one else needs to know about it)	37 (33.9)
I felt I had an issue and wanted to solve it myself	36 (33.0)
Anonymity (e.g. no need to see / talk to a therapist in person)	33 (30.3)
To get some help while I was on a waiting list to see a mental health specialist / receive treatment	31 (28.4)
Possibility of getting help without needing to travel	28 (25.7)
I was recommended / prescribed an OMHSHP by a healthcare professional	26 (23.9)
Loneliness	19 (17.4)

Previous negative experience with in-person talking therapy	17 (15.6)
Boredom	6 (5.5)
To participate in the research study of an OMHSHP	2 (1.8)
I have a disability or condition that prohibits me from accessing other mental health services - please specify your disability or condition	1 (0.9)
Other - please specify:	11 (10.1)
accompanied a friend to their event	1 (0.9)
DBT is prohibitively expensive but I find practicing the techniques helpful. ^a	1 (0.9)
Depression	1 (0.9)
Determination to get better ^b	1 (0.9)
easy to use	1 (0.9)
I liked having the ongoing help that the meditations gave me. I could use them to help me anytime I needed and got instant relief. My symptoms were mostly mild to medium. ^c	1 (0.9)
I see a counselor for anxiety. I read about meditation and mindfulness which seemed like it could help manage anxiety. It seemed like a healthy thing to do as well. I used a timer to facilitate practicing meditation.	1 (0.9)
I wanted self help after 3 years of therapy ^d	1 (0.9)
It was recommended to me by a close friend initially / a volunteer facilitator ...	1 (0.9)
Serious panic attacks.Memory loss.	1 (0.9)
To help along side going to talk therapy ^e	1 (0.9)

* Participants had multiple responses.

** The responses listed in this table are taken verbatim from the online questionnaire, where the term OMHSHP (online mental health self-help programme) was used. Please see explanation provided in section 4.4 of the Methodology Chapter.

^a This participant had also selected 'Affordability / free of cost'.

^b This participant also selected 'Desperation for help'.

^c This participant also selected 'Affordability / free of cost', 'Possibility of starting the OMHSHP immediately', 'Possibility of doing the OMHSHP in my own time', 'Possibility of working through the OMHSHP at my own pace' and 'Possibility of getting help without needing to travel'.

^d This participant also selected 'Previous negative experience with in-person talking therapy'.

^e This was the participant's only response to this question (did not selected other responses).

Issues or experiences for which help was sought through an online mental health tool

Participants were also asked to indicate what were the issues or experiences for which they sought support through an online mental health tool. They could give multiple answers, choosing from 11 items, which also included an option to answer in their own words. The great majority of participants indicated they had used an online mental health tool to get support for feeling low / sad / depressed (81.7%, 89/109), feeling stressed (74.3%, 81/109) or feeling anxious (72.5%, 79/109). A total of 43.1% (47/109) had sought support for feeling suicidal. Responses are presented in detail in Table 10 below.

Table 10 - Issues or experiences for which support was sought through an online mental health tool

	Participants*
	N=109 n (%)
Feeling low / sad / depressed	89 (81.7)
Feeling stressed	81 (74.3)
Feeling anxious	79 (72.5)
Problem sleeping	61 (56.0)
Feeling suicidal	47 (43.1)
Relationship issues	27 (24.8)
Self-harm	21 (19.3)
Eating issues	14 (12.8)
Bereavement	8 (7.3)
Hearing voices	2 (1.8)
Other – please specify:	12 (11.0)
Addiction / alcoholism / substance use	4 (3.7)
Autism as presents in adults	1 (0.9)
Delusion in the Buddhist sense	1 (0.9)
despondent, overwhelmed by issues that i could do nothing to change and difficult to accept	1 (0.9)
Quitting snoking	1 (0.9)
Severe panic attacks. ^a	1 (0.9)
sexual assault / domestic abuse	2 (1.8)
Trouble Sleeping ^b	1 (0.9)

* Participants had multiple responses.

^a This participant had also selected 'Feeling anxious'.

^b This participants had also selected 'Problem sleeping'.

How participants had heard about the online mental health tools they used

Participants were asked to indicate how they had heard about the online mental health tools they had used. They could give multiple answers. The results are given in detail in Table 11 below. The Internet was a popular source of information, with 45.9% (50/109) finding out about an online mental health tool through a search engine and 41.3% (45/109) through a social media site. Finding out through a healthcare professional was the third most common way (25.7%, 28/109), marginally above learning about an online mental health tool from a friend or family member (21.1%, 23/109).

Table 11 - How participants heard about the online mental health tools they used

	Participants*
	N=109 n (%)
Search engine	50 (45.9)
Social media site	45 (41.3)
Healthcare professional	28 (25.7)
Friend or family member	23 (21.1)
College / university	14 (12.8)
Mental health charity	12 (11.0)
Newspaper / magazine article	9 (8.3)
Research article	8 (7.3)
TV / radio	3 (2.8)
Research study advert	1 (0.9)
Health insurance company	0
Other – please specify:	4 (3.7)
Activelink	1 (0.9)
Charity ^a	1 (0.9)
I am a mental health nurse myself and learned about website through uni and work ^b	1 (0.9)
(one participant did not specify)	1 (0.9)
Don't remember	5 (4.6)

* Participants had multiple responses.

^a This participant did not select 'Mental health charity'.

^b This participant had also selected 'College / university'.

Language and cost of online mental health tools, geographical location and setting of the participants at time of use, first time using an online mental health tool, and current use

Participants were asked about a number of additional aspects of the online mental health tools they used, including the language in which they were delivered, the total amount of money they paid to use them, where were they living during the time they were using an online mental health tool (Ireland / anywhere else; urban / rural setting), when they started to use online mental health tools, and whether they were currently using any. A table with the complete breakdown of these data is provided in Appendix K. This section reports the main results.

All but one participant (99.1%, 108/109) indicated that the online mental health tools they used were in the English language. Only two participants indicated they had used an online mental health tool in a different language. Concerning how much they had paid cumulatively to use online mental health tools (i.e. not the cost of the individual online mental health tools), most participants either used such tools at no cost (67%; 73/109) or paid up to 60 Euro (22.9%, 25/109). During the time they used an online mental health tool, almost all participants were located in Ireland (95.4%, 104/109), more than three quarters (79.8%, 87/109) lived in an urban area (in Ireland or elsewhere), while one quarter (26.6%, 29/109) lived in a rural area (in Ireland or elsewhere).¹⁵ Most participants (88.1%, 96/109) had started to use online mental health tools in recent years (up to 4 years before). Finally, at the time of the survey 54.1% (59/109) of participants were using an online mental health tool.

¹⁵ Responses relating to the setting in which the participants lived at the time of their use of online mental health tools add to more than 100% because participants had multiple answers, i.e. they could select either response (urban or rural) or both, as it applied.

Frequency of access to online mental health tools by location, computer device, and time of day

The participants were asked questions to explore usage trends of online mental health tools relative to the locations from which they accessed these tools, the devices they used, and the times during which they accessed the online mental health tools. Specifically, they were asked to indicate the following:

- how often they accessed an online mental health tool from the place where they lived, a different place (e.g. work, college, public library, coffee shop, another person's home, homeless shelter), and while on the move (e.g. commuting or travelling);
- how often they access an online mental health tool from a desktop computer, a laptop, a Smartphone, a Smart TV, and a tablet;
- how often they accessed an online mental health tool between 6 am – 12 noon, 12 noon – 6 pm, 6 pm – 12 am and 12 am – 6 am.

A 5-item frequency scale was employed (*always, frequently, occasionally, rarely, never*).

The home was the location from which participants were most likely to access an online mental health tool, with 85.4% (93/109) doing so regularly (*always* or *frequently*). Only a minority of participants regularly accessed an online mental health tool from another place (19.3%, 21/109) or while on the move (14.7%, 16/109). The Smartphone was the most regularly used device to access online mental health tools, with 73.4% (80/109) of participants doing so *always* or *frequently*. The second most regularly used device was the laptop, with only 28.5% (31/109) of participants using it *always* or *frequently* to access online mental health tools. Most participants *rarely* or *never* accessed online mental health tools from a Smart TV (96.3%, 105/109), tablet (77.1%, 84/109), desktop computer (75.2%, 80/109), or laptop (56.9%, 62/109). Concerning the time of day when participants accessed online mental health tools, the majority did so in the evening to night-time (6 pm – 12 am), with 65.1% (54/109) doing so *always* or *frequently*. People were much less likely to access an online mental health tool in the afternoon to evening time (12 noon – 6 pm), in the

morning (6 am – 12 noon), or during the night to early morning time (12 am – 6 am). Table 12 below provides a detailed breakdown of these data.

Table 12 - Access to online mental health tools from home, other (fixed) place, and while on the move, by frequency of access

Frequency of access to online mental health tools by location, N = 109						
Location	<i>Always</i> <i>n (%)</i>	<i>Frequently</i> <i>n (%)</i>	<i>Occasionally</i> <i>n (%)</i>	<i>Rarely</i> <i>n (%)</i>	<i>Never</i> <i>n (%)</i>	Missin g
Home / place where they lived most of the time	55 (50.5)	38 (34.9)	12 (11.0)	4 (3.7)	0	/
Any other place	4 (3.7)	17 (15.6)	21 (19.3)	21 (19.3)	46 (42.2)	/
On the move	3 (2.8)	13 (11.9)	16 (14.7)	20 (18.3)	57 (52.3)	/
Frequency of access to online mental health tools by computed device used, N = 109						
Computer device	<i>Always</i> <i>n (%)</i>	<i>Frequently</i> <i>n (%)</i>	<i>Occasionally</i> <i>n (%)</i>	<i>Rarely</i> <i>n (%)</i>	<i>Never</i> <i>n (%)</i>	Missin g
Desktop computer	7 (6.4)	10 (9.2)	9 (8.3)	19 (17.4)	63 (57.8)	1 (0.9)
Laptop	15 (13.8)	16 (14.7)	15 (13.8)	15 (13.8)	47 (43.1)	1 (0.9)
Smartphon e	54 (49.5)	26 (23.9)	12 (11.0)	5 (4.6)	11 (10.1)	1 (0.9)
Smart TV	0	0	1 (0.9)	5 (4.6)	100 (91.7)	3 (2.8)
Tablet	4 (3.7)	7 (6.4)	11 (10.1)	15 (13.8)	69 (63.3)	3 (2.8)
Frequency of access to online mental health tools by time of day, N = 109						
Time of day	<i>Always</i> <i>n (%)</i>	<i>Frequently</i> <i>n (%)</i>	<i>Occasionally</i> <i>n (%)</i>	<i>Rarely</i> <i>n (%)</i>	<i>Never</i> <i>n (%)</i>	Missin g
6 am – 12 noon	2 (1.8)	20 (18.3)	29 (26.6)	28 (25.7)	27 (24.8)	3 (2.8)
12 noon – 6 pm	2 (1.8)	27 (24.8)	31 (28.4)	26 (23.9)	19 (17.4)	4 (3.7)
6 pm – 12 am	17 (15.6)	54 (49.5)	22 (20.2)	7 (6.4)	7 (6.4)	2 (1.8)
12 am – 6 am	3 (2.8)	21 (19.3)	21 (19.3)	22 (20.2)	39 (35.8)	3 (2.8)

Frequency of occurrence of events that may hinder the use of an online mental health tool

Participants were shown a list of ten events that they might have experienced while using an online mental health tool. They were asked to indicate how frequently they experienced each event (*always, frequently, occasionally, rarely, never*). The ten events were chosen because of their potential to hinder the use of an online mental health tool. Table 13 below shows what the events were and the participants' responses. For most participants these events were occasional to never occurrences, but a few results stood out. The event experienced most often was being distracted by notifications from apps while using an online mental health tool, with 26.6% (29/109) of participants experiencing it *frequently* or *always*. There followed those who *frequently* or *always* experienced issues with the quality of their Internet connection while using an online mental health tool, which included *poor mobile network signal* (11%, 12/109) and *poor Internet signal* (9.2%, 10/109). Cumulatively, 13.8% (15/109) experienced either issue *frequently* or *always*. Few participants (up to 6.5%) regularly (*frequently* or *always*) experienced any of the remaining events (features of online mental health tools that not working properly, not having enough privacy while using an online mental health tool, reaching the maximum amount of data allowed on their Internet plan, limited options to recharge the battery of their computer device, limited options to access the Internet or a computer device, or other technical difficulties).

Table 13 - Occurrence of events that may hinder the use of an online mental health tool

Event**	<i>Always</i> n (%)	<i>Frequently</i> n (%)	<i>Occasionally</i> n (%)	<i>Rarely</i> n (%)	<i>Never</i> n (%)	Missing
Features of an OMHSHP not working properly	3 (2.8)	4 (3.7)	27 (24.8)	42 (38.5)	32 (29.4)	1 (0.9)
Not having enough privacy while using an OMHSHP	1 (0.9)	5 (4.6)	16 (14.7)	36 (33.0)	50 (45.9)	1 (0.9)
Having poor Internet signal while using an OMHSHP	1 (0.9)	9 (8.3)	28 (25.7)	32 (29.4)	38 (34.9)	1 (0.9)
Having poor mobile network signal while using an OMHSHP	2 (1.8)	10 (9.2)	22 (20.2)	32 (29.4)	42 (38.5)	1 (0.9)
Being distracted by notifications from apps while using an OMHSHP	1 (0.9)	28 (25.7)	39 (35.8)	18 (16.5)	22 (20.2)	1 (0.9)
Reaching the maximum amount of data allowed on your Internet plan affected when you could use an OMHSHP	1 (0.9)	6 (5.5)	9 (8.3)	17 (15.6)	75 (68.8)	1 (0.9)
Limited options to charge the battery of your computer device affected when you could use an OMHSHP	1 (0.9)	6 (5.5)	16 (14.7)	25 (22.9)	60 (55.0)	1 (0.9)
Limited options for Internet access affected when you could use an OMHSHP	1 (0.9)	5 (4.6)	14 (12.8)	25 (22.9)	63 (57.8)	1 (0.9)

Limited options to access a computer device affected when you could use an OMHSHP	3 (2.8)	2 (1.8)	9 (8.3)	22 (20.2)	72 (66.1)	1 (0.9)
Other technical difficulties encountered while using an OMHSHP	0	5 (4.6)	10 (9.2)	29 (26.6)	64 (58.7)	1 (0.9)

** The events were taken verbatim from the online questionnaire, where the term OMHSHP (online mental health self-help programme) was used. Please see explanation provided in section 4.4 of the Methodology Chapter.

5.3.2.3 Mental health interventions received

Participants were not asked about whether they had ever received a mental health diagnosis. However, to determine whether they had had contact with mental health services beside using online mental health tools, they were asked what mental health interventions, if any, they had ever received for their mental health problems. Participants were provided with a list of 11 mental health interventions, including an option to write a response in their own words, and could give multiple answers. The great majority of participants (78.9%, 86/109) had received two or more of these interventions, while 8.3% (9/109) indicated not having received any of them.

Participants' responses are shown in detail in Table 14 below. The great majority of participants (84.4%, 92/109) had received talking therapy. Virtually all of these individuals (98.9%, 91/92) had done talking therapy in person, and a few online (16.4%, 16/92). Medication was the second most commonly received intervention, reported by 63.3% (69/109) of participants. There followed peer support / self-help groups, indicated by 43.1% (47/109) of participants, most of which had attended such groups in person (78.7%, 37/47). There were also many who had attended peer support / self-help groups online (44.7%, 21/47).

Table 14 - Mental health interventions received by participants

	Participants
Mental health interventions*	N=109 n (%)
Talking therapy (in-person or online)	92 (84.4)
Medication	69 (63.3)
Peer support / self-help group (in-person or online)	47 (43.1)
Holistic / alternative therapy	37 (33.9)
Day hospital / outpatient care	33 (30.3)
Community mental health nurse visit	21 (19.3)
Hospitalisation / inpatient care	20 (18.3)
ECT (electro-convulsive therapy)	2 (1.8)
Other – please specify:	7 (6.4)
CBT ^a	1 (0.9)
GP	1 (0.9)
GP also	1 (0.9)
GP support	1 (0.9)
GP, on campus occupational therapist	1 (0.9)
I discovered Jesus. This gave me super lease of life, honest.	1 (0.9)
Mindfulness-based cognitive behavioural therapy with an emphasis on behaviour ^b	1 (0.9)
None of the above	9 (8.3)
Talking therapy	N=92 n (%)
In-person talking therapy (individual or group)	91 (98.9)
Online talking therapy (therapy delivered via email, instant messaging, or Skype video-calls; individual or group)	16 (16.4)
Peer support / self-help group	N=47 n (%)
In-person peer support / self-help group	37 (78.7)
Online peer support / self-help group	21 (44.7%)
Number of mental health interventions received by each participant	N=109 n (%)
0 MH interventions	9 (8.3)
1 MH intervention	14 (12.8)
2 MH interventions	18 (16.5)
3 MH interventions	27 (24.8)

4 – 5 MH interventions	26 (23.8)
6 – 10 MH interventions	15 (13.7)

* Participants had multiple responses.

^a This participant also indicated receiving talking therapy (in-person).

^b This participant also indicated receiving talking therapy (in-person).

The 100 participants who had received at least one mental health intervention were asked two additional questions. The first question was whether they did or did not receive the mental health interventions before they started to use any online mental health tools. In total, 85% (85/100) of these participants (or 78% of the whole sample) had received at least one intervention before starting to use any online mental health tools. The second question asked of the 100 participants was whether they did or did not use an online mental health tool at the same time as they were receiving a mental health intervention. The same amount of participants as above, 85% (85/100), indicated having done so. Thus, most participants had already received at least one other mental health intervention before they started to use any online mental health tools and had used these tools alongside at least one other intervention. Conversely, 15% (15/100) did not receive any other mental health intervention before ever starting to use online mental health tools.

The responses to the two questions are presented in detail in Tables 15 and 16 below. For each mental health intervention, the Tables shows how many participants did or did not receive that intervention before starting to use any online mental health tools (Table 15) and how many participants did or did not use an online mental health tool at the same time as they were receiving that intervention (Table 16). The percentages are relative to the number of participants who ever received a given intervention (e.g. there were 21 participants who received community mental health nurse visits; of these 21 a total of 61.9% (13/21) received this intervention before starting to use any online mental health tools).

Table 15 - Participants who did / did not receive a mental health intervention before starting to use any online mental health tools

	Participants who received the mental health intervention before starting to use any online mental health tools	Participants who did not receive the mental health intervention before starting to use any online mental health tools
Mental health interventions	n (%)	n (%)
Talking therapy, in-person N=91	63 (69.2)	28 (30.8)
Medication N=69	53 (76.8)	16 (23.2)
Peer support / self-help group, in-person N=37	23 (62.2)	14 (37.8)
Holistic / alternative therapy N=37	23 (62.2)	14 (37.8)
Day hospital / outpatient care N=33	23 (69.7)	10 (30.3)
Community mental health nurse visit N=21	13 (61.9)	8 (38.1)
Peer support / self-help group, online N=21	9 (42.9)	12 (57.1)
Hospitalisation / inpatient care N=20	13 (65)	7 (35)
Talking therapy, online N=16	3 (18.8)	13 (81.2)
ECT N=2	1 (50)	1 (50)
Other N=7	5 (71.4)	2 (28.6)

Table 16 - Participants who used / never used an online mental health tool at the same time as they were receiving a mental health intervention

Mental health interventions	Participants who used an online mental health tool at the same time as they were receiving a mental health intervention	Participants who never used an online mental health tool at the same time as they were receiving a mental health intervention
	n (%)	n (%)
Talking therapy, in-person N=91	63 (69.2)	28 (30.8)
Medication N=69	54 (78.3)	15 (21.7)
Peer support / self-help group, in-person N=37	22 (59.5)	15 (40.5)
Holistic /alternative therapy N=37	28 (75.7)	9 (24.3)
Day hospital / outpatient care N=33	16 (48.5)	17 (51.5)
Community mental health nurse visit N=21	12 (57.1)	9 (42.9)
Peer support / self-help group, online N=21	15 (71.4)	6 (28.6)
Hospitalisation / inpatient care N=20	7 (35.0)	13 (65.0)
Talking therapy, online N=16	12 (75.0)	4 (25.0)
ECT N=2	0	2 (100)
Other N=7	6 (85.7)	1 (14.3)

The analysis of the questionnaire qualitative data yielded three main themes. The themes ‘Helpful aspects of online mental health tools’ and ‘Unhelpful aspects of online mental health tools’ were presented in section 5.3.2.2 where they helped bring to life participants’ ratings of the usefulness of online mental health tools. The third and last theme, ‘Scope of online mental health tools’, helps bring to life some of the quantitative results presented in the present section. This theme consists of comments that express participants’ views of

the role of online mental health tools as a source of mental health support, including in relation to traditional treatments. There were two main ways in which this was achieved: by comparing online mental health tools with traditional treatments and services and by commenting on the use of online mental health tools at different stages of recovery. These are described below. A visual overview of the theme with its subthemes is provided in Appendix L.

In their comparisons of online mental health tools with traditional treatments and services, some participants talked positively about using online mental health tools alongside or as an adjunct to traditional treatments.

My CB therapist recommended Headspace the second time I saw her, and that's why I began to use it. I also began the holistic therapies she suggested. A year on, I am still having therapy and using Headspace and using the recommended holistic/alternative therapies. [25]

I found the apps I used effective when used in combination with the other treatments that I was undertaking [14]

Other participants commented on using online mental health tools when treatment is not (immediately) available or accessible. Some participants welcomed this use of online mental health tools, which provided them with needed support in time of need. For example, one participant stated:

I have found OMHSPs to be really helpful. They are a great intervention in that easily accessible for me at any time of day. It eases anxiety I would have felt previously over knowing I would have to wait and put up with a mental health issue alone before seeing someone in person. It's good to have other resources to help see me through. [...] (17)

For another participant, online mental health tools were not only a useful alternative to unavailable in-person help, but an option with its own advantages:

I find them incredible useful and accessible- as in-person help isn't available 24/7, or if it is this is just more comfortable and easier. [9]

As an alternative to unavailable in-person help, online mental health tools did not substitute traditional treatments, rather they filled the gaps created by waiting lists, lack of affordable treatments, and failure to provide resolute help. As shown in the previous quotes, some participants welcomed this. Likewise, another participant stated:

I started using this kind of programmes after I had been discharged by the Public Mental Health service without a satisfactory diagnosis or resolute interventions. I must say they helped me better understand what my problems could be. I required a further assessment for mental health based on my findings and, even if I am still in the process, it looks like they helped me get much closer to a diagnosis that I have been before. [...] [23]

By contrast, other participants emphasised that online mental health tools were an inferior alternative to traditional face-to-face treatment.

OHHSPPS useful if I had no access to face to face meetings. However, online is very poor in quality and effect compared to face to face support. I would rate it as 1/10 as good, at best possibly, due to lack of real engagement, attention and mobilisation. [35]

[...] Meditation, experiences of others, etc can be very helpful but if comparing the Aware online service to real life talk therapy, it falls very short. Nothing can replace real life talking. [...] I'm currently not working but paying for private psychotherapy. It's been excellent, no amount of online services can replace a good real life therapist. [8]

Beside comparisons of online mental health tools with traditional support services, the 'Scope of online mental health tools' theme also had another sub-theme. This included comments that remarked on using online mental health tools during different stages of one's care. Participants wrote about using online mental health tools while in crisis or outside of crisis, for maintenance after stopping other treatment, or as a first port of call.

[...] I found the period of time I first began using omhshps was in crisis. I'm no longer in crises (Alcoholism) but I now use omhshps for maintenance. I strongly believe that intervention stage these ARE vital. But continued use albeit at a slower pace is important to maintain good mental health and sustain recovery. [36]

The headspace app has helped me maintain a relatively stable standard of mental health since I came off medication and stopped doing talk therapy. [37]

[...] When I was very unwell on line sides didn't help me and I needed professional face to face care. I rarely if ever visit any mental health sites in the last 3 years' but would be my first port of call if I felt depression resurfacing in my life. [11]

5.3.2.4 General Internet use

The participants were asked a number of questions around their general use of the Internet, including how long they had been using the Internet, how often they went online, what computer devices they went online from and had access to, and what locations they went online from. They were also asked about their level of engagement with a number of online activities. These data were collected to get an idea of the presence of the Internet in people's daily life.

In total, 78.0% (85/109) of participants had been using the Internet for 10 years or more. An additional 16.5% (18/109) had been using the Internet for 5 – 9 years. The wider breakdown of these data is presented in Table 17 below. All 109 participants went online every day or almost every day.

Table 17 - When respondents started to use the Internet and how often they go online

	Participants
When respondents started to use the Internet	N=109 n (%)
In the last year	0
2 years ago	1 (0.9)
3-4 years ago	3 (2.8)
5-9 years ago	18 (16.5)
10 years ago or more	85 (78.0)
Don't remember	2 (1.8)
Frequency of Internet use	N=109 n (%)
Every day / almost every day	109 (100)

Almost everyone (98.2%, 107/109) used a Smartphone to go online. There followed 74.3% (81/109) of participants who went online on a laptop. Less than half of participants went online on a desktop computer (41.3%, 45/109) or tablet (40.4%, 44/109). Similar proportions of participants owned or had personal access to these devices. Most participants owned or had personal access to 2 – 4 devices and used 2 or 3 to go online. By contrast, a combined total of 13.8% (15/109) of participants indicated going online from only one device or owning / having personal access to only one device, which in all such cases but one was a smartphone. One third of these people (33.3%, 5/15) both relied on their smartphone for online access and did not have any other device. A detailed breakdown of the data is provided in Table 18 below.

Table 18 - Computer devices used to go online and owned / available for personal access

	Participants
Computer devices used to go online*	N=109 n (%)
Smartphone	107 (98.2)
Laptop	81 (74.3)
Desktop computer	45 (41.3)
Tablet	44 (40.4)
Smart TV	26 (23.9)
Number of computer devices the participants used to go online	N=109 n (%)
1	11 (10.1)
2	37 (33.9)
3	34 (31.2)
4	19 (17.4)
5	8 (7.3)
Computer devices owned / available for personal access*	N=109 n (%)
Smartphone	107 (98.2)
Laptop	84 (77.1)
Tablet	49 (45.0)
Desktop computer	42 (38.5)
Smart TV	42 (38.5)
Missing	1 (0.9)
Number of computer devices the participants owned or had available for personal access	N=109 n (%)
1	9 (8.3)
2	30 (27.5)
3	31 (28.4)
4	28 (25.7)
5	10 (9.2)
Missing	1 (0.9)

* Participants had multiple responses.

Participants were also asked if they went online at home (or place where they lived most of the time) and what type of connection they used to do so. As shown in Table 19, nearly everyone went online at home (97.2%, 106/109), mainly by connecting to Broadband / wi-fi Internet connection (92.5%, 98/106), followed by using the data plan on their Smartphone (60.4%, 64/106).

Table 19 - Going online at home

	Participants
Going online at home	N=109 n (%)
Yes	106 (97.2)
No	3 (2.8)
Type of connection used when going online at home*	N=106 n (%)
Broadband / wi-fi	98 (92.5)
Smartphone data plan	64 (60.4)
Dongle / mobile wi-fi hotspot	5 (4.7)
Other – please specify	0
Reasons for not going online at home*	N=3 n (%)
I don't need to go online at home very much / at all	2 (66.7)
Too busy / no time	2 (66.7)

* Participants had multiple responses.

In addition to their Internet use at home, the participants were asked whether they went online from a number of out-of-home locations. A total of 90.8% (99/109) of participants indicated going online from one or more of these locations, in particular while on the move (72.5%, 79/109), from / at a coffee shop (64.2%, 70/109), and from another person's home (60.6%, 66/109). Approximately half of participants went online from their place of work (53.2%, 58/109) or study (45.9%, 50/109). Fewer went online from the remaining locations (public library, Internet café', community center, homeless center). A breakdown of the data is shown in Table 2 below.

Table 20 - Out-of-home locations from which participants went online

	Participants*
	N=109 n (%)
On the move	79 (72.5)
Coffee shop	70 (64.2)
Another person's home	66 (60.6)
Workplace	58 (53.2)
College / university	50 (45.9)
Public library	28 (25.7)
Internet cafe ⁱ	8 (7.3)
Community center	6 (5.5)
Homeless shelter	1 (0.9)
Other – please specify:	3 (2.8)
almost anywhere....i have an internet bundle on my smartphone also ^a	1 (0.9)
At home. ^b	1 (0.9)
I have my own router ^c	1 (0.9)
None of the above	10 (9.2)

* Participants had multiple responses.

The 99 participants who went online from one or more out-of-home locations were also asked to indicate, for each location, what connection they used to do so. Table 21 below show that most participants used either their own mobile data plan (e.g. on their Smartphone) or connected to the wi-fi available at the location. The percentages are relative to the sample size for each location.

Table 21 - Ways of accessing the Internet by location

	Uses own mobile data plan (e.g. on Smartphone, dongle)	Connects own computer device to wi-fi at the location	Uses computer device available at the location and already connected to Internet there	Missing
Location	n (%)	n (%)	n (%)	n (%)
On the move N=79	71 (89.9)	26 (32.9)	1 (1.3)	0
Coffee shop N=70	54 (77.1)	48 (68.6)	1 (1.4)	1
Another person's home N=66	45 (68.2)	44 (66.7)	4 (6.1)	0
Workplace N=58	34 (58.6)	31 (53.4)	26 (44.8)	0
College / university N=50	30 (60.0)	34 (68.0)	13 (26.0)	0
Public library N=28	11 (39.3)	21 (75.0)	8 (28.6)	0
Internet cafe' N=8	1 (12.5)	5 (62.5)	2 (25.0)	0
Community center N=6	2 (33.3)	5 (83.3)	0	0
Homeless shelter N=1	-	-	-	1 ^a
Other N=3	3 (100)	3 (100)	3 (100)	0

Participants had multiple responses.

Finally, participants were asked how often they engaged in a number of online activities, including using the Internet for communication purposes (e.g. emails, instant messaging), information searching, accessing services (e.g. buying and selling, banking, government services), engaging with video or audio content (e.g. watching, listening, downloading) and engaging with social media and other such platforms (e.g. online forums, chatrooms,

blogs). The complete data are presented in Appendix K. This section highlights the main results.

Not surprisingly, the great majority of participants used emails (98.2%, 107/109) and Instant Messaging (95.4%, 104/109) at least once a week¹⁶, with approximately 90% using them every day or almost every day. Regular use of Internet voice / video calls was less common among participants, with 57.8% (63/109) doing so at least once a week.

Most participants used the Internet for information purposes regularly (at least once a week). They did so for a variety of reasons, including searching information for work or study (91.8%, 100/109), looking at news websites / apps (82.5%, 90/109), and searching information about products or services (79.8%, 87/109) as well as leisure activities or local events (74.3%, 81/109).

Accessing services online (e.g. buying / selling products, banking, paying bills, using government services) occurred less frequently, with less than half of the participants (up to 43.1%) doing so at least once a week. Participants were more likely to bank and pay bills online than buy things, with 43.1% (47/109) versus 29.3% (32/109) doing so at least once a week.

Concerning the consumption of online video and audio content, most participants watched or listened to content online at least once a week, including watching videos on platforms such as YouTube or Vimeo (87.1%, 95/109), films or TV programmes (71.5%, 78/109), and listening to radio, music, or podcasts (78%, 85/109). Downloading video and audio content or apps were less frequent occurrences.

Finally, the great majority of participants looked at social media sites at least once a week (91.7%, 100/109), for the most part every day or almost every day (78.9%, 86/109). Posting

¹⁶ This includes participants who selected *At least once a week (but not every day)* or *Every day / almost every day*.

on social media sites was undertaken less regularly, with 56.9% (62/109) doing so at least once a week. Engaging with other online platforms (discussion forums, blogs, chatrooms, vlogs) was a less frequent activity across the sample. Looking at online discussion forums was the most widespread of these, with 43.2% (47/109) of participants doing so at least once a week. Most of the activities with the lowest level of engagement (i.e. that most participants never did) involved creating / posting content online (as opposed to looking at content), e.g. posting a vlog or blog and posting on chat rooms or online forums.

5.3.2.5 Internet use for health and mental health related reasons

Continuing on the topic of daily Internet use, the participants were asked about their use of the Internet more specifically for health and mental health related reasons, focusing particularly on the latter. Information about Internet use for health reasons was collected by asking the participants how frequently they searched online for information around health. Information on Internet use for mental health reasons included the frequency of searching online for information around mental health, the resources used to conduct such searches, posting mental health content online, and other activities such as reading about others' experience of mental health problems.

Searching online for health and mental health related information

Approximately half of participants (51.3%, 56/109) regularly searched online for information about health (*At least once a week (but not every day) or Every day or almost every day*). Fewer (44.1%, 48/109) regularly searched online for information about mental health / mental health problems.

Table 22 - Frequency of looking online for information about health and mental health

	<i>Every day or almost every day</i>	<i>At least once a week (but not every day)</i>	<i>At least once a month (but not every week)</i>	<i>Less than once a month</i>	<i>Never</i>
Online activity	n (%)	n (%)	n (%)	n (%)	n (%)
Searching online for health related information N=109	13 (11.9)	43 (39.4)	33 (30.3)	17 (15.6)	3 (2.8)
Searching online for information about mental health / mental health problems N=109	10 (9.2)	38 (34.9)	35 (32.1)	25 (22.9)	1 (0.9)

With the exception of the one participant who indicated never searching online for mental health related information, everyone else (N = 108) was also asked how they began their online searches for mental health information. Table 23 below shows that the great majority started their searches on a search engine (89.8%, 97/108) or a mental health related website (58.3%, 63/108). Social media ranked third with 25.9% (28/108) of participants beginning their online searches for mental health information in this way.

Table 23 - How participants began their online searches for mental health information

	Participants*
	N=108 n (%)
Search engine (e.g. Google, Bing, Yahoo)	97 (89.8)
Mental health related website	63 (58.3)
Social media site	28 (25.9)
Online discussion forum	13 (12.0)
Wikipedia	10 (9.3)
Blog	5 (4.6)
Chat room	1 (0.9)
Other – please specify Recommendations from mental health team	1 (0.9)

* Participants had multiple responses.

Posting mental health related content online

Alongside being asked about their online searches for mental health information, the participants were asked whether they posted mental health related content online, such as comments, questions or information about mental health / mental health problems or their own personal experience with mental health / mental health problems. The data are presented in detail Table 24 below.

In total, 44% (48/109) of participants had posted content to do with mental health. These participants were asked additional questions about what content they posted and where. Most had posted about their personal experience with mental health (79.2%, 38/48) or in response to posts about mental health from other people (72.9%, 35/48). Concerning the audience of their posts, most participants (75%, 36/48) shared mental health content with an audience of people with mental health problems similar to theirs, and were less likely to post where their posts would be seen by a more general audience of friends or other internet users (41.7%, 20/48) or to get feedback from a health / mental health professional (25%, 12/48). When asked about the sites on which they posted mental health content, most participants said they posted on social media sites (62.5%, 30/48), followed by online discussion forums (41.7%, 20/48). Fewer participants shared mental health content on other platforms.

Table 24 - Posting mental health related content online

	Participants
Posting mental health related content online	N=109 n (%)
Yes	48 (44.0)
No	61 (56.0)
Type of mental health content posted online*	N=48 n (%)
Comments or stories about your personal experience with mental health / mental health problems	38 (79.2)
Comments or information in response to others' posts or questions about mental health / mental health problems	35 (72.9)
Specific questions about mental health / mental health problems	23 (47.9)
Other	3 (6.3)
Where participants posted mental health related content posted online (target audience)*	N=48 n (%)
Somewhere it would be seen by an audience of people with mental health problems similar to yours	36 (75.0)
Somewhere it would be seen by a more general audience of friends or other internet users	20 (41.7)
Somewhere specifically to get feedback from a health / mental health professional	12 (25.0)
Other	2 (4.2)
Type of sites where participants posted mental health related content*	N=48 n (%)
Social media site	30 (62.5)
Online discussion forum	20 (41.7)
Website that allows comments	14 (29.2)
Blog	7 (14.6)
Your personal blog / website / channel	6 (12.5)
Chat room	2 (4.2)
Other	2 (4.2)

* Participants had multiple responses.

Other mental health related online activities

Finally, participants were asked how often they engaged in three additional activities which involved accessing mental health content online. Their responses are presented in Table 25 below. Less than one third of participants regularly engaged in these activities (*At least once a week (but not every day) or Every day or almost every day*), which included receiving email updates about issues related to mental health (27.5%, 30/109) and following someone else's personal mental health updates on social media (28.5%, 31/109) or other platforms (30.3%, 33/109). Most participants engaged in these activities irregularly (less than once a month) or never.

Table 25 - Frequency of other mental health related activities done online

	<i>Every day or almost every day</i>	<i>At least once a week (but not every day)</i>	<i>At least once a month (but not every week)</i>	<i>Less than once a month</i>	<i>Never</i>
Online activity	n (%)	n (%)	n (%)	n (%)	n (%)
Receiving email updates about issues related to mental health / mental health problems N=109	12 (11.0)	18 (16.5)	23 (21.1)	23 (21.1)	33 (30.3)
Follow someone else's mental health experiences / updates on social media N=109	10 (9.2)	21 (19.3)	15 (13.8)	17 (15.6)	46 (42.2)
Look at someone else's commentary or experience about mental health / mental health problems on an online forum, blog, chat room or website N=109	12 (11.0)	21 (19.3)	15 (13.8)	26 (23.9)	35 (32.1)

5.4 Association analyses

5.4.1 Data analysis

This section presents the results of the analyses of associations that were conducted to deepen the exploration of aspects of participants' use of online mental health tools and their use of the Internet for mental health related reasons. Several relationships between categorical and ordinal variables of interest were explored using the Chi-Square test for independence and the Mann-Whitney U test.

The Chi-Square test for independence was used to explore possible differences in the frequency distribution of categorical variables, including between the issues / experiences for which support was sought through an online mental health tool and the reasons for using an online mental health tool; between participants' sexual orientation and the reasons for using an online mental health tool; and between participants' demographics and posting mental health content online. All Chi-Square tests were between two variables, each consisting of two categories (2 x 2 contingency tables). The significance test of the Chi-Square statistic is affected when a cell of a 2 x 2 table has expected frequency of less than 5. In line with recommendations from several authors (e.g. Allen et al., 2019; Field, 2018; Howell, 2013), the remedy adopted in this study was to consider Fisher's Exact Test instead of the Chi-Square p-value when a cell had low expected frequency.

The Mann-Whitney U test was used to explore whether there was a relationship between categorical and ordinal variables. The Mann-Whitney U test converts the scores of an ordinal or scale variable to ranks (i.e. the scores are ranked from lowest to highest) and looks at differences in the ranked data between the groups that make up the categorical variable. The associations that were explored using the Mann-Whitney U test were between the reasons for using an online mental health tool and the time of day during

which an online mental health tool was used, and between participants' demographics and the frequency of looking for health and mental health information online.

All the Chi-Square tests for independence and Mann-Whitney U tests were two-tailed (i.e. no assumptions were made about the direction of the associations) and the level of significance (α) was set at .05. The index of effect size for the Chi-Square test of independence is phi. The effect size for the Mann-Whitney U test was obtained by converting z into r :

$$r = z / \text{square root of } N \text{ (} z \text{ value divided by the square root of the total number of cases) (Pallant, 2016, p. 233)}$$

This calculation was done manually as SPSS does not provide an effect size statistic for Mann-Whitney U test. Both phi and r were interpreted using Cohen's (1988) criteria of .10 for small effect, .30 for medium effect and .50 for large effect.

There were minimal missing data, involving five variables out of the 42 included in the analyses of associations. The total number of participants with missing data was 6. The individual participants were missing data on a maximum of 3 items each (7.1% of variables). The individual variables were missing data on a maximum of 4 participants (3.7% of the sample). Except for one case, all the other cases of missing data occurred in the variables that measured how frequently online mental health tools were accessed during four different times of the day (each time being a variable) (see section 5.3.2.2, Table 12, for the frequency count of valid and missing responses). Missing data were dealt with using pairwise deletion in SPSS to exclude them from the analyses.

5.4.2 Results

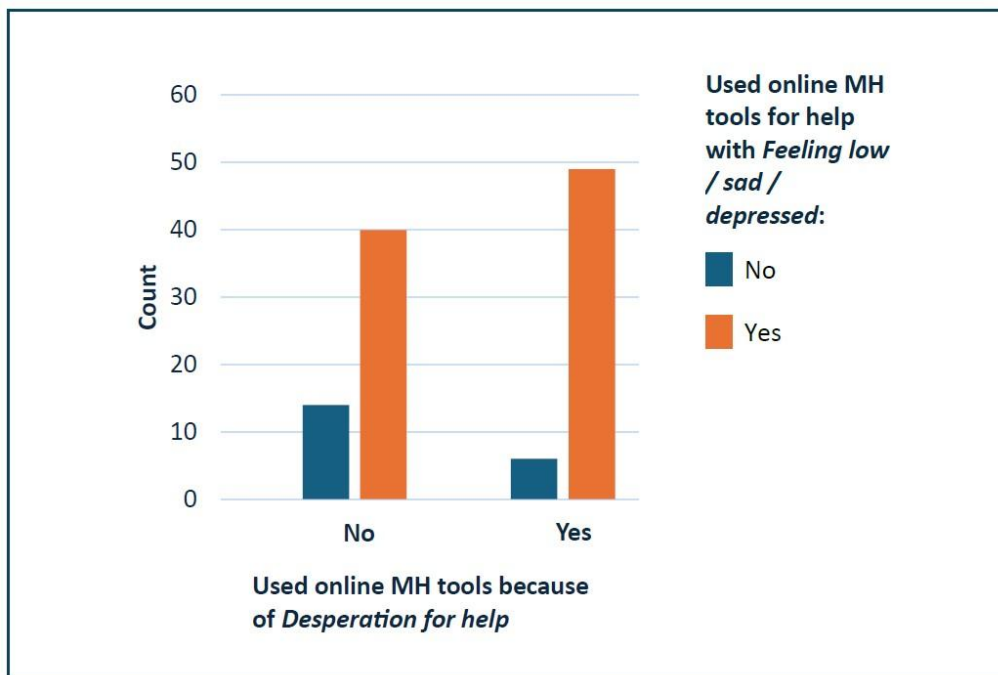
Chi-Square test between issues for which support was sought and reasons for using an online mental health tool

Analyses of association were carried out to explore if there was a relationship between 8 issues for which support was sought through an online mental health tool and 17 reasons for using an online mental health tool. Three additional issues and 4 additional reasons had a count of 8 or less and were excluded from the analysis.

All variables consisted of two categories (ticked / not ticked). All possible pairwise cross-tabulations were explored using the Chi-Square test for independence to compare frequency distributions. The results of the Chi-Square tests for independence are reported in Table 26. This section captures the results that are pertinent to the study aims.

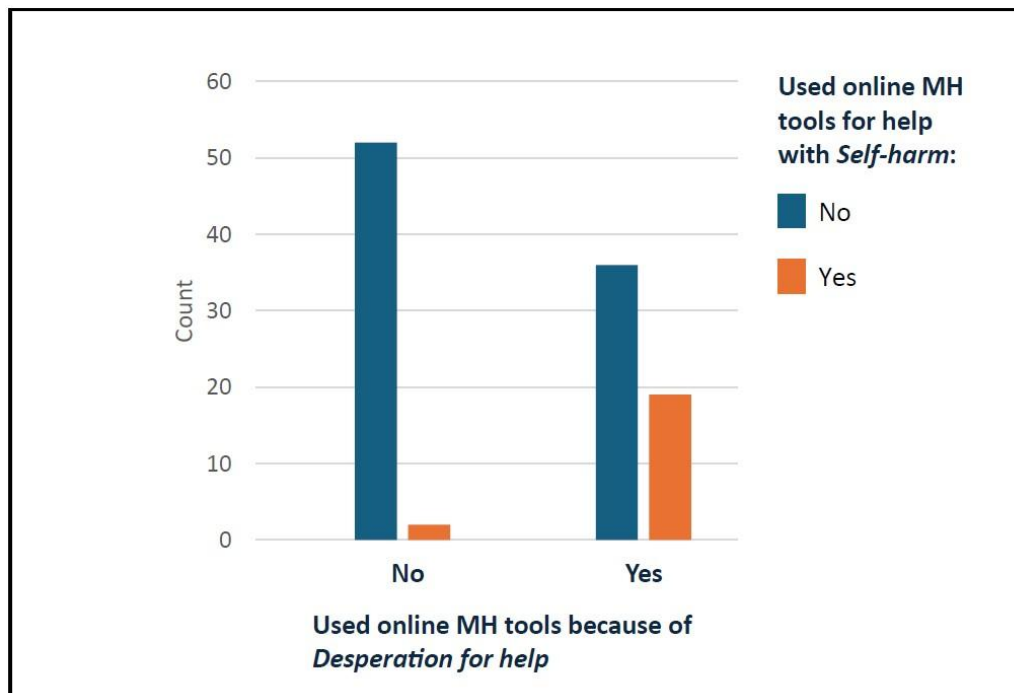
First, a statistically significant relationship was found between using an online mental health tool because of *Desperation for help* and using an online mental health tool for *Feeling low / sad / depressed* ($\chi^2 (1, N = 109) = 4.101, p = .043$), *Self-harm* ($\chi^2 (1, N = 109) = 16.663, p = .000$), *Feeling suicidal* ($\chi^2 (1, N = 109) = 10.270, p = .001$) and *Eating issues* ($\chi^2 (1, N = 109) = 5.078, p = .024$). The strength of the associations was moderate for *Self-harm* ($\phi = .391$) and *Feeling suicidal* ($\phi = .307$) and weak for *Eating issues* ($\phi = .216$) and *Feeling low / sad / anxious* ($\phi = .194$). As illustrated in Figure 5 to Figure 8 below, participants who used an online mental health tool because of *Desperation for help* were significantly more likely to have used an online mental health tool for support with *Feeling low / sad / depressed*, *Self-harm*, *Feeling suicidal* and *Eating issues*.

Figure 5 - Bar chart showing people who did / did not use an online mental health tool because of *Desperation for help* and for support with *Feeling low / sad / depressed*



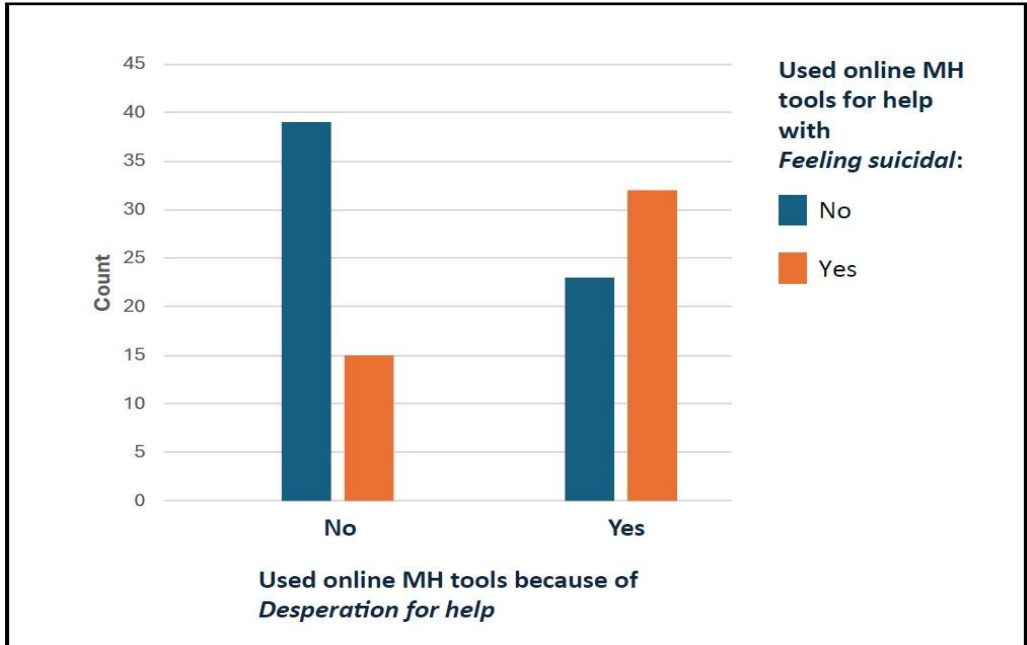
MH – mental health

Figure 6 - Bar chart showing people who did / did not use an online mental health tool because of *Desperation for help* and for support with *Self-harm*



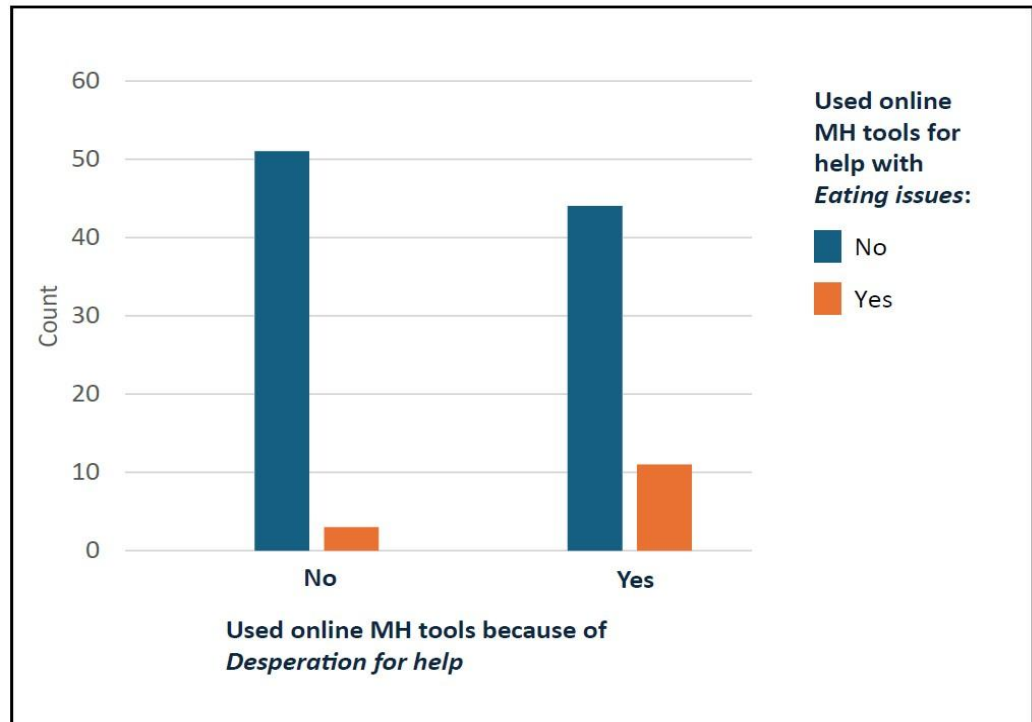
MH – mental health

Figure 7 - Bar chart showing people who did / did not use an online mental health tool because of Desperation for help and for support with Feeling suicidal



MH – mental health

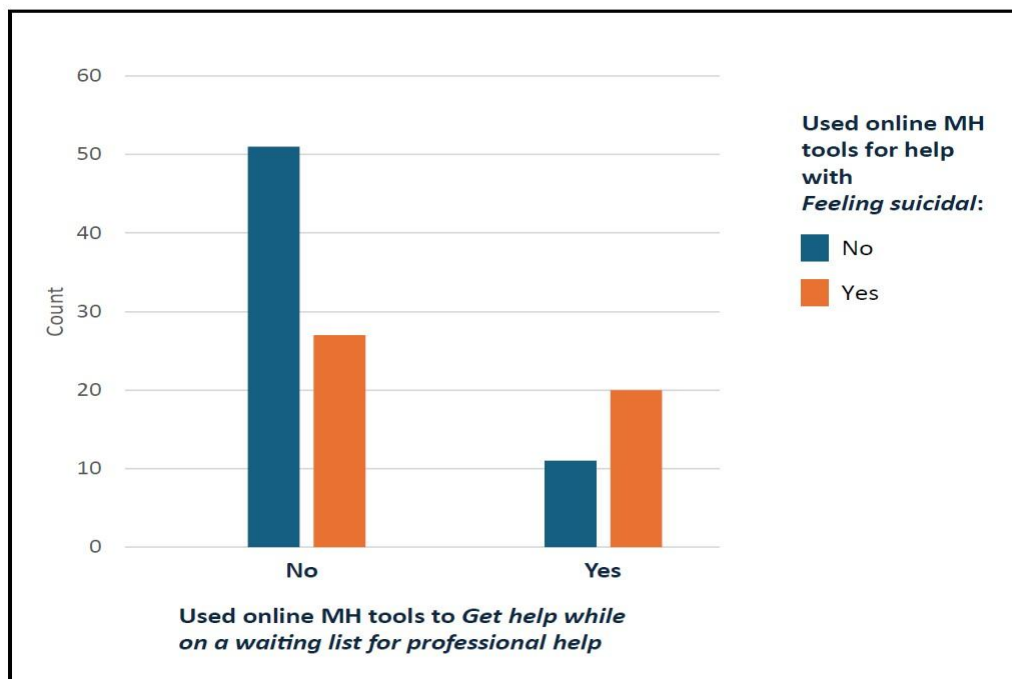
Figure 8 - Bar chart showing people who did / did not use an online mental health tool because of Desperation for help and for support with Eating issues



MH – mental health

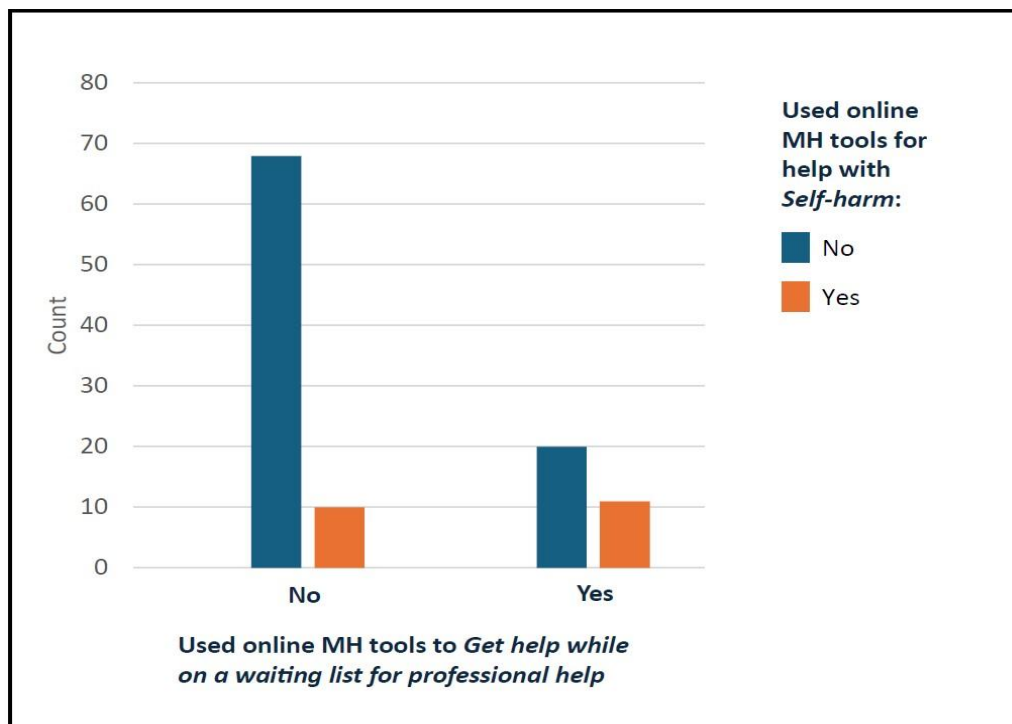
Second, a statistically significant relationship was found between using an online mental health tool to get help while on a waiting list for professional help and using an online mental health tool to get support with *Feeling suicidal* ($\chi^2 (1, N = 109) = 8.086, p = .004$) and *Self-harm* ($\chi^2 (1, N = 109) = 7.325, p = .007$). The strength of the associations was weak for both *Feeling suicidal* ($\phi = .272$) and *Self-harm* ($\phi = .259$). Figures 9 and 10 show that participants who used an online mental health tool to get help while on a waiting list to get professional help were significantly more likely to have used an online mental health tool to get support for *Feeling suicidal* and *Self-harm*.

Figure 9 - Bar chart showing people who did / did not use an online mental health tool to get help while on a waiting list for professional help and to get support for *Feeling suicidal*



MH – mental health

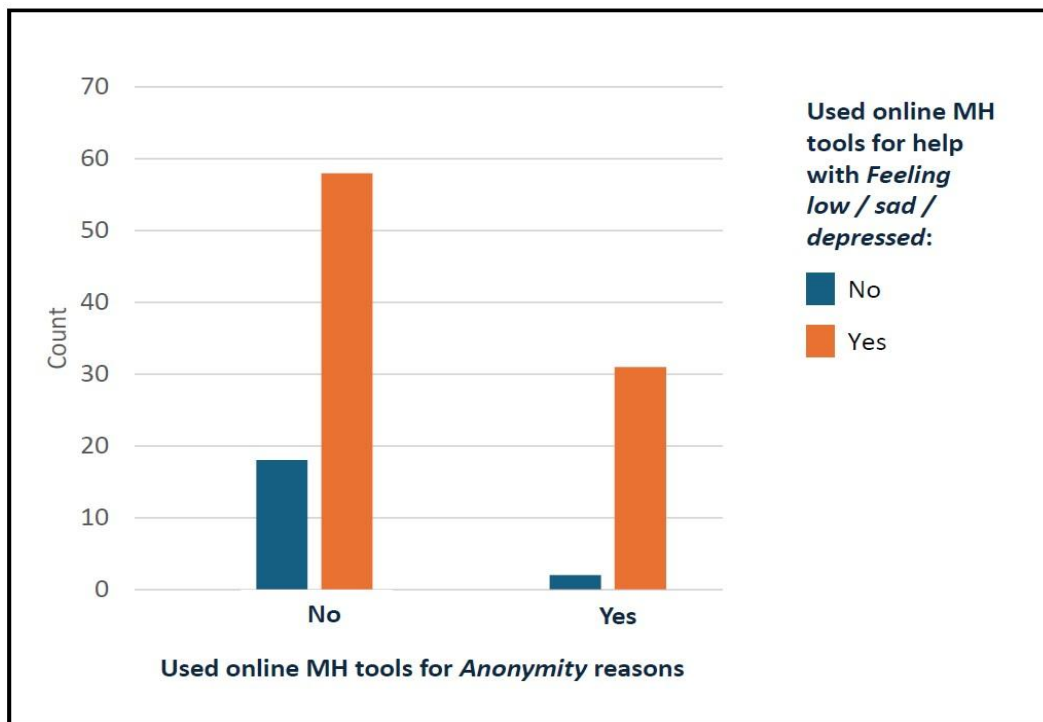
Figure 10 - Bar chart showing people who did / did not use an online mental health tool to get help while on a waiting list for professional help and to get support for *Self-harm*



MH – mental health

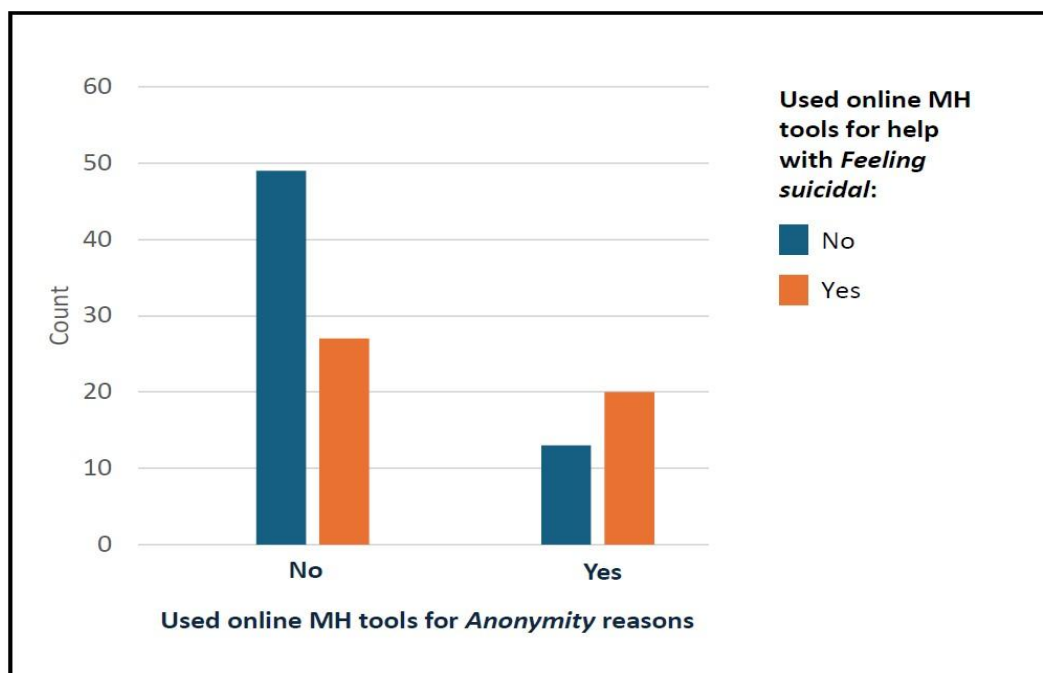
Lastly, a statistically significant relationship was found between using an online mental health tool for anonymity reasons and using an online mental health tool to get support with *Feeling low / sad / depressed* ($\chi^2 (1, N = 109) = 4.770, p = .015$) and *Feeling suicidal* ($\chi^2 (1, N = 109) = 5.901, p = .029$). The strength of the associations was small for both *Feeling low / sad / depressed* ($\phi = .209$) and *Feeling suicidal* ($\phi = .233$). Figures 11 and 12 show that participants who used an online mental health tool for anonymity reasons were significantly more likely to have used an online mental health tool to get support for *Feeling low / sad / depressed* and *Feeling suicidal*. The results also showed that among those who had used an online mental health tool for anonymity reasons, people were more likely to have used an online mental health tool to get support for *Self-harm* (47.6%) than not (26.1%), but with $p = .054$ this difference was not statistically significant.

Figure 11 - Bar chart showing people who did / did not use an online mental health tool for anonymity reasons and for support with *Feeling low / sad / depressed*



MH – mental health

Figure 12 - Bar chart showing people who did / did not use an online mental health tool for anonymity reasons and for support with *Feeling suicidal*



MH – mental health

Table 26 - Chi-Square tests of independence between issues for which on online mental health tool was used and reasons for using an online mental health tool

N = 109

		Eating issues	Feeling anxious	Feeling low / sad / depressed	Feeling stressed	Feeling suicidal	Problem sleeping	Relationship issues	Self-harm
Curiosity	Chi-Square	.054	.403	.753	6.800	.703	4.747	.034	4.169
	df	1	1	1	1	1	1	1	1
	Sig. (2-tailed)	.816	.526	.386	.009**	.402	.029*	.854	.041*
Loneliness	Chi-Square	7.215	.017	2.630	.259	.169	1.449	.572	2.243
	df	1	1	1	1	1	1	1	1
	Sig. (2-tailed)	.016^{a,*}	.897	.188 ^a	.776 ^a	.681	.229	.559 ^a	.196 ^a
Desperation for help	Chi-Square	5.078	1.507	4.101	.673	10.270	.222	1.356	16.663
	df	1	1	1	1	1	1	1	1
	Sig. (2-tailed)	.024*	.220	.043*	.412	.001**	.638	.244	.000**
Affordability/ free of cost	Chi-Square	2.769	.007	2.816	6.473	.152	1.216	.298	.004
	df	1	1	1	1	1	1	1	1
	Sig. (2-tailed)	.133 ^a	.934	.093	.011*	.697	.270	.585	.947
Previous negative experience with in-person talking therapy	Chi-Square	9.068	2.507	2.089	.049	2.025	1.748	.017	3.327
	df	1	1	1	1	1	1	1	1
	Sig. (2-tailed)	.008^{a,**}	.146 ^a	.190 ^a	1.000 ^a	.155	.186	1.000 ^a	.092 ^a
Possibility of starting the OMHSHP immediately ¹	Chi-Square	.165	2.259	.000	.067	.002	.304	.690	.495
	df	1	1	1	1	1	1	1	1
	Sig. (2-tailed)	.684	.133	.996	.796	.960	.581	.406	.482

Possibility of doing the OMHSHP in my own time	Chi-Square	1.770	2.022	.072	.025	.996	.121	.153	.245
	df	1	1	1	1	1	1	1	1
	Sig. (2-tailed)	.183	.155	.789	.875	.318	.728	.696	.620
Possibility of working through the OMHSHP at my own pace	Chi-Square	1.984	.061	.022	1.578	.002	.351	.074	1.090
	df	1	1	1	1	1	1	1	1
	Sig. (2-tailed)	.159	.805	.881	.209	.965	.553	.786	.297
Possibility of getting help without needing to travel	Chi-Square	.846	.403	3.158	2.566	.168	1.059	1.099	.601
	df	1	1	1	1	1	1	1	1
	Sig. (2-tailed)	.346 ^a	.525	.076	.109	.682	.303	.295	.438
Possibility of getting help without needing to leave the house	Chi-Square	.262	.785	1.443	.109	3.637	1.096	.772	2.754
	df	1	1	1	1	1	1	1	1
	Sig. (2-tailed)	.608	.376	.230	.742	.057	.295	.380	.097
Anonymity	Chi-Square	2.961	.183	4.770	.528	5.901	1.074	.159	3.707
	df	1	1	1	1	1	1	1	1
	Sig. (2-tailed)	.118 ^a	.668	.029 [*]	.467	.015 [*]	.300	.690	.054
Privacy	Chi-Square	.569	1.627	2.124	.479	.182	.083	2.200	.200
	df	1	1	1	1	1	1	1	1
	Sig. (2-tailed)	.548 ^a	.202	.145	.489	.669	.773	.138	.655
To gain insights into how to manage a certain issue/ experience	Chi-Square	.400	1.032	1.645	1.997	.208	.084	.392	.005
	df	1	1	1	1	1	1	1	1
	Sig. (2-tailed)	.527	.310	.200	.158	.648	.772	.531	.946

To find out how an approach worked / whether it would work for me	Chi-Square	.000	2.791	1.239	3.377	.005	.005	.025	.588
	df	1	1	1	1	1	1	1	1
	Sig. (2-tailed)	.996	.095	.266	.066	.941	.944	.875	.443
To get help while on a waiting list to see a mental health specialist / receive treatment	Chi-Square	3.669	1.449	.857	.910	8.086	.499	.111	7.325
	df	1	1	1	1	1	1	1	1
	Sig. (2-tailed)	.108 ^a	.229	.354	.340	.004^{**}	.480	.738	.007^{**}
I felt I had an issue and wanted to solve it myself	Chi-Square	2.092	1.759	.714	.013	2.045	.578	2.115	4.131
	df	1	1	1	1	1	1	1	1
	Sig. (2-tailed)	.222 ^a	.185	.398	.908	.153	.447	.146	.042[*]
Recommended or prescribed an OMHSHP by a healthcare professional	Chi-Square	1.244	.338	1.057	.746	1.602	.041	.659	2.905
	df	1	1	1	1	1	1	1	1
	Sig. (2-tailed)	.315 ^a	.561	.393 ^a	.388	.206	.839	.417	.088

*. Significant at the .05 level.

** . Significant at the .01 level.

a. Fisher's Exact Test.

b. The minimum expected cell count in this subtable is less than one.

¹ The reasons for using an online mental health tool were taken verbatim from the online questionnaire, where the term OMHSHP (online mental health self-help programme) was used. Please see explanation provided in section 4.4 of the Methodology Chapter

Chi-Square test between sexual orientation and reasons for using an online mental health tool

Analyses of association were carried out to explore if there was a relationship between the sexual orientation of the participants (converted into the binomial variable heterosexual / non-heterosexual) and 17 reasons for using an online mental health tool (all variables with two categories: ticked / not ticked). All possible pairwise cross-tabulations were explored using the Chi-Square test for independence to compare frequency distributions. The results of the Chi-Square tests are reported in Table 27 below. They show that statistically significant relationships were found between sexual orientation and 5 reasons for using an online mental health tool. Non-heterosexual participants differed from heterosexual participants in that they were significantly more likely to have used an online mental health tool out of curiosity ($\chi^2 (1, N = 109) = 7.247, p = .007, \phi = -.258$), because of the possibility of doing the OMHSHP in one's own time ($\chi^2 (1, N = 109) = 6.820, p = .009, \phi = -.25$) or at one's own pace ($\chi^2 (1, N = 109) = 5.124, p = .024, \phi = -.217$), to get help without needing to leave the house ($\chi^2 (1, N = 109) = 8.881, p = .003, \phi = -.285$) and to get help while on a waiting list for treatment ($\chi^2 (1, N = 109) = 4.548, p = .033, \phi = -.204$). All five statistically significant associations had small effect size.

Table 27 - Chi-Square test of independence between sexual orientation and reasons for using an online mental health tool

N = 109

Curiosity	Chi-square	7.247
	df	1
	Sig. (2-tailed)	.007**
Loneliness	Chi-square	.171
	df	1
	Sig. (2-tailed)	.679
Desperation for help	Chi-square	.021
	df	1
	Sig. (2-tailed)	.884
Affordability / free of cost	Chi-square	3.422
	df	1
	Sig. (2-tailed)	.064
Previous negative experience with in-person talking therapy	Chi-square	.007
	df	1
	Sig. (2-tailed)	.933
Possibility of starting the OMHSHP immediately¹	Chi-square	.823
	df	1
	Sig. (2-tailed)	.364
Possibility of doing the OMHSHP in my own time	Chi-square	6.820
	df	1
	Sig. (2-tailed)	.009**
Possibility of working through the OMHSHP at my own pace	Chi-square	5.124
	df	1
	Sig. (2-tailed)	.024*
Possibility of getting help without needing to travel	Chi-square	.528
	df	1
	Sig. (2-tailed)	.467
Possibility of getting help without needing to leave the house	Chi-square	8.881
	df	1
	Sig. (2-tailed)	.003**
Anonymity	Chi-square	.210
	df	1
	Sig. (2-tailed)	.647
Privacy	Chi-square	.008
	df	1
	Sig. (2-tailed)	.929
To gain insights into how to manage a certain issue / experience	Chi-square	2.747
	df	1
	Sig. (2-tailed)	.097

To find out how an approach worked / whether it would work for me	Chi-square	.269
	df	1
	Sig. (2-tailed)	.604
To get help while on a waiting list to see a mental health specialist / receive treatment	Chi-square	4.548
	df	1
	Sig. (2-tailed)	.033*
I felt I had an issue and wanted to solve it myself	Chi-square	.159
	df	1
	Sig. (2-tailed)	.690
Recommended / prescribed an OMHSHP by a healthcare professional	Chi-square	.004
	df	1
	Sig. (2-tailed)	.950

*. Significant at the .05 level.

**. Significant at the .01 level.

¹ Reasons for using an online mental health tool taken verbatim from the online questionnaire, where the term OMHSHP (online mental health self-help programme) was used. Please see explanation provided in section 4.4 of the Methodology Chapter.

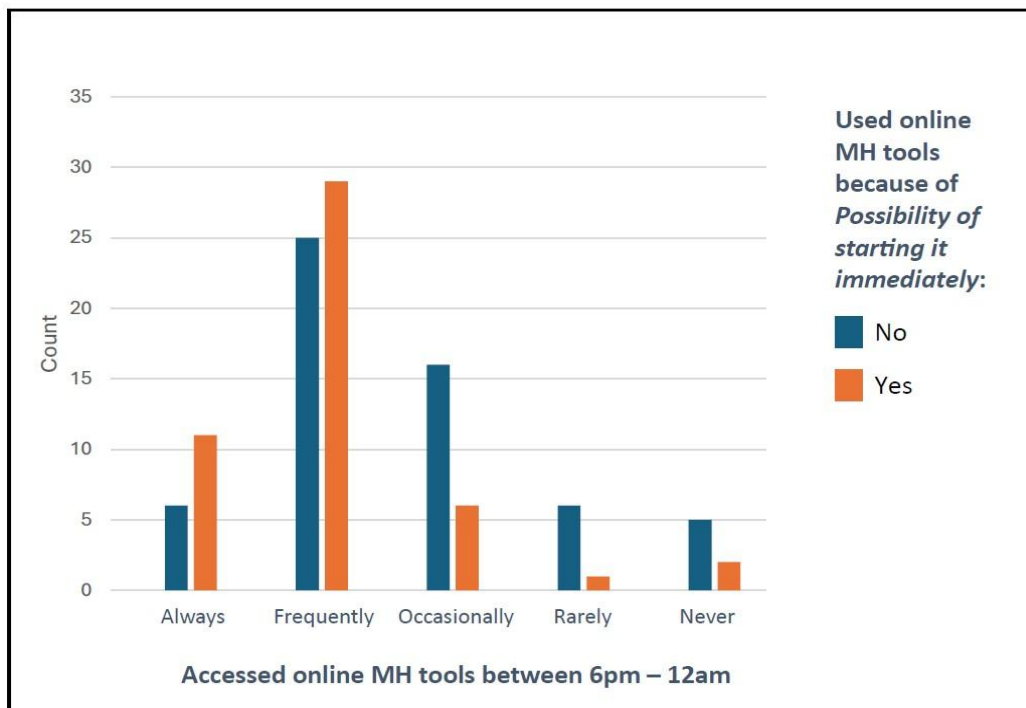
Mann-Whitney U test of association between reasons for using an online mental health tool and frequency of accessing online mental health tools at four different times

Analyses of association were carried out to explore possible relationships between six select reasons for using online mental health tools and the time of the day during which an online mental health tool was used. The six reasons (each a nominal variable with two categories) include: privacy; possibility of using an online mental health tool in one's own time; possibility of using an online mental health tool at one's own pace; possibility of starting to use an online mental health tool immediately; possibility to get help without having to travel; and possibility to get help without having to leave the house. The time of day during which people accessed online mental health tools was measured as how often online mental health tools were accessed in the morning, afternoon, evening, and night-time, each of these an ordinal variable composed of the categories *always*, *frequently*, *occasionally*, *rarely*, *never*. The Mann-Whitney U test was employed to explore these associations, comparing the two groups of each nominal variable on the ordinal variables. The categories of the ordinal variables were coded so that higher numbers indicated higher frequency (i.e. *always* = 5, *frequently* = 4, *occasionally* = 3, *rarely* = 2, *never* = 1). The group

with the higher Mean Rank indicates that the people in that group (e.g. people who used an online mental health tools for privacy reasons) were more likely to access online mental health tools within a certain time of the day than people in the other group (e.g. people for whom *privacy* was not a reason for a using an online mental health tool). A table with all the results of the Mann-Whitney U test performed between the above described variables is presented in Appendix N. This section captures the results that are pertinent to the study aims.

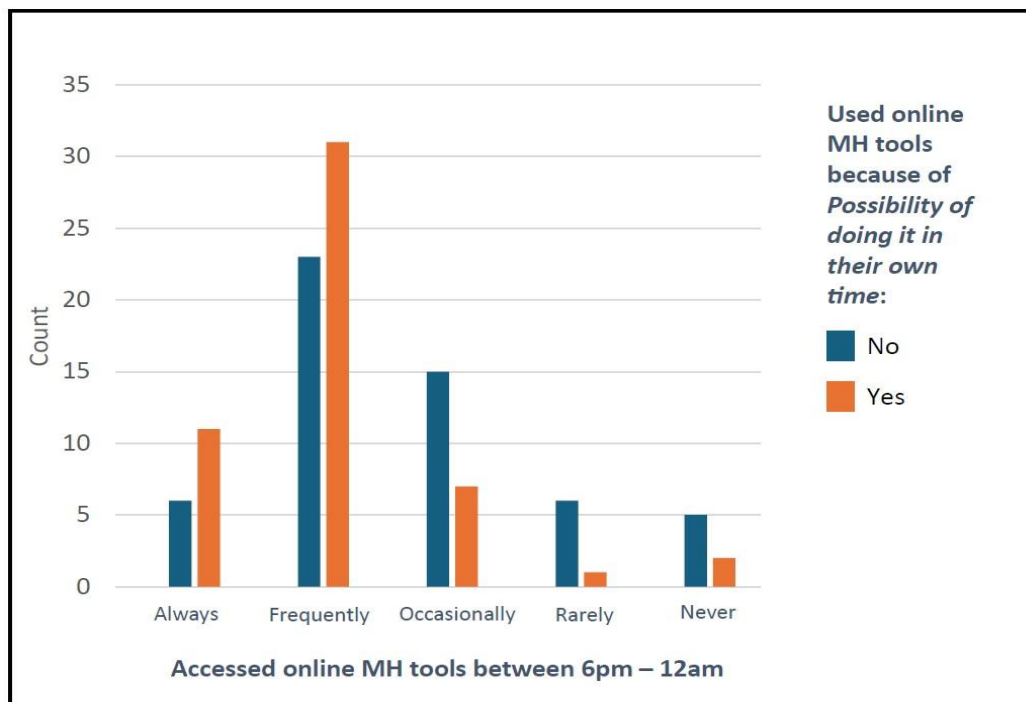
As illustrated in Figures 13 to 16 below, accessing an online mental health tool between 6pm – 12am (evening and night-time) was more common among those who used an online mental health tool for the following reasons: possibility of starting the online mental health tool immediately (Mean Rank = 63.32, compared with Mean Rank = 46.13 for those who did not choose this reason), $U = 964.500$, $z = -3.081$, $p = .002$, effect size $r = -.30$; to use an online mental health tool in their own time (Mean Rank = 62.60, compared with Mean Rank = 45.87 for those who did not choose this reason), $U = 983.000$, $z = -3.007$, $p = .003$, effect size $r = -.29$; to work through an online mental health tool at their own pace (Mean Rank = 62.68, compared with Mean Rank = 48.39 for those who did not choose this reason), $U = 1000.500$, $z = -2.510$, $p = .012$, effect size $r = -.24$; and to get help without needing to travel (Mean Rank = 64.14, compared with Mean Rank = 50.41 for those who did not choose this reason), $U = 822.000$, $z = -2.173$, $p = .030$, effect size $r = -.21$. The strength (effect size) of these relationships ranged from small to medium.

Figure 13 - Bar chart showing people who did / did not use an online mental health tool between 6pm-12am and because of the possibility of starting using it immediately



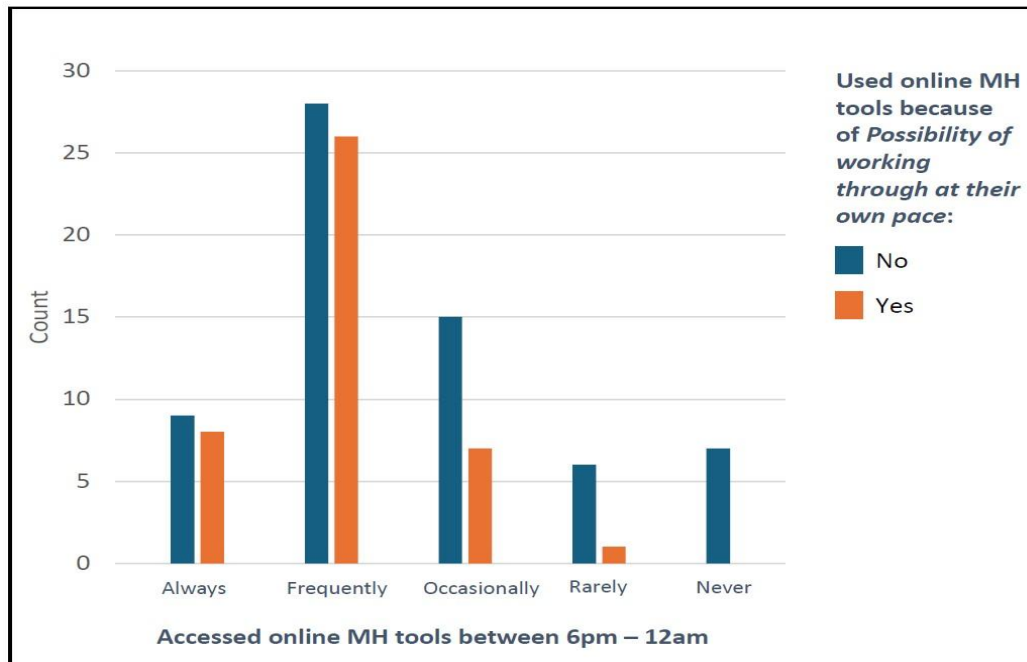
MH – mental health

Figure 14 - Bar chart showing people who did / did not use an online mental health tool between 6pm-12am and because of the possibility of doing it in their own time



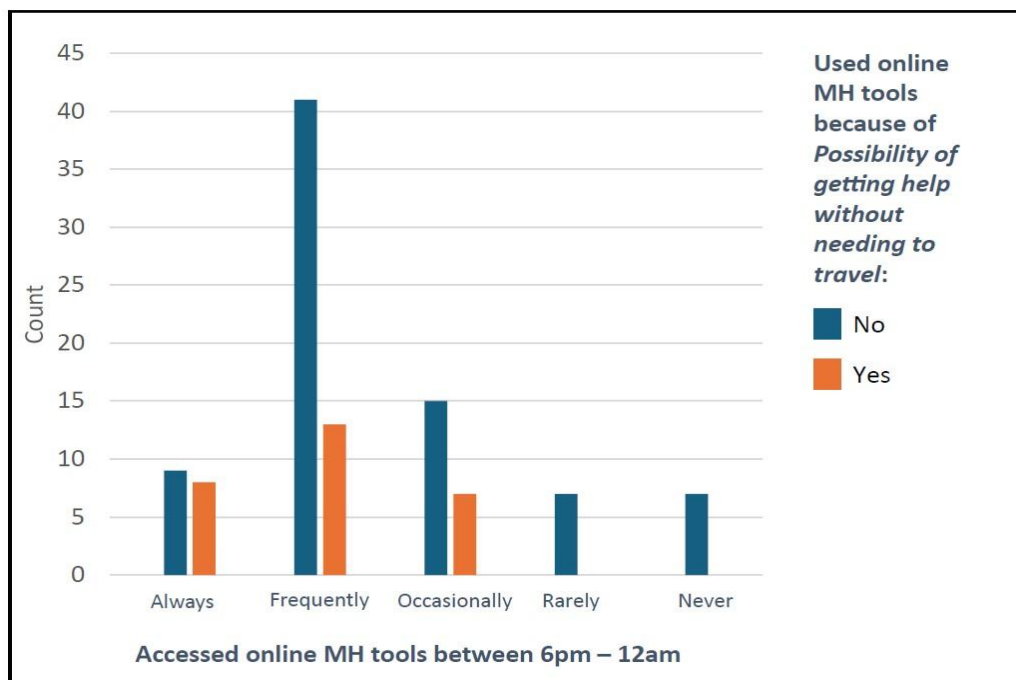
MH – mental health

Figure 15 - Bar chart showing people who did / did not use an online mental health tool between 6pm-12am and because of the possibility of working through it at their own pace



MH – mental health

Figure 16 - Bar chart showing people who did / did not use an online mental health tool between 6pm-12am and because of the possibility of getting help without needing to travel



MH – mental health

Mann-Whitney U test of association between demographics and frequency of looking for health and mental health information online

Analyses of association were carried out to explore whether there was a relationship between participants' demographics and the frequency of looking for health information and mental health information online. The demographic variables included age, gender, sexual orientation, education, employment, relationship status, income, and setting and County where people lived. With the exception of the variable for participants' setting (urban vs rural) which required no manipulation, all the other variables were collapsed into binomial variables based on the patterns that were identified in the descriptive statistics (e.g. the sample had a higher proportion of people aged 35 and above than the sample of a recently published study on the same topic, therefore the age variable was collapsed from a scale variable to a binomial variable with the groups 18-34 / 35 and above).¹⁷ The frequency of looking for health and mental health information online are two ordinal variables with four categories each (*Every day or almost every day; At least once a week (but not every day); At least once a month (but not every week); Less than once a month or never*).¹⁸ The Mann-Whitney U test was used to compare the groups of the nominal variables on the ordinal variables. The five categories of the ordinal variables were coded from *Every day or almost every day* = 4 to *Less than once a month or never* = 1. The group with the higher Mean Rank indicates that the people in that group (e.g. males) looked online for health or mental health information more often than group with the lower Mean Rank (e.g. females). The analysis yielded one statistically significant result. The participants who were in a relationship (Mean Rank = 60.10) looked for health information online significantly more often than the participants who were not in a relationship (Mean Rank =

¹⁷ For the gender variable, participants could choose between Female and Male or describe their gender in their own words. Only one participant did so, and described their gender as being 'Male (Trans)'. On account of the fact that this was the only such case and that their gender description emphasised being male, this participant was kept in the analysis and recoded to be combined with the male category.

¹⁸ *Never* and *Less than once a month* were originally two separate categories. As the former had very few cases, it was combined with the latter for the purpose of this analysis of association.

48.27), $U = 1134.000$, $z = -2.077$, $p = .038$. The strength of the relationship was small ($r = -.20$). The complete results of the Mann-Whitney U tests are reported in Appendix N.

Chi-Square test between demographics and posting mental health content online

Analyses of association were carried out to explore if there was a relationship between the demographic characteristics of the participants and whether they did or did not post mental health related content online. The demographic variables are the same used in the previous section. All possible pairwise cross-tabulations of demographics with posting / not posting mental health content online were explored using the Chi-Square test for independence to compare frequency distributions. No statistically significant relationships were found. A table with the results of the Chi-Square tests is included in Appendix N.

5.5 Summary of results

Using a quantitative questionnaire, the purpose of Phase 1 of this study was to explore the presence of a number of characteristics in adults who use online mental health tools for mental health support and in their everyday use of such tools. This chapter has presented the results of the descriptive statistics analyses of the questionnaire data, followed by association analyses that were carried out to deepen the exploration of aspects of using online mental health tools for mental health support. The present section concludes the chapter by recapitulating the salient results.

Demographic profile of the sample

The typical adult user of online mental health tools in this sample was female, White Irish, heterosexual, and lived in an urban area during the time they were using an online mental

health tool. Another characteristic of the sample was that younger users aged 18 – 34 years old were in the majority, but in a lower proportion than reported elsewhere (Stawarz et al., 2019a), meaning that the present study attracted a higher number of older users. In the sample there were also sizeable minorities of online mental health tool users who were non-heterosexual and lived in a rural area. Another result of interest was that although more than half of the participants were currently working, a similar proportion were individuals who were more likely to lack a stable and / or good income, being in part-time employment, students, in training, unemployed, or on long-term disability pension. This may account for most participants (six in ten) reporting an annual income of up to €25,000.

Use of online mental health tools and traditional mental health interventions

The great majority of participants had received mental health support in the form of both traditional in-person interventions (primarily in-person talking therapy and medication) and online supports, and had used them at the same time. By contrast, a few participants (less than one in ten) said that they had not received any of the traditional mental health interventions that were indicated in the questionnaire, which comprised the most commonly available mental health interventions. This raises the question that these individuals might have been relying on online mental health tools and other sources of support other than traditional interventions. Among the participants who had engaged with both traditional interventions and online mental health tools, a small subgroup (above one in ten) indicated not receiving any of the traditional interventions before ever starting to use online mental health tools, which might suggest the use of these tools may have predated their engagement with traditional interventions.

Use of online mental health tools

Most participants had used only one or two online mental health tools. A wide range of such tools were used across the sample, with self-help and wellbeing apps being by far the most popular. Online mental health tools were used to get help with various issues, most frequently feeling low / sad / depressed, stressed, and anxious. Remarkably, four in ten participants had used an online mental health tool to get help with feeling suicidal.

The most popular reason for deciding to use an online mental health tool, indicated by more than six in every ten participants, was related to its (perceived) affordability or free-of-cost nature. Consistent with this, the great majority of participants (nine in ten) had cumulatively paid no more than 60€, with most of these participants having in fact only used free-of-charge online mental health tools.

The second most frequent reason for using an online mental health tool, indicated by less than six in ten people, was to gain insights into how to manage a certain issue or experience. Consistent with this, more than four in ten people searched online for mental health information at least once a week, supporting the popularity within the sample of the view of online mental health tools and the Internet as sources of information and learning around mental health and mental health problems. Further support came from the questionnaire qualitative data, where some participants commented positively on using online mental health tools and the Internet to find ways of dealing with their mental health problems or understand them better. Other comments remarked on associated challenges and risks such as difficulties with finding relevant and reliable mental health information online or how certain online environments can be detrimental to one's mental health.

The third main reason for using an online mental health tool (indicated by half of the participants) was desperation for help. The Chi-Square tests for independence, which compared those who did and did not use an online mental health tool for this reason,

provided appreciable patterns of association between using an online mental health tool out of desperation for help and seeking help for a number of issues. The participants who used an online mental health tool to get help for feeling low / sad / depressed, self-harm, feeling suicidal and eating issues were significantly more likely to also have used an online mental health tool because desperate for help. Additionally, statistically significant associations were also found between the participants who were seeking help for some of those issues and other reasons for using online mental health tools. Those who used such tools to get support with feeling suicidal and self-harm were significantly more likely to have used an online mental health tool to get help while on a waiting list for professional treatment. Those who reported using online mental health tools for support with feeling low / sad / depressed or suicidal were also significantly more likely to have used such tools for anonymity reasons.

The usefulness ratings participants gave the online mental health tools they had used showed that most people had benefited from at least one of them. The data also reflect a mix of positive and negative experiences, with less positive ratings and negative ratings being relatively frequent. With many participants having used multiple online mental health tools, it is understandable that these were not all equally useful to people. This mix of experiences was well reflected in the questionnaire qualitative data.

Lastly, the online mental health tools that the participants had used had been primarily discovered by them directly online via online searches (using search engines) and social media sites. Participants less often found out about an online mental health tool via other sources such as a healthcare professional or a friend or family member. Search engines were also the most popular way in which the participants searched for mental health information online. Mental health websites were another popular choice when searching for mental health information online and ranked second, while social media sites, although ranking third, were a lot less popular.

Use of the Internet, computer devices, and patterns of access to online mental health tools

The Internet was an established presence in the daily life of the participants. Virtually all participants were online daily or almost daily. The great majority of them used emails and instant messaging on a daily basis, and regularly went online for work or study reasons and to read the news, stream audio and video content, and use social media. Most participants also went online to look for health and mental health information, although less frequently. In general, people went online to search or consume (e.g. read, watch or listen to) content and were less likely to post content. This also applied to mental health content.

Most participants had at least two computer devices from which they went online and that they owned or had personal access to, particularly a smartphone and a laptop. By contrast, more than one in ten participants only went online from one device or owned / had personal access to just one device. For all of these participants except one, this device was a smartphone. Additionally, for one third of them, the smartphone was both the only device they owned / had personal access to and the only device they went online from.

There were both similarities and differences between the general use of Internet-connected devices and the use of devices to access online mental health tools. Virtually everyone in the sample went online from a Smartphone. The Smartphone was also by far the main device used to access online mental health tools. The laptop was the second most used device to go online for general reasons, with three in four participants doing so. Although it was also the second most frequently used device to access an online mental health tool, only approximately one in four participants used it regularly for this purpose.

Virtually all participants had access to the Internet at home, primarily by connecting to a Broadband / wi-fi Internet connection or using the data plan on their Smartphone. The home was also the preferred location for using an online mental health tool, with the great majority of participants doing so regularly. Going online while on the move (e.g. while

commuting or travelling) was popular among the participants, but considerably less so when the reason was to access an online mental health tool.

People were most likely to use online mental health tools in the evening to night-time period (6pm –12am). The analyses of associations carried out using the Mann-Whitney U test showed that some of the reasons for using an online mental health tool were significantly associated with use during this time. The participants who used an online mental health tool because of the possibility to start it immediately, do it in their own time, work through it at their own pace, and get help without needing to travel were significantly more likely to use it between 6pm – 12am.

Lastly, there were reports of technology-related issues that can hinder the use of online mental health tools, most commonly the fact of being distracted by app notifications and having poor Internet or mobile network signal, which some participants experienced repeatedly while using an online mental health tool. Other events, such as running out of one's Internet data allowance, having limited options to access the Internet, or features of an online mental health tool malfunctioning, tended to be occasional or rare or never happened to people. The occasional occurrence of these issues may have limited impact on one's use of an online mental health tool, but frequent occurrences may become an accessibility barrier.

CHAPTER 6 – PHASE 2 – QUALITATIVE RESULTS

6.1 Introduction

This chapter presents the results from the second phase of the study, which aims to explore in more depth people's use of online mental health tools for mental health support. The data for this phase involved semi-structured in-depth interviews with 10 adults in the Republic of Ireland who self-identified as having a mental health problem and who sought support for it using online mental health tools. The data also included the follow-up email that one participant spontaneously wrote the researcher a few weeks after her interview, in which she wished to further elaborate on her use of online mental health tools. Permission was given by the participant to use her email under the same consent agreement from the interview.

The chapter begins with a description of the data analysis procedure. Next, the demographic profile of the sample and an overview of the online mental health tools used by the participants are provided. The results of the analysis are then presented. The chapter concludes with a summary of the results.

6.2 Data analysis procedure

The interviews were analysed using thematic analysis. Section 4.7.3 of the Methodology Chapter discussed the appropriateness of thematic analysis for the goals of Phase 2 and the decision to follow the guidelines developed by Braun and Clarke (2006). The present section reports on the process of analysis of the interviews.

Thematic analysis is a method that allows for patterns of meaning (themes) to be identified and analysed within qualitative data for the purpose of producing a rich and complex

account of the data (Braun & Clarke, 2006). The interviews were analysed in their entirety to map out the predominant themes relating to people's experience with using online mental health tools for mental health support and the role of technology in this experience. The analysis followed an inductive approach. This means that the search for patterns of meaning was driven by the data, with the researcher reading and re-reading the entire data set with an open mind and coding diversely for any data that was relevant to the phenomena under study, rather than applying a pre-determined coding frame or theoretical framework (Braun & Clarke, 2006, 2013). This approach supported the exploratory purpose of the study as it helped develop a rich overall description of people's everyday use of online mental health tools and the role of technology in it, and highlighted several salient aspects of their reported experience (Braun & Clarke, 2006).

Braun and Clarke's (2006) 6-phase process was followed to analyse the interviews. The six phases include reading and familiarisation, coding the data, searching for themes, reviewing themes, defining and naming themes, and writing the report / finalising the analysis. Each phase builds on the former and involves looking at the data "actively, analytically and critically" at a progressively deeper level (Braun & Clarke, 2013, p. 203), as described next.

Phase 1 – Reading and familiarisation. In this initial stage the researcher begins the process of immersing themselves in the data. This involved first transcribing the interviews in preparation for the coding process, then actively reading and listening through the entire data set to familiarise myself with the content of each interview. Writing down observations and initial ideas for coding was integral to this process (Braun & Clarke, 2006, 2013).

Data transcription. Transcribing data requires making decisions as to how to represent in written form what is said (verbal utterances) as well as how it is said (nonverbal features) (Bailey, 2008; Potter & Wetherell, 1987). Such decisions need to be suited to the needs of the analysis (Braun & Clarke, 2006; Potter & Wetherell,

1987). Thematic analysis is primarily concerned with identifying patterns of meaning in what is said, therefore a word-for-word transcription of the interviews was prioritized, with the inclusion of nonverbal features that speakers can use to convey meaning or that may otherwise aid in its interpretation (Braun & Clarke, 2006) such as tone, emphasis, pauses / silences, laughter, and cut-off speech. A more thorough representation of nonverbal features was not needed since this level of detail is not the focus of thematic analysis and would have made the transcribed data unnecessarily difficult to read (Malson & Ussher, 1996). Each transcript was double checked against the recording for accuracy and typos. The full list of transcription conventions is provided in Appendix O.

Phase 2 – Generating codes. Coding is the process through which data segments are assigned a word or short phrase that captures their meaning in as succinct and clear a way as possible (Braun & Clarke, 2013). Coding engendered a more meaningful and thorough process of familiarisation and engagement with the data as it involved working systematically through each interview and thinking about the meaning of the data at a deeper level than the previous phase. Coding primarily took place at the semantic or explicit level, with codes “provid(ing) a succinct summary of the explicit content of the data” (Braun & Clarke, 2013, p. 207). An inclusive approach was chosen where the interviews were coded line by line in their entirety, leaving it for the next analytic stage to be more selective (Braun & Clarke, 2013). This was useful because at this initial stage of coding the data it wasn’t always clear whether something might be relevant to the issues under investigation (i.e. the issues specified in the research aims and objectives) (*ibid.*). Individual segments of data were assigned a single code or, alternatively, multiple ones when it was deemed to express multiple points or meanings of (potential) interest. Extensive notes were taken about potential patterns and similarities and contrasts between these.

The data was coded manually using a three-column matrix, with the first, second, and third column housing data, codes, and notes, respectively. An extract of this is shown in Appendix P. A total of around 2800 codes were produced.

Phases 3 – Searching for themes. The definition of theme that was applied in the study is provided by Braun and Clarke (2006), according to whom a theme represents a meaning that repeats within the data and that captures something important in relation to the research question. The final themes were salient patterns of meaning that captured something important in relation to people's everyday use of online resources for mental health support and the role played by technology in this.

To develop themes, the researcher starts by working with the codes generated in the previous phase (Braun & Clarke, 2006). In this study, the codes were initially grouped into clusters or categories. Codes that appeared to be related to the same domain were clustered together and each cluster was named using a word or brief sentence. This was essentially a process of 'coding the codes' as it resembled coding but worked with the codes rather than the data. It helped organise the vast volume of codes into a more manageable amount and form candidate patterns of meaning (themes). The clusters of codes were then analysed. This was an iterative process, moving back and forth between the codes and the developing patterns of meaning, and required interpretative work as it involved thinking about the relationship between the codes and between the codes and the developing patterns (Braun & Clarke, 2006). Some of the clusters of codes became candidate themes. Others were too diverse or lacked depth or enough data to support them. These were re-analysed and were either combined with existing candidate themes if appropriate or discarded.

Following Bree and Gallagher's (2016) approach to using Microsoft Excel to thematically analyse qualitative data, an Excel Workbook was created to assist with the laborious process of identifying patterns of meaning across the codes and sorting and re-sorting these accordingly. A particularly helpful aspects of the Excel Workbook was that it allowed

for the entire set of 2800+ codes and the developing themes to be accessed within the same workspace (one Excel Workbook composed of several worksheets by contrast to multiple separate files). Another useful aspect is a tool that can be used to sort the codes in a number of different ways, for example in ascending or descending order, colour of the cell, font colour, or font type (Bree & Gallagher, 2016). Screenshots from the Excel Workbook are shown in Appendix Q. A Microsoft Word document was also created where all the data extracts supporting each individual candidate pattern of meaning were collated.

This stage of the analysis (searching for themes) ended with a collection of candidate themes complete with analytic commentary, and all relevant data extracts collated for each candidate theme. Clusters of codes that captured potentially interesting aspects in relation to the research questions but that did not seem to fit with the existing candidate themes or were not robust enough to form a new one were moved to a 'Miscellaneous' category to be reviewed in the next stage. The codes that neither fit with the existing candidate themes nor the Miscellaneous ones were dropped from the analysis.

Phases 4 – Reviewing themes. In this phase, the candidate themes were checked for coherence (each theme organised around a central concept), distinctiveness (no overlap between the themes), and whether they convincingly captured the meaning of the data (Braun & Clarke, 2013). First, the collated extracts for each candidate theme were re-read to ensure that they fit with the theme and formed a coherent pattern (Braun & Clarke, 2006, 2013). During this process overlaps between some of the candidate themes became evident, requiring revision of these themes. The codes in the 'Miscellaneous' category were checked again at this time and either became part of the existing themes or were discarded. Next, the codes that had been previously dropped from the analysis were checked to ensure that no relevant codes had been missed. Finally, the candidate themes were checked against the uncoded interview transcripts to ensure that they captured the key meanings of the entire data set (Braun & Clarke, 2006, 2013). A total of ten final themes were generated.

Phases 5 and 6 – Defining themes and Producing the report. The write-up of the analytic narrative accompanying each theme, which had been developed since the early stages of the analysis, was completed, making sure that it included clear statements of what each theme was about, clear descriptions of a theme’s components, and data extracts that best represented each theme. Theme titles were formulated that conveyed a theme’s core idea (Braun & Clarke, 2013).

6.3 Sample overview

The 10 interview participants ranged in age between 26 – 56 years (mean 40). Half of them were aged between 25 – 34 years old. The majority were female, had a bachelors’ degree, were employed, in a relationship, and lived in County Dublin. All lived in an urban area and were of White background, mostly White Irish. A detailed breakdown of the sample’s demographic data is provided in Table 28 below.

Table 28 - Demographics of interview participants

Total number of participants	10
Mean age (range)	40 (26 – 56)
Age	n
25-34	5
45-54	4
55-64	1
Gender	n
Female	6
Male	4
Education, highest level completed	n
Bachelor’s degree	7
Postgraduate degree	2
Other (Level 7 diploma)	1

Employment status	n
Employed full time	3
Employed part-time	2
Self-employed	2
On long-term sickness / disability benefit	2
Unemployed / Job seeker	1
Relationship status	n
Married / in a civil partnership / cohabitating	5
Single, never married or in a civil partnership	3
In a relationship (not cohabitating)	1
Other (separated but still living together)	1
Ethnic / cultural background	n
White Irish	6
Any other White background	4
County	n
Dublin	7
Other	3
Setting	n
Town / urban area	10

The interview participants were not asked directly about their mental health problems, but some data about what mental health problems they had experienced and for how long was available as a result of participants spontaneously sharing this information during the interview. Several participants talked about experiencing anxiety and / or depression. Some mentioned problem sleeping. Other issues mentioned across the sample included eating disorders, feeling suicidal, difficulties with relationships, self-harm, intense stress, having schizophrenia, having bipolar disorder, intrusive thoughts, negative thinking, and self-deprecating thoughts.¹⁹ Most interviewees seemed to have experienced mental health

¹⁹ The terms used in this list reflect as much as possible the language used by the participants themselves. The terms anxiety, depression, eating disorder, feeling suicidal, schizophrenia, bipolar, self-harm, intrusive thoughts, and negative thinking were all used by the participants to name their experiences and mental health problems. Where participants did not use a specific term, terms such as problem sleeping and self-

problems for several or many years, and all except one interviewee mentioned times in their past when they experienced a mental health crisis or mental health problems that had significantly affected their life. At the interview they described feeling better (to different extents). All interviewees were living in the community and had experience with receiving formal support for their mental health (e.g. talking therapy, medication, hospitalisation), which they had received in the past or were still receiving at the time of the interview. Additional activities that were of particular benefit to some participants included meditation, walking, being in nature, and poetry writing.

6.4 Online mental health tools used by the interview participants

The interview participants discussed a variety of online mental health tools, including those they had used or were still using as well as those they had briefly tried or looked into and quickly discarded. Wellbeing or self-help apps were the most popular online mental health tools, with the great majority of the participants using or having looked into one or more meditation and relaxation apps, mental health apps (e.g. apps based on Cognitive Behavioural Therapy, mood trackers), and apps to track physical exercise. Other online mental health tools, used by some participants, included the following: online counselling in different forms such as via email or on an app; online groups, both mental health related (e.g. for people with eating disorders) and non mental health related (e.g. poetry groups online); online courses such as meditation courses, mental health related self-management courses, and educational courses on mental health topics; online searches for information on topics related to mental health. A few participants reported using productivity applications and content management applications (such as Google Excel and Drive, Sticky Notes, Evernote) to help support their mental health (e.g. creating a mood journal in Google Excel) or to support processes that they felt would positively feed back into their mental health. Assorted other online resources were reported by half of the participants,

deprecating thoughts were chosen by the researcher as shorthand descriptions of participants' experiences.

for example self-hypnosis downloads, an animated digital image (gif) for relaxation, and sharing poetry on various sites. Finally, using social media for mental health support was mentioned by half of the participants. This could include any of the activities mentioned above (e.g. seeking mental health information, participating in support groups, sharing poetry) as well as unique ways of engaging in social media that these participants found emotionally beneficial (e.g. building a personal collection of images and links on Facebook, using one's social media page as a visual diary of one's career achievements). A complete list of all the online mental health tools mentioned by the interview participants is provided in Appendix M.

6.5 Results

This section presents the results from the thematic analysis of the qualitative data. The semi-structured interviews ranged from 36 minutes to 102 minutes in length, averaging 56 minutes (excluding the introduction and consent part, demographic questions, and closure of the interview meeting). The data set consists of 9.3 hours of transcribed interview data and the 440-word long follow-up email from one participant.

Through the thematic analysis ten themes were generated:

- *The more things that help the better: Online mental health tools expanding options for support*
- *Ad hoc support when highly distressed*
- *A tool you're in control of*
- *It begins with a click: Finding and choosing online mental health tools*
- *To pay or not to pay? Benefit- and value-based appraisal of paid online mental health tools*
- *Who can I trust? Appraising the trustworthiness of online mental health tools*
- *All devices are not the same*
- *You can do them when you choose to: The flexibility of use of online mental health tools*

- *Layers of technology*
- *There needs to be more progress in mental health care*

The ten themes are presented next. Data quotes that best represent the themes accompany the analytic commentary. Minor edits were made to the quotes by deleting aspects of speech such as ‘uhm’ and ‘erm’ and other such sounds indicating tentativeness or thinking, pauses, false starts and repetitions, interviewer’s interjections such as ‘yeah’ and ‘m-hm’, and descriptions of non-verbal aspects of speech (e.g. ‘((takes long inbreath))’, ‘((laughs))’). As many of these edits were made as it was possible without altering the meaning of a quote. These edits served to improve legibility by deleting aspects of speech that would make quotes unnecessarily harder to read. This was appropriate to do as thematic analysis is concerned with what is being said and editing the quotes did not alter their meaning. Other changes made to the quotes included removing superfluous content, indicated by three dots within square brackets [...]. Text within square brackets indicates text that was added to a quote by the researcher for clarification purposes, without altering the meaning of the quote (e.g. ‘*I find difficult to committing to a [meditation] class*’). A short comment was sometimes added after a quote for context, for example information about the larger discussion the quote is a part of or about the online mental health tool being discussed. The quotes are provided with participant number after each quote, e.g. P4 denotes Participant number 4. Where a quote includes lines from both the interviewer (the researcher) and the participant, the initials I (Interviewer) and P (Participant) precede the lines.

Theme 1 – The more things that help the better: Online mental health tools expanding options for support

This theme is about the function that online mental health tools fulfilled in helping the participants with the treatment or management of their mental health problems, in relation to traditional face-to-face treatment. There was a continuum of experience from

successfully using online self-help tools as the sole form of support to largely distrusting online mental health tools unless serving a purely supplemental and non-therapeutic function. Most interviewees were somewhat in the middle of this continuum. Their experiences showed a variety of ways in which they found online mental health tools helpful. These pointed to how online mental health tools expanded and diversified available options for support and complemented or helped alongside traditional treatments. Online mental health tools had their place within a person's overall help-seeking process, and this place was delimited by the perceived benefits and drawbacks of online mental health tools relative to in-person sources of support.

For some participants online mental health tools expanded options for support by providing alternatives to traditional services (e.g. consultations with mental health professionals, therapy) when these were inaccessible such as due to long waiting lists, temporary closure, costly rates, or social isolation. Online mental health tools helped fill the gaps left by unavailable or otherwise unattainable services.

[...] I think they are quite useful and convenient [...] Especially when you have nothing else that you can do because if you had a doctor available then next week I will see you, it's something, but if you don't, what you do? [...] They kind of fill that gap [...] [P4]

[...] over Christmas there was no therapy for three weeks, and I was (a little bit) worried about it [...] but at least I had Headspace [meditation app], [...] it was a good backup and a good resource to have [P8]

One participant appreciated that online mental health tools may enable more opportunities for people with mental health problems to get the support they need:

[...] the thing about mental health is it's very very debilitating when you're ill and it's very distressing [...] and I think if anything helps, you know, go with it and the more things that are out there to grab on to

the better, you know? [...] online, computers, new technology [...] it helps, the more things the better [P5]

For some participants, online mental health tools expanded options for support by making support available in a form that was better suited to their own needs and preferences than traditional, in-person forms of support. For one participant, this was represented by the self-help aspect of online mental health tools (being able to help herself), which proved more effective than attending psychotherapy.

[...] I went to psychotherapy for three years and in hindsight I don't know how much it actually helped me and then when I started [...] doing it myself, the independence I liked, I was like wow I can actually help myself, okay I don't need somebody else to help me [...] and it seems like that creates more lasting change [...] [P1]

A few participants had engaged with online forms of support while exploring whether to get face-to-face therapy. The online-based alternatives they used included email counselling and an online self-help programme based on Cognitive Behavioural Therapy (CBT). These provided a form of support that these participants felt more comfortable to engage with than in-person therapy at that particular time, as it accommodated the uncertainty they felt towards in-person talking therapy. Eventually both participants continued on to in-person therapy. For example, talking about her experience with email counselling, one participant stated:

[...] I just felt because it was the first time I was opening up about certain things, that it was nice to do that without the face-to-face element and that made me more comfortable, so that when I went to see a face-to-face practitioner I got more out of it 'cause I think I had opened up first kind of more anonymously so it was easier [P7]

In a similar vein, a few participants who contrasted a meditation app with its more traditional counterpart, in-person meditation courses, found the former preferable, as its flexibility allowed them to practice meditation in their own terms. These apps expanded

available options as they made meditation more accessible to these participants by suiting their needs and preferences in a way that meditation courses did not. For example, talking about her choice of a guided meditation app, one participant explained:

[...] I wanted some guidance [...] in being able to sit in a room by myself when I want to rather than going to a [meditation] class and commit to ten classes of mindfulness [...] I feel sometimes I can be in good form and I might commit to a class, but then eight weeks on or maybe four weeks on my mood might have changed and mightn't be as enthusiastic²⁰ [...] [P5]

Some participants used online mental health tools such as apps with various tracking functions and meditation timer apps to supplement, enhance, or facilitate activities they undertook to help with their mental health, such as meditating and taking walks.

[...] I just needed a [meditation] timer to help me just take the hands off and just focus on meditating [...] [P2] [talking about his use of a meditation timer app]

[...] walking every day that is important for me and using this app [...] to know what speed I'm using, it's reflecting my mood as well, so if I'm going 4.3 kilometres per hour it means something different if I'm doing five kilometres per hour, right? so I can say yeah my mood I'm really low something is happening [...] [P9] [talking about his use of an app to track his daily walks]

Alternatively, online mental health tools that provided a more direct source of mental health support were used alongside traditional treatments and any other activities that were being implemented to help with one's mental health (e.g. lifestyle changes). In such cases, online mental health tools, traditional treatments and other endeavours all had their

²⁰ This participant described herself as bipolar and experiencing high mood followed by low mood.

useful place in the overall process of getting better and supporting one's mental health and wellbeing. The helpfulness of an online mental health tool alongside other treatments rather than as the sole or main form of support was also highlighted.

I do enjoy it [meditation app], I think it's good for me [...] With everything else, with the therapy, the exercise, self-care, watching the diet, it's part of a bigger programme, it's not the all end (of it), but it is a good part of it [P8]

[...] [using the meditation app] can kind of bring me down, it trains me to get down to more a quieter level [...] I'm not saying that the app is cause but [...] I haven't been in hospital for years and it's a combination of things you know, medication is a big thing but it's a combination of different tools that you use to try and keep a handle on things [P5]

A few participants, who had used online mental health tools and traditional treatments separately, shared with the previous cases the underlying view that both forms of support have a role to play in the provision of mental health support. They referred to the possibility that as different forms of support online mental health tools and traditional treatments may be useful at different times or for different people, depending on individual needs or level of need at any given time.

I suppose as well I wouldn't rule out traditional like talk therapies or anything, I wouldn't close any doors maybe I'll want to again, but I just haven't [P1] [participant who was successfully treating her anxiety through the use of online self-help tools alone]

[...] [apps] can kind of maybe- make you feel like you can take control of certain things but maybe it's something that's too further down the line to be controlled with apps [...] [P10]

Finally, several participants also viewed online mental health tools, and the Internet more generally, as useful sources of mental health information and education. As noted above,

participants found value in using online mental health tools to complement other treatments and get more help. Learning about mental health and mental health problems was an element of this. In particular, some participants had a desire to understand their mental health problems better and learn more about what could be done to deal with them, and used online mental health tools to this end.

[...] With the Aware one [...] I was having some expectations about gaining some better understanding over what was going on and what I might (be able) to do better to deal with things [...] [P6] [talking about her use of the Aware online self-help programme]

[...] the most serious information for decision making, right? and to have insight what is happening with me and people around me and my adaptation to myself and to people around me, the major provider is TED Talks and Big Think speakers [...] [P9] [discussing his use of the online platforms TED Talks and Big Think for mental health insights]

People found it emotionally beneficial when information resonated with their mental health experiences and helped them make sense of them. Learning that they were not alone in having those experiences and that these could be understood, explained, and dealt with made them feel better and gave them reassurance and hope. One participant described this as “*therapeutic*”.

[...] when I started listening to those they really really helped because it was kind of verbalising some of the things that I was feeling [...] [P7] [talking about short talks she likes to listen on the Insight Timer app]

[...] it's been therapeutic even just listening the notion that, oh it is possible to understand things, there is reasons, there are solutions, and even just that constant message is really- kinda comforting and helpful [...] [P6]

I had the expectation of understanding better what it is that kind of problem that we're talking about and to see what's out there, [...] what other people experience, [...] how many people in the world have autism for example, so you say, well I'm not alone, there are plenty of people out there. [...] [P4]

For a few participants, educating themselves about their mental health and mental health problems was an especially important tool in their toolbox. It was part of their help seeking process and both result and cause of their active involvement in their own care. Thanks to the research and learning they pursued on their own using online resources (as well as others such as books) they were able to affect the path of their care, such as by getting closer to a diagnosis or finding the type of therapy and practitioner they wanted to work with. One participant explained:

[...] last year my son was diagnosed with autism and my first reaction was: Okay I have to know what it is, how to manage this and what it's involved, and studying I said: Okay, he's been diagnosed for many reasons and it were the exact same thing that I did when I was his age, so I said: Mh, it might be good to look into it. So I studied what is autism for adults and said: I think I match the description in a way. And in fact when the psychologist I had the first assessment, and she recognised that there were suspect at least, I might be right [...] So I said: Okay, so this is a tool I can use if I understand and I can explain properly to the therapist, [...] knowing that he has maybe limited resources, that I have maybe just one hour a week for six months and then nothing for three years, at least I can maximise the time or the utility of those hours [...] it gave me kind of tools to understand myself and to communicate what I was experiencing. [...] [P4]

While online mental health tools provided a useful source of support and expanded available options for help, this had limits. Participants pointed out limits and potential risks compared with traditional treatment involving face-to-face contact with a mental health professional. Participants highlighted therapeutic benefits of the latter that revolved around in-person contact with a mental health professional or the physical act of going to therapy. By contrast, the absence of these aspects from online mental health tools could be seen as a limit to their helpfulness and to the meaningfulness of the experience. This was a reason for choosing traditional treatments over online mental health tools.

[...] I would still prefer to do face-to-face counselling [rather than email counselling] [...] I think when it comes to mental health it's a lot easier to be authentic when you're actually face-to-face with someone [...] it's harder to actually do it, but I think it's more meaningful personally [...]
[P7]

[...] there's obviously going to be a benefit [in using online mental health tools] but I think there's definitely a limit compared to actually going out to getting talk therapy [...] there's another sort of force at play encouraging that you attend regularly and I guess there's a social aspect to it as well which you wouldn't really be able to get from an app [...]
[P2]

Additionally, when comparing seeking help online with help from a mental health professional, some participants highlighted that the former lacked the benefits of a mental health professional's expert and active guidance and the ensuing protection from mistaken judgement. This was seen as a limit and pitfall of seeking mental health support online on one's own, particularly for people in a heightened state of mental distress. It was an area of concern for the participants that made them stress the importance of sticking to trusted online resources and talking to a mental health professional.

[...] if you're in a heightened state of anxiety [...] and if you start googling self-help you could just self-diagnose or you could just find all

these insane results and then apply them to yourself and just kinda exacerbate the problem, like make yourself even more anxious [...] really you need to go to like a decent organisation or what you think is a trustworthy organisation so that you're not led astray or led down a bad path, like you're not under the supervision of any medical practitioners or even a counsellor. [...] [P1]

[...] I haven't seen some of the newer [mental health] apps in terms of like how much detail they go into but there's a very I think important benefit to being able to ask someone who's trained in this [doing counselling] [...] [P2]

Theme 2 – Ad hoc support when highly distressed

This theme presents the finding that increased need for mental health support was a common circumstance under which interviewees used online mental health tools. Several participants started to use an online mental health tool while “*in crisis*” or when they reached a turning point of deciding to act and wanting their quality of life to improve.

[...] when I made a concrete decision that I wanted to change things, then all hell broke loose [...] from June up until around end of year was get out of crisis mode because that decision I made just- turned everything upside down [...] that's when the apps and stuff came in and lots of learning and reading and listening to YouTube stuff [on mental health] [...] [P6]

[...] I have two spare ones [subscriptions to a meditation app] for anyone in crisis, again I can say, look have a go at this, I enjoy it, it'll give you a little bit of relief or a bit of space [...] [P8]

Several participants also found it helpful to have an online mental health tool that they could use when the need for it arose, to help with specific needs and situations and get relief in the moment (e.g. anxiety attacks, struggling to get to sleep). This also points to the opportunity of getting support as soon as needed. Online mental health tools used in this way tended to be apps and other such resources the participants accessed on their smartphone.

[...] The hypnosis downloads I suppose I use them to react to certain stressful situations more than a kind of daily keeping your kind of daily routine [...] [P1]

[...] especially like the last played option [...] where at least if I can just go and click, okay what have I just listened to in the last month, and I really liked that, I'll just put that one up [...] if I am finding it difficult to fall asleep or if I am like super anxious or I feel like I'm going to have a panic attack or something like that [...] [P7]

Some participants also described how their amount of use of an online mental health tool could increase or decrease as their preferences or mental health needs changed. Specifically, it was useful to have a source of support that they knew worked for them and that they could go back to or use more when needing more help.

I generally tend to use it [meditation app] more when my mood is elevated 'cause it brings my mental thinking down, it kind of brings my racing thoughts down, the meditation [P5]

[...] when I was in a bit more of a crisis kind of part, I'd force myself to use it every single day [...] I got out of the habit of it I just found that I just didn't need it as much but I knew that I could go back to it if I ever did need it, like it's still on my phone [...] [P7] [discussing her use of a meditation app]

Theme 3 – A tool you're in control of

It was important to people that the features of online mental health tools, apps especially, were flexible enough to allow people to be in control of them. This allowed people to use an online mental health tool in the way that best suited their needs. This was clear when participants mentioned their appreciation for functions that allowed them to personalise their use of an online mental health tool and enhance its relevance to their own preferences, needs, and the issues they were using it for. For example:

[...] I think the most helpful thing that I liked about it was the fact of giving yourself roles. So basically the app looked like a line and then folders, and then you name each folder, like artist or manager, whatever your work is. [...] [P10]

[...] the library is pretty good in that you'll have a little sort of- task bar [...] and then it gives you each different area within the library, [...] so you can click on one particular area, you know, if you want to improve your work performance or around sports, around mindfulness, around food and walking and exercising, it's very easy to find [...] [P8]
[describing the content of an app for guided meditation]

A few participants who used meditation apps reported liking a function that allowed them to save or otherwise easily retrieve specific content. Such a function allowed them to create a selection of their preferred content, so that they could quickly find it when they wanted or needed.

There was like a visual appeal, then functionality mainly just quickly going through it, so seeing can I set my own times or can you save your own times in it [...] so that would be convenient to be able to quickly grab a previously set time that I know I want [P2]

[...] one of the features I really like about Insight Timer 'cause- when I found something that really helped me calm down I just kind of kept

playing it, they have a previously played feature and you can kind of just make your own playlist on it [...] [P7]

A stark example of personalisation came from one participant who created her own custom online mental health tools using productivity applications on her smartphone such as Evernote, Google Excel, and Google Drive. This allowed her to create tools that better fulfilled what she needed an online mental health tool to do for her, namely a tool that was “*personal, private and in my control*”. This was particularly important for this participant, who at various points in her interview stressed that the mental health apps she had previously tried often missed these characteristics. She described her “*DIY version*” of mental health apps in the follow-up email she wrote the researcher one month after her interview.

[...] I have been using Evernote to keep track of ideas and questions that I want to bring up in counselling. I am using the Google excel app daily where I've made my own mood tracker and notes about how different actions are affecting me. [...] Doesn't have the same pretty interface [as purpose-built mental health apps], but feels great to have it at my fingertips anytime [...] It feels personal, private and in my control [...] [P6]

Another aspect of the theme of personalisation that came up in the interviews suggested a need for online mental health tools to be adaptable to the ebbs and flows of a person's life. This came up in the context of daily use of online mental health tools, which was typical of those who used apps on their smartphone to help with meditating (guided meditation apps, meditation timer apps) or to track their mood or an activity they wanted to carry out regularly (tracking apps). With some participants, in particular those who used meditation apps, there was a sense that their daily engagement in the activity and related use of the app was part of their routine.

[...] for me personally I feel that Headspace it's flexible but I do it every day so it's kinda part of my life, part of my routine. [...] [P1] [talking about her use of the Headspace mediation app]

[...] I get my daughter ready for school, we have breakfast together, [...] then I'll do the meditation then and that generally tends to relax me and get me set up for the morning [P8] [talking about his daily use of a guided mediation app]

A few of these participants, who reported not having engaged in formal meditation practice before, had been steadily using a guided meditation app daily for some time (a few months to over a year), suggesting a possible role of the app in helping them sustain a daily meditation habit. One of them stated that the structured approach of the guided meditation app he was using (called Headspace) helped with regular use and practice.

[...] the Headspace one 'cause it's so structured, you get into a programme really well [...] [P8]

However, an online mental health tool based on a structured but constrictive approach could end up having the opposite effect. This was evident when participants talked about their use of self-tracking apps. Users of certain self-tracking apps are required to log information daily or regularly (e.g. record their mood or weight, keep task lists up to date, etc.) in order for the app to fulfil its tracking function correctly. With regard to online mental health apps with functions to help manage and keep track of tasks and activities, a few participants liked the idea of such functions but found that the work it required of them eventually became tiring, counterproductive, or meaningless. There was a sense in which it assumed connotations of a requirement imposed top-down that lacked the flexibility to accommodate the 'slip-ups' that are an inevitable part of the hard process of trying to change ones' habits or develop new ones. This led people to lose motivation and give up using a self-tracking app.

[...] I liked the idea of having there being charts and things like that which would track different things but [...] if you didn't fill everything in

you'd feel like you had a catch-up job to input your data [...] it would feel like a task then, to input data rather than to use it more personally [...] [P6]

I feel sometimes that it's too much work, [...] if you have any mental distractions or mental conditions or things that you struggle- or mental health struggles [...] the last thing I need is something to dissect further [...] and making sure that all the structures in it are up to date or whatever, [...] It works for the beginning and then after a while it's just like, what's the point [P10] [discussing his use of self-tracking apps to help with his mental health]

Along the same lines, the same participants questioned the usefulness of setting an app to send a daily reminder for an activity they wanted to do (e.g. meditating, exercising). Reminders sometimes caused annoyance and turned an activity into an added burden rather than helping with keeping up engaging in it or building it into a daily habit. Again, this seemed to be linked to the divergence between the inflexibility of daily reminders and the 'messiness' of daily life and being human.

[...] maybe today I just don't want to think about exercising, like I already have enough things to think about, I don't need a- 'oh it's time for your walk' reminder, you know? So that's where I guess that's how you start to lose interest [...] it becomes work, not enjoyable work [P10] [discussing his use of self-tracking apps to help with his mental health]

[...] at the moment I set [the app] to remind me to do like a daily meditation and it's just annoying me [...] I know well enough that that's something I want to do and if it's gonna happen I'll go and do it anyway, [...] I haven't taken it off yet but it's still reminding me and I've ignored it every single time [P6]

Theme 4 – It begins with a click: The process of finding and choosing online mental health tools

This theme is about the process of finding online mental health tools and the decisions participants made as part of that process to select a suitable online mental health tool. Participants typically found online mental health tools over the Internet and out of their own interest, research, and exploration.

Finding an online mental health tool as a result of an online search was typical of the participants who used apps to help with their mental health. These participants primarily found the apps by searching app stores (e.g. Google Play).

I would have just gone on the Play store and kept scrolling through them until I found something that was just a timer [P2]

I consciously looked for the organisational app and I consciously looked for the activity tracker [...] on the app store [P10]

Occasionally, participants reported finding an online mental health tool as a result of doing a search on the Internet. Such searches were not necessarily aimed at finding any online mental health tools, such as when participants accidentally discovered one while searching online for mental health information or how to get support.

I [...] where do you hear about these groups? How do you find them?

P Well I'm just googling, I just google [...]
[P3] [on finding online poetry groups]

[...] I was searching online to see to find a counsellor [...] [P7]

In a few cases, participants reported finding an online mental health tool through social media, such as by seeing it advertised there.

[...] And then Calm I think I just saw Instagram ads for it so I just clicked on it one day [...] [P7]

Some participants found out about an online mental health tool directly from its provider. This was either while visiting their website or, in one case, through information disseminated by the provider in other ways. The providers included formal ones (mental health organisation, counselling service), a mindfulness practitioner, and two online learning platforms.²¹

[...] I was looking on the Aware website and I came across it there [...]
[P6] [on how she discovered the Aware online self-help programme]

[...] the guy who does the [online] courses he has a daily (bell) that you can get sent to your inbox and he has then his ads about what he's doing but it was directly from him, either an article²² or his email thing that he sends out that I subscribed to [P1]

A few participants had found online mental health tools through recommendations from other people who had used them.

[...] I remember a friend of mine was like, oh, try this, this really helped me, and I would use it sometimes [...] [P10]

[...] it was the online [mindfulness] courses that I decided to have a go with first [...] And it's possible that someone could've mentioned

²¹ The online learning platforms were used by one participant to do online informational courses on mental health topics.

²² The provider of the online mindfulness course this participant is talking about, whose name is Pdraig O'Morain, is a counsellor and mindfulness practitioner who also writes for the Irish Times on mental health and wellbeing.

Headspace because there was a discussion forum [P1] [on how she heard about the Headspace meditation app]

One participant had been pointed to an online mental health tool by a mental health professional.

The [email] counsellor in Turn2Me recommended Bodywhys [P7]

Whether participants intentionally looked for an online mental health tool, came across one, or followed a recommendation to one, the process of finding a suitable online mental health tool was often one of exploration. Many participants researched and tried out their finds. Part of this process involved reading information about online mental health tools, when available. Such information came mainly from descriptions on app stores and the reviews and ratings posted by other users, but websites of online mental health tools and articles were also mentioned.

[...] the description would be important, I'd want to see in the description does it tell you what it does and is it clear what the free functions are or aren't [...] I think the reviews as well like- you know, if something had no reviews or any bad reviews [...] [P6] [participant on browsing for mental health apps on the app store]

[...] I read the syllabus [of online mental health courses] and who is this course aimed at, [...] if it says that's for general information or if it is that will help you develop or understand your mental health that's what interests me [P4] [participant on choosing online courses on mental health topics]

Additionally, participants tried out their finds and discovered by trial and error which ones they did or did not like and find helpful. For the participants who looked for apps, this often involved downloading and trying out more than one app. Other kinds of online mental health resources were also found through a similar trial-and-error process.

[...] I looked at a number of different ones originally I looked at Calm I looked at some [...] free apps [...] just to see how much of a help they were [...] [P8] [participant on looking for a meditation app]

[...] I just decided to research and (and) kinda put my trust into whatever I find [P1] [participant on looking for self-hypnosis tracks on the Internet to help with anxiety]

As part of the process of finding and choosing a suitable mental health app, a few participants stated their preference for apps with certain characteristics. These participants expressed a desire for a mental health app with few core, straightforward functions unencumbered by lots of additional or sophisticated functions, which they felt were unnecessary or a distraction.

[...] it was a process of having to download a few different apps, try them out and until I got what I wanted which was a very barebones timer, [...] I probably would have gotten that one first [Headspace app] and then () a lot of excess (aid) I don't need or don't want, I just want a timer so I would have not bothered with that [...] [P2]

[...] sometimes these apps are a bit too much, like there's too many things happening- [...] you have to put your name, put your email, put this and put that, and track this and track that, I don't find it helpful, [...] just () such a simple thing that () it's a simple gif [P10] [comparing the simplicity of one of his online mental health tools (a gif image for relaxation) with more complex mental health apps]

Likewise, a few participants reported liking mental health apps with a simple design or aesthetic and pointed out how aesthetic preferences could play a part when deciding on a suitable mental health app.

[...] I don't like in Calm all the graphics and the cartoons and stuff like that, that wouldn't be my cup of tea, I just liked the simplicity of Insight Timer [...] [P7] [talking about the Insight Timer meditation app]

[...] the activity tracker [app] (was) a nice design, simplistic design [...] if an app looks nicer and it's more simplistic and it's more thought out that would make me probably download that one than the other one. [...] [P10]

Theme 5 – To pay or not to pay? Benefit- and value-based appraisal of paid online mental health tools

This theme presents the finding that participants accepted having to pay to use an online mental health tool, but they did not buy blindly. Rather, they took into account a variety of aspects to decide whether to buy an online mental health tool, assess whether buying it had been worth it, or choose between free and paid alternatives.

Participants had used both free and paid online mental health tools, and seemed overall to have been more likely to have used free options. Most participants did not have a problem with being charged *per se*, and accepted that there were free as well as paid online mental health tools. Some invoked common-sense explanations for accepting that they may have to pay for the use of an online mental health tool, such as that the creators of such tools “*have to make money*” or recognising that “*there's work put into these apps*”.

I Are you okay with idea of paying for an app?

P Yeah I am yeah [...] Well they make money (you) have to make some. [...]
[P5]

[...] I understand that there's work put into these apps and if they work yeah why not paying for the use of the app [...] [P10]

While they accepted that they may be charged for the use of an online mental health tool, the participants discriminated whether it was worth paying for one. This was done by taking into account various aspects of online mental health tools. Cost was the aspect most commented upon. Participants typically remarked that a paid online mental health tool they used was reasonably priced or relatively inexpensive. A few mentioned buying items in a bundle rather than individually, which resulted in better value for money. This shows that participants paid attention to how much they were going to pay for an online mental health tool, and that they valued affordability.

[...] I don't agree with exorbitant amounts but like thirty-five euro a year I think it's reasonable [...] [P5] [talking about the price of a meditation app]

I said I'm going to pay for the Insight Timer one, but I don't even think it's very expensive [P7]

[...] the hypnosis downloads [...] included ten downloads and that course [of hypnosis downloads] was maybe thirty dollars, but if you buy them individually [...] they're ten dollars or something each [...] [P1]

Other aspects that the participants took into account included the helpfulness of an online mental health tool, its quality, content or features on offer, type, and amount of use one got out of it. The participants weighed these aspects against one another and the cost of an online mental health tool to decide whether an online mental health tool was worth paying for. They also weighed online mental health tools against each other (or other alternatives) based on those aspects, to choose which ones to use or to choose between a free and a paid one.

[...] even if I (did have) to pay the fifty-five [Euro], no, because I would have already got the value out of it and the peace of mind of it already, in a couple of months, [...] so I don't have a problem paying for it, [...] some of the other- cheaper crappier apps I would have a problem with, when you compare it to the likes of Headspace with the massive library

of different meditations and the animations and the videos and all that stuff [...] [commenting on paying for the use of the Headspace meditation app] [P8]

I don't do the paid version because what you have more than that is a quiz to see if you have understood so it's not really interesting for me or a certificate that says that you have taken the course but it's not relevant to me [P4]

One participant stated an altruistic motive for paying for an online mental health tool. He described paying as an act of altruism for the benefit of a good cause, namely supporting those who develop online mental health tools so that they can keep helping people.

[...] if they work yeah why not [paying for an online mental health tool], like of course, like they're helping people so you wanna help them keep providing that and making it better [P10]

Participants also appreciated having the opportunity to try out an online mental health tool for free for a time before deciding to buy it, especially apps. This allowed them to see what an app they intended to use to support their mental health was like, whether they liked it, whether it may be helpful, and consequently decide whether to buy it or not.

[...] I was allowed to use it for a period of time, a month I think, and I liked the way it was, I liked the shortness, the day- daily, the girl's voice is very soothing voice and I bought it and I started using it [...] [P5]

A few participants highlighted the need of a free trial to be sufficiently long to allow them to properly appraise an app before committing to buying it.

[...] I would definitely want to try it for free first and then I would definitely pay, like- if Insight Timer had been paid I would have paid for it, after say if it was like a month-free trial or something like that I would have paid for it afterwards [...] [P7]

A problematic aspect of paid online mental health tools, highlighted by some participants, had to do with “hard sell” or “sneaky” sales practices they sometimes encountered in wellbeing and mental health apps. Such practices included, for example, tempting the user in with initially free content, opportunistic adverts encouraging the user to upgrade to paid content, being required to register one’s payment details upfront to get the free trial, or being charged upfront without allowing one to look at the app’s content first. This could affect one’s decision to use an app at all.

[...] [the Headspace app] doesn't seem to be a hard sell (that's really it) you know, when you buy they'll give you a free package and if you want to log in you have to take the premium level and all this nonsense, so that's what I like about it [P8]

[...] the pay and you have a week trial and then, you know, it's kind of sneaky because then you forget to cancel it and then they charge you [...] [P10]

A few participant contrasted the use of such sales practices by mental health and wellbeing apps with other kinds of apps (e.g. the app of a yoga business). They commented that while they might not be as problematic when found in other types of apps, their use by apps intended for mental wellbeing support disregards the possible sensitivities and needs of people with mental health problems.

[...] I guess it depends on the app, if () to help people, like, those people who have mental struggles, they're already struggling with a couple of things, the last thing they need is feeling they've been manipulated [...] [P10]

[...] I think you are just extra sensitive if you're using it [mental health app] for any type of mental health purpose as well. [...] if it was for a yoga thing I'd be like, okay this is a business, this is a service, I'm getting a taster here and now they wanna sell me more, grand. When it's been to do with mental health I'm just like {argh ((makes sound to

communicate discomfort))) and you just kinda wanna run away from things shouting at you (with) ads and things [...] you kinda just get triggered and put off and it doesn't make it feel like a safe I think anymore or something [...] [P6]

One participant spoke at length about the adverse effects of pop-up adverts in mental health apps. The ads intruded on and disrupted the quiet and privacy one would need in order to engage in certain exercises on a mental health app, such as self-reflecting activities.

[...] they are intrusive, because then if you're choosing to go and do some reflecting or some work, you wanna feel that you're in a quiet private space and you don't know when they're going to appear on the page or when they'll pop up in the middle of something, [...] you could get this ad going, hey! you're using this app, let's get more features for you! and you're like {haaa! ((makes sound to jokingly communicate being scared)))} Close and put it away so yeah it's just not really conducive [...] [P6]

By contrast to wellbeing and mental health apps with aggressive or otherwise questionable sales practices, participants appreciated those that avoided persistently soliciting users to sign up to paid content or upgrades and that were transparent about what their free and paid content included.

[...] there's no ads as far as I'm aware on Insight Timer, and I've never been interrupted or there's never been pop-ups or anything like that, but they do have that option to buy those classes, [...] but you're not getting all the pop-ups and stuff [...] [P7]

I think even if there was one and it kinda said, [...] we offer two types and one is (at) a very small fee, come use it, but we want you to use it quietly, safely, () and then if you want more functions there is this other version you can have for a higher price and if I saw that I would

have gone, brilliant, they allow me to try it but to pay a small amount, and I can try one thing in it and see what the platform is like [...] [P6]

Theme 6 – Who can I trust? Appraising the trustworthiness of online mental health tools

This theme refers to the participants assessing the trustworthiness of mental health resources available online and their providers. They emphasised the importance of trusted and expert-based resources and raised concerns with unsafe ones.

Several participants made comments about the reliability of the providers and creators of online mental health tools. Participants highlighted that an online mental health tool they used came from a trusted or reputable provider, namely one with relevant expertise, which they felt was a good assurance for the overall quality and reliability of the online mental health tool. Trusted providers included mental health organisations, colleges / universities, websites of official health organisations (e.g. HSE), well-established and well-known treatment and support services (e.g. Aware)²³, and popular online platforms disseminating expert-based knowledge to the general public (e.g. TED Talks, Big Think).²⁴

[...] I think the ones that are designed by colleges worldwide they are quite reliable, you are not probably encountering wrong information or badly updated because they are kept constantly updated [P4] [talking about online courses on mental health topics]

[...] because Aware is obviously a well know Irish organisation I thought, well I'll go there [Aware website] and I'll have a look at their

²³ Aware is an Irish non-profit organisation that provides support to people who experience anxiety, depression, and bipolar disorder.

²⁴ TED Talks are short talks given by experts on almost any topic. Big Think is a multimedia website with interviews, articles, and presentations by experts in a variety of fields. The talks are shared online.

information as well so that's where the Aware [online self-help programme] came from [...] [P6]

Basically it's two online resources, I'm subscribed through the Facebook for two, it's TED Talks [...] you know the scientists they present the research results and opinions and talks on so-called TED Talks [online]. [...] Second platform is Big Think [...] it's Internet site that presents in five minutes format usually YouTube links of another speakers who are psychiatrists, psychologists, anthropologists, and lot of other topics [...] the major provider is TED Talks and Big Think speakers, [...] where I'm () taking information which I respect as information with scientific background. [P9]

Some participants talked positively of the person behind the online mindfulness course or guided meditation app they used, expressing trust in the role and intentions of this person as provider of such a tool. This was based on their experience with using the course or app and what they knew of this person's expertise (e.g. their training in meditation, their understanding of mental health problems). Sometimes they noted that this person had a presence on the course or app that contributed to there being a form of rapport with their users (e.g. through videos, quality of their voice) and stressed that their intentions as providers of a (paid) meditation tool seemed genuine rather than profit driven.

[...] in the online course I think the man kinda had a soothing voice too and it was nice to almost kinda- [...] almost know the person who's written the course, [...] it's like okay he seems he doesn't seem like a crazy person or he doesn't seem like he's (gonna) just in it for the money or something you know [...] [P1]²⁵

[...] I think he [meditation app creator] was a Buddhist monk for like twenty odd years and went around and (did all different courses in meditation) so- he seems to- as well as talking the talk he walks the

²⁵ The online course had videos of the teacher talking to the course users.

walk, he's you know, he's sort of authentic [...] it sort of feels like you got some sort of connection there with him and it doesn't seem to be a hard sell [...] (they seem to be on the level with it) in terms of what it is, and in terms of value for money of what you're getting [...] So there would be I suppose a level of trust in both the product itself and the people behind it [P8]

Beside expert sources such as mental health organisations and meditation practitioners, the experiences of users of an online mental health tool could also offer a measure of its dependability. As noted in Theme 4, participants who used meditation and mental health apps looked at the reviews and ratings given by other users, such as on the app store, when looking for a suitable app. In another example, one participant had heard about a meditation app in the past, but it wasn't until he heard it being recommended by a public figure he followed (Blindboy) that he decided to look into it.²⁶

I [...] just to go back to the Insight Timer, when you said you found that through the Google app store, how would you have chosen- like I'm assuming you would have seen different ones
P Yeah no, star rating, it got really high star rating [...] it definitely was kinda one of the higher star rating ones [...]
 [P7]

[...] I had been looking at different apps and- I had been listening to Blindboy of course on the- podcast and he was talking about Headspace [...] I heard about it before, [...] but- he was talking () that it worked for him [...] So that was it, (I said) I'll have a go with that [P8]

²⁶ Blindboy regularly discusses mental health in interviews and on his podcast.

One participant looked into a meditation app after seeing it advertised as winner of a quality award.

[...] I came up on Facebook the Calm that it got some prize for the quality of app it was so I went and investigated [...] [P5]

Participants also highlighted a number of issues around the trustworthiness of online mental health tools. Some stated their concerns about unreliable or outright unsafe mental health content that can be found online and the harmful consequences that can come from believing or applying that information to oneself, particularly for people in a heightened state of mental distress. To avoid this, the participants stressed the importance of sticking to trusted sources such as official websites and well known organisations or getting guidance from a mental health expert, and generally being discerning and careful when getting mental health information and self-help (e.g. apps) from the Internet.

[...] I do think there is lot of negative stuff online as well that kinda goes unto the guise of being helpful, [...] because of going online that whole thing of like, oh there is something wrong with my eye, oh my god you've cancer, I think the mental health thing can be the same [...] it can get people into a bit of a panic as well and make- that a lot worse [...] [P7]

[...] sometimes when you (hang into) forums you can find a lot of very bizarre information that's actually not that beneficial to you at all particularly if you are, you know, in a bad state mentally, [...] so actually having a counsellor to say I was reading about this and he'd be able to like actively like say you are walking a dangerous line with obsessive behaviour [...] most people are not going to be able to draw that line by themselves unless they are getting support I would think if they have problems with mental health [P2]

A few participants expressed concerns that there may be people creating online mental health tools without having the necessary expertise. There was also a concern with coming

across ill-intentioned individuals or providers of online mental health tools interested in making a profit rather than helping people. This made them uneasy about how to know if an online mental health tool was legitimate and safe to use. Once again, they highlighted the need for professionally informed guidelines.

[...] you never know who you might come across [on online forums] [...] (it would be a concern) 'cause it's very easy to manipulate people-[P3]

[...] anyone can just go and create an app and this is a space that people know there's interest in, so, you've no idea who's created the app, what information they have, what's their intention, is this purely commercial like exploit or is this something that someone really wants to do to help [...] Because that would definitely make a difference, like if there was for example on a place like Aware and it had some type of review or guidelines or suggestions about what to use, how to use or considerations or cautions or different things like that [...] [P6]

Concerns were also raised about the protection of personal information, privacy, and anonymity by an online mental health tool. This was represented by two participants who reported being asked information of a personal nature during the sign up process of an online mental health tool. Neither was comfortable with giving that information and abandoned the process. This was related to a number of reasons, including the nature of the information they were being asked, issues with the trustworthiness of the provider, and not being allowed to sign up without providing said information. Both participants raised concerns about sharing information such as their medical history or mental health problem with a website of unknown reputation or that they didn't know enough about to trust it with such personal and sensitive information, with the possible risk of their privacy being breached.

I downloaded the [counselling] app and went to sign on to it but it started asking an awful lot of questions and I just stopped [...] you're giving your data, your information, medical history and everything, to

a site that you don't know anything about so I wasn't comfortable with it [P5]

I think you had to fill in some sort of a questionnaire before you would get to the app features [...] I wasn't even sure that I wanted to use it first, so I didn't really want to be putting in any information into an app that I didn't trust [...] [P7]

One of these participants also stressed her unease with an online mental health tool that requested her to sign in from a social media account, by contrast to having the option to sign up more anonymously with a nickname and old email address.

[...] with Insight Timer [...] I just put in just a nickname and then an old email address and that was it, whereas I think with Calm it might have asked me to sign in through Facebook or Google and I didn't want to do it [P7]

The same participant, who did email counselling, further stressed the importance of the protection of personal information and privacy when she discussed the security features of the email counselling platform (message encryption, double-verification log-in process), which made her confident that her information was secure. For example, she stated:

[...] Turn2Me even if you did with the emails that we did, all the emails were encrypted, so I felt very secure in the information that I was sending [...] [P7]

Theme 7 – All devices are not the same

This theme is about the basis on which people decided what computer device to access an online mental health tool from. Both smartphones and laptops (or computers) were widely used among the participants as points of access. The basis for the decisions about which device to use differed between the two types of devices.

Having tools on their smartphone to help with their mental health was common among the interview participants, usually (but not always) in the form of so-called apps (mobile applications).²⁷ Participants viewed smartphones and apps as a very convenient and practical ways to access online mental health tools. This was represented in a number of ways. Some participants valued that having resources on their smartphone to help with their mental health made such resources readily available to them, ready for them to easily access at any time, as a result of their portability combined with participants' habit of carrying their smartphones with them at all times.

The [pen-and-paper] notebook didn't feel like it would be immediate enough this time. So, using phone has felt really accessible as I know it's always on me [...] [P6] [commenting on her use of a smartphone app to track her mood daily]

You can carry it (wherever) you want, wherever you want, it's always there [P10] [talking about an animated image file he kept on his smartphone to help calm his breathing when anxious]

Although it was common for participants to use online mental health tools while at home, using smartphones as a point of access also gave them the flexibility and convenience to use such tools anywhere they may be or at a location of their choice by contrast to depending on a specific location or a laptop or computer for access.

Since I wanted something I could use when I was potentially at work or anywhere outside where I wouldn't have access to a computer or a laptop it was more convenient [P2] [on using a meditation timer app on his phone]

²⁷ Other, less common formats included self-hypnosis mp3 audios, an animated image file saved on one's phone gallery, and looking at mental health content on the YouTube website from smartphone.

[...] I like the versatility of it, because then I have brought it away on holidays [...] [P5] [on using a guided meditation app on her phone]

This flexibility was also reflected in the variety of settings and situations in which participants had used, or tried using, an online mental health tool, such as at work, in a park, while out on a hike, on public transport, at other people's houses, while in the car or jogging. For example:

[...] I've done it on buses and trains when I have time, or other people's houses or my boyfriend's home [...] if I go somewhere and I'm staying in a friend's house and I haven't done it I'll do it at night before bed in their house too [P1] [on using a meditation app]

[...] I would have used it a few times, which worked really nicely actually, if I was, like, gone hiking or something like that [...] [P7] [on using a meditation app]

[...] I'd do it [listen to mental health content on YouTube] when I'm doing other things () commuting [...] also then if I go running [...] [P6]

For the participants who used a meditation app to help with problem sleeping and getting to sleep, having the app on their smartphone meant having the flexibility and convenience of using the app in bed.

[...] the phone is just kinda easier especially if it's at night and you're just going to sleep it's kind of, you know, easier [P1]

[...] it's mainly the app on the phone because I can bring it to bed with me [...] I can bring it anywhere I want [P5] [in response to whether she would use the meditation app on a computer]

Highlighting one more aspect of how smartphones and apps provide a convenient and practical way to access online mental health tools, some participants also pointed out that

apps and other such resources on smartphone could be accessed effortlessly through few quick actions and minimal amount of equipment, particularly when compared with laptop or desktop computers or other alternatives.

[...] it's on my phone, it's convenient, it always works you know, no paraphernalia with it you know, you don't have to carry a CD player and a CD and I just find it a lot user-friendly [P5] [Comparing a meditation app with a meditation CD]

[...] The phone is easy for me, I can just whip it out, put the headphones in and just anywhere I want, you know [P8] [on his preference to use a meditation app on his smartphone]

While participants valued the convenience, practicality, and flexibility provided by accessing online mental health tools on a smartphone, they found that not all online mental health tools were better accessed in this way. A laptop or desktop computer was the main device used for engaging in some online mental health tools or parts of them. This mostly related to online mental health programmes or courses, participating in online support groups, and activities involving typing, which participants found more comfortable to carry out on a laptop or desktop computer and were not easily done on a smartphone. In particular, activities that involved extensive typing and a desire for faster and more comfortable typing were mentioned by a number of these participants as reasons for preferring a laptop or desktop computer.

I think you could possibly get it to work on a mobile device but I never really tried because, you know, it's better for watching the videos or the discussion with people, it's just more comfortable [P1] [talking about her preference to use her laptop to do online mindfulness courses]

The Aware [online self-help programme] comes with an app as well [...] I had it there but I always chose to go and use it on the computer and partly (it is as well) 'cause I type fast so if I'm going to be writing any

*comments of any significant length [...] being able to type freely is great
[...] [P6]*

Sometimes, participants combined the use of smartphone and laptop / desktop computer, for example using the smartphone for its quick, ready accessibility and a laptop / desktop computer to engage with certain activities more comfortably.

[...] I am using the Google excel app daily where I've made my own mood tracker [...] feels great to have it at my fingertips anytime [on the smartphone], to know I can also access it on computer on Google drive if I want to look back easily to learn from what I've written [...] [P6]

I think with the Bodywhys one [online chat-based support group] because it was the group I just found it quicker to text- or quicker to write () on the laptop rather than my phone, [...] Same [for the email counselling] 'cause it would have been such a long email I couldn't- I've read them on my phone but I wouldn't have been (-) [P7]

Theme 8 – You can do them when you choose to: The flexibility of use of online mental health tools

The great majority of the online resources used by the interview participants to help with their mental health were available 24/7 (at least for a time) and could therefore be accessed at any time of their day. Some participants made comments that highlighted how they were able to use an online mental health tool in their own time. This was expressed as the opportunity to use an online mental health tool when one chose to, at one's own pace, or fit its use in with one's own time availability or circumstances.

[...] the second [online mental health tool] I use is a website [...] where you can download hypnosis sessions for self-hypnosis and then you can do them when you choose to do them [...] [P1]

I try to pick [online mental health] courses that let you have the material for ever or for a long period of time. There are some of them that have a deadline [...] I prefer ones that leave you the time to do at your own pace [P4]

I think end of day I'd tend to use [the online self-help programme] 'cause I think otherwise if it's at the beginning of the day it's quite involved emotionally to get into it so I wouldn't necessarily want to open any cans of worms in the morning time [...] [P6]

A few of these participants remarked how convenient it was to be able to access an online mental health tool when it suited them rather than having to adapt to the schedule imposed by the provider of a service.

I think online gives also the flexibility of using the time that you have, you do not maybe have to change your whole schedule to fit into the slot that you're offered of time and day [...] [P4]

[...] I wanted to actually familiarise myself with meditation mindfulness, but on my own, I'm not very good at committing to things so the [meditation] app allows me to do it whenever I want to, when it's convenient to me rather than going to a [meditation] class [...] [P5]

Theme 9 – Layers of technology

This theme refers to a number of aspects related to technology that can impact on people's chances to access online mental health tools and benefit from them, and their decision about whether to use them or not.

Some participants reported experiencing issues to do with technical aspects of the online mental health tools they used, mostly including malfunctions and other issues that

impacted the user-friendliness of an online mental health tool, such as glitches, a less than intuitive interface, or poor optimisation for smartphone use. The nature and extent of the issues encountered, and the level of tolerance towards them, varied. Some of the issues were described as minor and did not appear to pose a particular problem. Occasionally the participants were able to solve the issue or find a way around it.

[...] there were some bugs in the [online self-help] programme on computer as well, (minor) ones nothing major [...] [P6]

[...] some parts of the interface weren't great, [...] it took a little while to figure out how to get certain settings to save properly, but yeah I got them working in the end. [...] [P2]

Other usability and technical issues that affected people's ability to use an online mental health tool were found to be more annoying or even upsetting, and could lead to nonuse of an online mental health tool.

[...] the MoodSpace [app] I probably would still use that if it were- easier to actually re-read 'cause the little clouds²⁸ if you write more than that you can't easily scroll [...] [P6]

[...] about Headspace I suppose the only issue I really had was the fact that it crashed which it's just a bit unsettling for someone who kind of I suppose relies on the programme [...] [P1]

One participant reported losing all his data records from an app he was using to keep track of activities he engaged in for his wellbeing, resulting in an inability to check his progress and achievements. This offers another example of the kind of technology-related issues and mishappenings that users of online mental health tools may have to deal with sometimes.

²⁸ She is referring to one of the journaling functions on the app.

[...] oh that actually annoyed me, the activity [tracker] one once lost the record, [...] so that was annoying, () that all that information is gone [...] [P10]

Although some participants reported encountering issues that affected the user-friendliness of an online mental health tool, several also stated that the online mental health tools they stuck with were easy to use, mainly due to being user-friendly, easy to browse and find one's way around, and having a simple sign-up process.

[...] I think that it's done in such a user friendly way that so many people can benefit from it [P1] [talking about a guided meditation app]

[...] it's very easy, there was no questions asked you just logged on, [...] I clicked on it and I downloaded the app and it was so easy to use [...]
[P5] [participant who accessed the app through clicking on an ad on Facebook]

Concerning access to the Internet and hardware (e.g. computer devices), problems with Internet connection while using an online mental health tool were few and limited to the few participants who reported experiencing slow or unstable connection. This appeared to have minimal impact on their use of an online mental health tool, such as because it happened infrequently.

I And have you ever had any technical issues while () you know
P Well when Internet connection is slow [...] But it happens once a year so () not a big issue
[P4]

I Have you ever encountered any technical issues with the app?
P Only- related to wi-fi [...] when there's been a messy signal in the house with the wi-fi, but no other- no, that never crashed in the middle of a meditation () nothing like that. [...]
[P8]

One participant highlighted the importance of the quality of the Internet connection to one's chances of benefiting from online mental health supports.

I would add (probably) [...]how speed of Internet affects the effectiveness of mental health support. [...] if- Internet would be low quality like cheap broadband, right? that would be different conversation, definitely it would end up much sooner than that one. [...]
[P9]

A person's level of familiarity with modern technology and having access to computers and the Internet were other factors that impacted on the chances of accessing and using online mental health tools, as stressed by a few participants.

[...] an awful lot of people with mental health difficulties aren't as au fait as myself with technology and they wouldn't have smartphones and they wouldn't have computers and laptops and the paraphernalia the hardware that you need to go with the services [...] I wouldn't be a high end user of the Internet, but for younger people I suppose they have erm it's more familiar for them. [...] [P5]

Similarly, one participant highlighted that getting Internet access could be a problem particularly for some groups, such as asylum seekers living in Direct Provision and homeless people, consequently limiting their chances to use online sources of mental health support.

[...] then we been evicted to homelessness, [...] when you're homeless you have no access to Internet and if you're isolated and if you're using not- not capable to use your source of support online, right? [...] [P9]

Lastly, the place of digital technology in people's lives was highlighted as bearing on people's use of online mental health tools. In some of the comments there was a sense in which the thought of looking online for mental health support would not be possible without the expansion of digital technologies in the mental health field and people's

awareness of digital technologies both in general (e.g. apps) and for mental health purposes specifically.

[...] there was a time after coming out of university where I definitely could have used counselling and I didn't have the resources to pay for it and online mental health resources definitely weren't as popular and they wouldn't have even crossed- like I wouldn't have thought to use the Internet for any type of mental health support back then [...] [P7]

[...] other times there is just that notion like- oh there must be an app for that [...] [P6]

I didn't even know there was online mental health apps until I saw your [research advert] [P3]

One participant regarded the adoption of online solutions in the mental health field as part of a broader societal and generational change brought forth by the digitalisation of ways of interacting with others (e.g. Aware providing mental health support online, companies moving to chat-based customer service) and young generations' familiarity with such modes of communication by contrast to older generations.

I'm fifty-four, [...] I was involved with Aware and they do an awful lot (out there), they have support now online like that's the new children, young people spend an awful lot of time on their own computers and their phones so I think that's the way forward really. [...] [P5]

For a few participants, the widespread presence of the Internet and technology in their daily lives could become a factor contributing to choosing against using online mental health tools. These participants expressed reluctance or concern at getting mental health support through the medium of technology (e.g. apps, emails) on top of already spending a lot of time online and using computer devices extensively as part of their daily life, which was sometimes unavoidable (e.g. due to work). They expressed appreciation for the element of disconnection from using Internet and technology that is embedded in in-

person support. The perceived overabundance of technology use in one's everyday life could also reinforce the need or appreciation for the in-person element of traditional treatment.

[...] I probably wouldn't be as overly enthusiastic to use mental health apps in general because of my job [...] I just use so much stuff online already that it's nice not to have to do it online [P7]

[...] the thing about counselling you're talking to a person, face to face, [...] I do that enough on this- you know [use technology], and sometimes I think that's actually a problem that I do it so much, so like I'd rather go and have thirty minutes talk with someone face to face. [...] [P10]

One of these participants, who had done email counselling, had her own way of preventing time spent online to respond to the email counsellor from spilling over into her downtime.

[...] because I have to use technology so much for work, often times I don't want to use it when I go home, [...] I find myself going into work earlier to respond to the [counselling] email because I was like, this is where I do all the- online piece and then when I go home I try and disconnect from that a bit [P7]

Theme 10 – There needs to be more progress in mental health care

Participants noted a number of issues that affected people's opportunities to obtain mental health support that is affordable, timely, helpful, uninterrupted, and free from the stigma associated with mental health problems. This highlighted the need for improvements in those areas. The issues discussed involved both traditional and online mental health supports.

The financial cost of accessing mental health supports was the most salient issue, with several participants commenting on it. Participants identified standard rates of talking therapy (including when delivered online such as in the form of email counselling) and limited options for affordable mental health supports as barriers to accessing mental health services, especially for people who are financially insecure. The importance of and need for affordable or free mental health supports were emphasised.

[...] therapy seems to be getting more expensive like (the one I started was) with xxxxx [in-person counselling service] [...] and he [counsellor] kept me on at the same rate that he started with () which is very convenient for me [...] [P2]

[...] I think the emails were thirty or forty euro a week, so if you don't have a job that's a lot of money [P7] [commenting on the rates of email counselling]

[...] I feel like it [Headspace meditation app] was beneficial enough that it was worth the price, in fact I probably would have paid more for Headspace [...] But I know a lot of people wouldn't be in that situation to do that so it's good that it's affordable [P1]

One participant highlighted the restricted chances for Internet access of someone with limited financial means who lives in the Direct Provision system.

[...] Without online, I could compare life without online because when you're in Direct Provision on nineteen euro ten cents () a week, you attending public library, because there is one hour [free] online [...] [P9]

A few suggestions were made about how financial barriers to accessing online mental health resources and the Internet could be lowered or eliminated, by calling on the Government or providers of online mental health tools to implement initiatives for the benefit of groups such as students and people with severe mental health problems.

[...] it would be great, I mean, if the government or a different agency did take () the app, you know, a certain amount of apps on and gave them to young people [...] [P8]

[...] people with severe mental health impairment, people who are living in isolated and (everything) they could apply for additional benefit [for Internet access] as we have living alone allowance for phone connection [...] [P9]

Alongside financial barriers, other issues affecting people's chances of accessing needed support, as pointed out by some participants, included inadequate or unhelpful services (e.g. A&E for crisis intervention), time-limited services (e.g. free email counselling for a limited number of weeks), services unable to offer timely appointments, and the lack of continuity of care for the recipient that could result from all this.

[...] I hear that they use in other countries crisis intervention online with Skype [...] I heard that they were considering that in Ireland, I don't know how well it will work, but at least it's something, you know, at the moment the situation is unbelievable, you know, going through A&E if you have a problem [...] [P5]

[...] he [therapist] has maybe limited resources that I have maybe just one hour a week for six months and then nothing for three years [...] [P4]

[...] those email support sessions were really good, but at the end of the day it was only one for six to eight weeks, [...] there needs to be more progress, like all these things kind of like pick you up and might get you a little bit and then drop you again, where there seems to be very little start to finish support [P7]

Some comments suggested that online tools that are specifically aimed at people with mental health problems can have a negative connotation for some users because of the

stigma associated with mental health problems. For a few participants, a positive aspect of the meditation apps they used was that they were not for people with mental health problems specifically, rather for anyone with an interest in practicing meditation and enhancing their wellbeing. This made them feel they were not being singled out as people with mental health problems, which in turn contributed to feeling more comfortable with using such a tool to help with their mental health problem.

[...] I think it doesn't label you either, you know, because it's not the sort of app that only people with mental health problems would have, you know, it's the sort of app that anyone would use [P5]

[...] actually I don't think the main focus of [the app] is mental health, the main focus is on different types of guided meditations, just a lot of those guided meditations happen to be around mental health issues, [...] so it just feels a little bit more- when you're- still coming to terms with your own mental health it seems a bit easier to do that I think, when there's a lot of other aspects (of) the app [...] [P7]

Along a similar line, one participant proposed that the stigma associated with mental health problems might be a reason for choosing online tools that are unrelated to mental health rather than those that are explicitly focused on mental health. This participant had used a productivity app to help with sustaining behaviours that he felt would positively feed back into his mental health.²⁹

[...] I didn't use apps specifically designed for [mental health problems] but I kind of went around, like I used an app designed for something but in the long term, like, its connection is to improve your mental health [...] Maybe it's a stigma kind of thing, you know, I just downloaded an app to help my mental condition or my mental state, [...] maybe it has a negative effect that you're reminded [P10]

²⁹ Productivity apps are designed to assist with planning and managing tasks.

Another way in which the issue of mental health stigma came up was represented by the comments from one participant about being exposed to poor understanding and judgemental attitudes when attending mental health services. One way in which she brought this up was by criticising the lack of understanding and consideration displayed towards her husband by a member of staff at the outpatient mental health service he was attending.

[...] in that building I think they should train the receptionist because my husband happened that he had several mental health issues but he was in that specific moment afraid of heights and it is a building all glass, on the third floor so he was afraid to be in the waiting room because he could constantly see the void, so he talked to the receptionist of the mental health office and she said: Okay, you can wait on the ground floor- [...] And he went downstairs, [...] And the receptionist asked him to leave the building because he was annoying with his going nervously around. [...] I think they should give training, at least to understand when a person might have some issue and erm be considerate that they might [P4]

The same participant also talked about online mental health tools removing the risk of being exposed to others' prejudiced attitudes which may arise as a result of being seeing attending mental health services.

[...] it [online] also gives you confidentiality so you are not afraid of people seeing you there and judging because it happens [P4]

6.6 Summary of results

Using in-depth interviews, the purpose of Phase 2 of this study was to contribute depth of understanding to the investigation of people's use of online mental health tools. The thematic analysis of the interviews has yielded a number of key results.

Themes 1 and 2 offered key insights regarding the functions fulfilled by online mental health tools in the provision of mental health support. Theme 1 *'The more things that help the better: Online mental health tools expanding options for support'* showed that participants welcomed opportunities to avail of online mental health tools and that these tools contributed in their own way to getting mental health support. In particular, people looked favourably at online mental health tools expanding and diversifying available options for support alongside traditional treatments. People regarded both traditional treatments and online mental health tools as having a role to play in the provision of mental health support, but with the caveat that online mental health tools have potential limits and risks, especially when compared with face-to-face professional help.

Theme 2 *'Ad hoc support when highly distressed'* showed that one particular circumstance under which participants used an online mental health tool was when their need for mental health support was higher, such as while in a crisis period. Many also had online mental health tools on their smartphones (e.g. apps) that they used to get relief in the moment, such as when having an anxiety attack or struggling to get to sleep.

Theme 3 *'A tool you're in control of'* showed that people valued online mental health tools that could be tailored to their own preferences and needs. It further showed the difficulties that can arise for the user when trying to keep up with the inflexibility of self-tracking apps or daily activity reminders. This Theme also showed participants as regular users of online mental health tools as opposed to 'reactive' use which came up as part of Theme 2.

Theme 4 *'It begins with a click: Finding and choosing online mental health tools'* presented the process of finding online mental health tools. It showed that participants typically found online mental health tools as a result of their own interest and research, mostly based on online sources. It showed that participants actively chose to use online mental health tools and that they had a hands-on approach to finding the right online mental health tool for them, which consisted of exploring and trying out their finds. Together with Theme 5 and

Theme 6, this showed how participants navigated the wide and varied landscape of mental health resources available online. Theme 5 *'To pay or not to pay? Benefit- and value-based appraisal of paid online mental health tools'* highlighted participants' views towards paying for an online mental health tool and the decision-making process behind their decisions as to whether to buy one, assess whether buying one had been worth it, or choose between free and paid alternatives. People tried out paid online mental health tools before buying them and weighed their price against a number of other aspects such as overall quality and helpfulness, functions on offer, and perceived ethicality of their sales and advertising practices. Theme 6 *'Who can I trust? Appraising the trustworthiness of online mental health tools'* highlighted participants' acute awareness of the issue of the trustworthiness of mental health resources available online. It showed the challenges they faced in their searches for reliable online mental health tools and the strategies they implemented to get around these challenges, especially sticking to providers of trusted reputation and demonstrable expert-based knowledge, but also not taking everything at face value and looking up the reviews and ratings of other users of online mental health tools.

Theme 7 *'All devices are not the same'* presented the different bases for deciding which computer device to access an online mental health tool from. Smartphones and apps provided people with the convenience and flexibility of being able to readily access an online mental health tool whenever and wherever they wished, rather than depending on a specific location or a less portable device (laptop, computer) for access. At the same time, for online mental health tools that involved activities such as extensive typing, a larger device such as a laptop or computer better met participants' desire for faster and more effortless typing, which was not as easily done on a smaller device such as a smartphone.

Theme 8 *'You can do them when you choose to: The flexibility of use of online mental health tools'* showed the flexibility of use that came with being able to use an online mental health tool when it suited the user, as a result of such tools being accessible at all times rather than at specific times or days. This allowed people to choose when to do an online mental

health tool according to their own needs and preferences and time availability, or at a pace that suited them.

Theme 9 '*Layers of technology*' provided insights into a number of technology-related issues that can bear on people's opportunities to get access to and use online mental health tools. Participants experienced a mix of technical malfunctions and user-friendliness issues that ranged from minor and relatively unproblematic ones to more disruptive ones leading to nonuse. Additionally, while participants found online mental health tools easy to use and seemed to have encountered few and relatively unproblematic Internet connection issues, it was highlighted by a few that getting access to the Internet could be a problem particularly for marginalised groups such as homeless people and asylum seekers. Participants also reflected that online mental health tools were a relatively recent phenomenon brought forth by the expansion of digital technologies in the mental health field and many other areas of contemporary life. On the one hand this made it possible for people to find opportunities for mental health support online; on the other hand, the pervasive presence of technology in their daily lives and the lack of in-person face-to-face contact of much online interaction could spur reluctance towards using online mental health tools and contribute to choosing in-person face-to-face support instead.

Lastly, while Theme 9 focused on aspects specific to technology that affected people's chances to use and access online mental health tools, Theme 10 '*There needs to be more progress in mental health care*' continued on the topic of accessibility by focusing on broader issues that concern both traditional and online mental health supports, such as the costliness of getting talking therapy, the limited availability of more affordable options, inadequate crisis services, inability of services to offer support in a timely manner and for as long as needed, and the resulting lack of continuity of care. Participants emphasised the need for affordable as well as free mental health supports, particularly for the benefit of people with financial difficulties. A particular barrier associated with certain online mental health tools was related to the stigma associated with mental health problems. This was a sensitive area for some participants, who welcomed online tools with a broad focus on

enhancing mental wellbeing (e.g. meditation apps) rather than those aimed at people with mental health problems specifically, as these could make them feel labelled for having a mental health problem.

CHAPTER 7 – INTEGRATION OF RESULTS FROM PHASE I AND PHASE II

7.1 Introduction

Chapters 5 and 6 presented the results that were respectively generated out of the quantitative phase and the qualitative phase of the study. This chapter presents the outcomes of the integration of results. Subsequent to analysing each data set individually, the results from each phase were brought together to generate “new insights beyond the information gained from the separate quantitative and qualitative results” and thereby contribute to producing richer, more comprehensive interpretations of the study (Fetters et al., 2013, p. 2143). The chapter begins by describing the process through which the quantitative and qualitative results were integrated. Next, the outcomes of the integration analysis are presented. The chapter concludes with a summary of the integration results.

7.2 Integration process

As the collection and analysis of the quantitative and qualitative data were conceptualised as two independent phases, each phase produced its own set of results. Integration began at this point and involved jointly looking at, or merging, the quantitative and qualitative results. This was done by comparing the two sets of results, looking for a number of possible relationships between them: convergence (where there is coherence between results from the quantitative component and qualitative component of the study), dissonance or discrepancy (where results from different components contradict, conflict, or disagree with each other), complementarity (where results from different components do not converge or conflict with each other, rather they highlight different aspects of the same phenomenon which expand or help to elaborate or clarify the results of the other component), and silence (where a result arises from one component but is silent in the

other) (Farmer et al., 2006; Fetters et al., 2013; O’Cathain et al., 2010; Perlesz & Lindsay, 2003).

In order to compare them and consider whether and how they converged, diverged, complemented each other, or remained silent, the two sets of results were first inspected to seek out quantitative and qualitative results that related to common concepts or topic areas (Creswell & Plano Clark, 2018; Farmer et al., 2006). These results were jointly displayed in a table or integration matrix (see Appendix S for an extract of the integration matrix). This was a live document where the researcher organized the quantitative and qualitative results side by side, by concept, to allow for comparison (Creswell & Plano Clark, 2018; Fetters et al., 2013) and record the ensuing analysis. This was not always a linear process in which results were first identified and then compared, rather it sometimes took place iteratively as comparing initially selected results could point to additional areas of integration or potential connections with other results. Additionally, using the integration matrix to record how the quantitative and qualitative results compared with each other put in motion a “thinking-as-you-write” process (Murray, 2011, p. 100) that helped deepen the analysis of how the results converged, diverged, complemented each other, or remained silent. This led the integration process to organically expand beyond the integration matrix and become more of a connected narrative. This is demonstrated in the next section by describing the quantitative and qualitative results together in terms of their similarities and differences to show how they “weave(d) back and forth around similar themes or concepts” (Fetters et al., 2013, p. 2150).

The results of the integration are presented in the next section. Because the integration involved writing up the quantitative and qualitative results together to show how they connected, there is a repeat of some of the quantitative results. In addition, in a few cases some new quotes and one previously shown quote (all from the interview data) were used. The new quotes are from coded interview data that were not included in the final themes of the thematic analysis, but that became relevant during integration.

7.3 Integration results

The quantitative results, qualitative results, and previously unshown interview data that formed the integration material connected around a number of issues or concepts, mostly by converging or complementing each other. Additionally, there were two instances of tension (potential discrepancy) between results, and one instance where a result that came up in one phase of the study did not come up in the other (silence). Table 29 below provides an overview of how the quantitative and qualitative results were combined, the relationships that were found between them, and the eleven integration results that were consequently developed.

Table 29 - Overview of how the two sets of results were combined into the integration results

Quantitative results	Qualitative results	Relationships	Result of the integration
Helpfulness rating of online mental health tools. Mental health interventions received. Timing of using online mental health tools relative to receiving traditional mental health interventions. No traditional mental health interventions received.	Importance of in-person contact with mental health professional (T1). Value of online mental health tools in expanding available options for support (T1). Value of online mental health tools as alternatives to traditional treatments (T1).	Convergence, Complementarity	<i>Online mental health tools can help expand options for support</i>
Devices used to access online mental health tools. Types of online mental health tools used.	Different basis for using smartphones and laptop / desktops as points of access (T7).	Complementarity	<i>Availability of choices between different points of access matters</i>
Using online mental health tools because of possibility to start using them immediately. Using online mental health tools in one's own time or at one's own pace.	Value of online mental health tools in getting relief in the moment / whenever needed (T2) and role of smartphones in this (T7). Value of flexibility of choosing when / how much to use an online mental health tool (T2, T7) VS schedule-dependent support (T8).	Convergence, Complementarity	<i>Using it my way: Timeliness and flexibility of use in online mental health tools</i>
Use of online mental health tools out of desperation for help, especially among those seeking help for self-harm and feeling suicidal.	Increased need for support when in 'crisis' contributes to uptake of online mental health tools (T2). There are risks to seeking mental health support online on one's own (T1), especially when highly distressed (T1, T6).	Convergence, Complementarity, Discrepancy	<i>Turning to online mental health tools in desperate times</i>

Use of online mental health tools while on a waiting list for professional help, especially among those seeking help for self-harm and feeling suicidal.	Value of online mental health tools as an alternative to unavailable traditional treatments (T1).	Convergence, Complementarity	<i>Filling the need for support while waiting for treatment</i>
Use of online mental health tools to gain insights into how to manage their problem and learn about specific treatment approaches. Searching for mental health information online.	Value of online mental health tools to understanding one's mental health problems and learning how to deal with them (T1). Emotional benefits of this (T1).	Convergence, Complementarity	<i>Seeking knowledge to address the emotional and practical needs of coping with a mental health problem</i>
Use of online mental health tools to get help without needing to travel or leave the house.	Value of the physical act of going to therapy (T1).	Complementarity	<i>Variations in the meaningfulness of remotely accessible mental health support</i>
Using online mental health tools for privacy or anonymity reasons, especially among those seeking help for feeling low / sad / depressed and feeling suicidal.	Online can provide better privacy than in-person services, but online not intrinsically anonymous or private (coded qualitative data not included in themes). Concerns about confidentiality of personal information collected by online mental health tools (T6).	Complementarity	<i>Privacy and anonymity in online help seeking</i>
Use of online mental health tools because affordable / free. Money spent on online mental health tools. Income and occupation data.	Users weigh price of online mental health tools against other important factors (T5). Scarcity of affordable mental health treatments (T10) VS online mental health tools as an affordable alternative (T1).	Complementarity	<i>Choosing free / affordable online mental health tools: Option VS necessity</i>

Regularly experiencing poor Internet or mobile network signal while using an online mental health tool. Smartphone as the only device one has personal access to or goes online from.	Access to Internet and devices impacts who can access online mental health tools (T10). Usability issues common in online mental health tools and tolerated to various degrees (T9). Perceived overabundance of daily technology use can affect choice of online vs in-person support (T9).	Complementarity	<i>Technology and access to online mental health tools</i>
Finding out about online mental health tools through online searches. Finding out about online mental health tools through informal others. Receiving recommendations or hearing about online mental health tools from a healthcare professional.	Typical of people to find online mental tools by doing their own research rather than from others (T4). Importance of expert guidance from mental health professional VS risks of unsupervised searches for online mental health tools (T1). Strategies developed to minimise those risks (T6).	Convergence, Complementarity, Discrepancy, Silence (virtually no mentions in the interviews of hearing about or being recommended an online mental health tool by a healthcare professional)	<i>Searching for mental health support online on one's own is a risky but widespread practice</i>

T – theme (e.g. T1 stands for Theme 1)

Online mental health tools can help expand options for support

The questionnaire found that almost all participants (91.7%) had received at least one mental health intervention, mostly in-person therapy (83.5%). The qualitative results complemented this by showing that people sought traditional, in-person treatment because of the importance they placed on in-person contact with a mental health professional and the beneficial role of their expert, active guidance. The absence of this from online mental health tools was viewed as an important limit (Theme 1). At the same time, many questionnaire participants (68.6%) rated one or more online mental health tools as having been helpful, with qualitative results providing complementary insight and suggesting that online mental health tools may be regarded as expanding existing options for support. These qualitative results also help elucidate some of the quantitative results relating to the concomitant or separate use of online mental health tools and traditional mental health interventions.

The questionnaire found that most participants (78%) had used online mental health tools and mental health interventions at the same time. The qualitative results complement this by elucidating that people purposefully used online mental health tools alongside other treatments and activities they were undertaking to support their mental health. One reason for doing so was to enhance or facilitate engaging in those treatment and activities (Theme 1). A second reason was to access additional support and increase the sources or types of support available to them. In this case, each source of support was viewed as having its useful place alongside one another in supporting one's mental health (Theme 1).

While most questionnaire participants had used both online mental health tools and received one or more traditional mental health interventions, a minority of people (8.3%) said they did not receive traditional mental health interventions. Additionally, while most participants who had used both forms of support had engaged in them at the same time, some (13.8%) indicated that their use of online mental health tools had preceded their use of traditional interventions. A number of qualitative and quantitative results offer

complementary insight, indicating potential explanations for these patterns. Sometimes online mental health tools offered a preferred alternative by accommodating people's needs and preferences better than offline, in-person options for support (Theme 1), such as because of not feeling comfortable with the idea of talking to a healthcare professional or wanting more flexibility of access than allowed for by in-person supports (Theme 1). People also used online mental health tools when they wanted to solve their issues themselves or as a way to explore how a certain approach (e.g. cognitive behavioural therapy) worked or whether it would work for them (questionnaire). Thus, while participants saw in-person professional treatment as important (Theme 1), it did not always fit with their needs nor was it always wanted. Similarly, some shared a view that online mental health tools and traditional treatments were different forms of support that could be useful at different moments in time or for different people depending on their level of need (Theme 1). Participants also used online mental health tools for support in the absence of traditional treatments (Theme 1), such as the several questionnaire respondents who had used an online mental health tool to get support while on a waiting list for formal treatment. In sum, people who use online mental health tools and have never received traditional interventions, or not yet, may have deliberately chosen to use an online mental health tool instead of seeking support the traditional way; alternatively, they may have been unable to access traditional treatments.

In sum, the integrated results highlighted that people typically sought support through both in-person mental health services and online mental health tools, valued both pathways, and suggested possible explanations for this. The quantitative results supported the saliency of these findings by highlighting their widespread presence in the sample. The contribution made by the qualitative results was in adding details and nuance in a two-fold manner: first, by highlighting several situations in which participants chose to use online mental health tools in combination with or as an alternative to traditional treatment options, and why; second, through highlighting that people valued both traditional in-person treatment and online mental health tools, but in different ways, and this was because they associated distinct benefits with each form of support.

Availability of choices between different points of access matters

This integration result focuses on the fact that smartphones were the predominant point of access used with online mental health tools, but having other options was also important.

Virtually all questionnaire participants (98.2%) had a smartphone and used it to go online. A high amount of questionnaire participants (73.4%) also reported *always* or *frequently* using their smartphone to access an online mental health tool, making it the computer device most used for this purpose. Consistent with this, self-help and wellbeing apps were the most popular form of online mental health tools used by the participants, reported by twice as many questionnaire participants (54.1%) as those using the second most used type of online mental health tools, online programmes / courses (27.5%). The second most used computer device to access online mental health tools was the laptop, although this occurred much less often, with 28.5% of questionnaire participants always or frequently doing so (most participants (56.9%) rarely or never used a laptop to access an online mental health tool). The laptop was also the second most used device for general online access, with as many as three quarters (74.3%) of questionnaire participants doing so. Thus, the quantitative data showed that smartphones were the most popular choice for both general online access and access to online mental health tools, whereas laptops were widely used across the sample for general internet access but noticeably less so when it came to online mental health tools.

Qualitative results complemented the above mentioned quantitative results on the issue of what computer devices people used to access online mental health tools and why (Theme 7). The interviewees spoke of smartphones as a very practical, convenient, and flexible way of accessing online mental health tools, especially in the form of apps, as this made online mental health tools quickly and readily accessible when and where they

wanted or felt the need to use them. For example, smartphone apps were a popular choice among the interviewees using meditation / relaxation to improve their mental health, which they could access when they wished or needed during the day or night, sometimes doing so multiple times a day, compatibly with their time availability, mostly at home but also outside the home such as while on lunch break at work or while out in nature. The interviewees also used a laptop or desktop computer to access their online mental health tools, but for a different reason. A larger, more typing-friendly device than a smartphone was preferred when using certain online mental health tools or parts of them, especially when extensive typing was involved, which participants found it comfortable to do on a laptop or desktop computer but much less so on a smartphone. Sometimes participants accessed the same online mental health tool from both smartphone and laptop / desktop computer, using the former when they wanted quick, ready accessibility, and the latter when they needed greater comfortability.

The quantitative results were very effective in showing that the use of smartphones to access online mental health tools was dominant compared with other devices. It would not have been possible from the qualitative data to get the same sense of the magnitude of this difference. Likewise, without the qualitative data it would not have been possible to appreciate the importance that using a laptop / desktop computer to access an online mental health tool has for some people. It would also not have been possible to find out the different basis for the decision about when to use a laptop / desktop computer (the preferred option when greater comfort of engaging with the online mental health tool was needed, e.g. for extensive typing) compared to a smartphone (the preferred option when immediacy of access was desired). This is relevant as a non-negligible minority of over one in four participants regularly accessed online mental health tools from a laptop. Without the insight that came from the qualitative data it might have been easier to overlook this figure when comparing it with the dominant use of smartphones as a point of access.

Using it my way: Timeliness and flexibility of use in online mental health tools

Participants valued that online mental health tools made support available in a flexible way. Immediacy and timeliness of support were key aspects in this. Both came up at various points in both the quantitative and qualitative results. Integrating these results further highlighted the saliency of this finding.

In the questionnaire, 45% of participants had used an online mental health tool because of the possibility of starting to use it immediately. This relates to getting support without waiting times. Complementing this, the interviews showed that one way in which participants used online mental health tools to help with their mental health was in response to specific needs and situations when these arose and get relief in the moment. Online mental health tools used in this way by the interviewees were mostly apps and other such resources the participants accessed on their smartphone (Theme 2). As already noted above, the interviews further highlighted that online mental health tools in the form of smartphone apps were attractive to participants because this type of technology made online mental health tools readily available for them to flexibly access when they needed or chose to (Theme 7). On the topic of using online mental health tools because of their immediacy, the questionnaire showed that this was a widespread reason for using an online mental health tool, while qualitative results complemented this by elucidating the role played by technology (i.e. apps and smartphones) in this.

The importance of timeliness and flexibility of use also came up in relation to the opportunity of using online mental health tools in one's own time, which was made possible by online mental health tools that are available 24/7. In the questionnaire, approximately half (47.7%) of the participants had used online mental health tools because of the possibility of using them in their own time and more than one third (38.5%) had used such tools because of the possibility of using them at their own pace. Results from the interviews were aligned with the questionnaire data in showing that participants used online mental health tools at their own pace and fitted them in with their time availability

and preferences (Theme 8) and sometimes increased or decreased their amount of use in response to their changing mental health needs (Theme 2). Weaving back to the quantitative data, the Mann-Whitney U test found that using online mental health tools in the evening to night-time period (6pm – 12am) was significantly associated with using such tools because of the possibility to start using them immediately, in one's own time, and at one's own pace. Having the flexibility to use an online mental health tool when it best suited them was an advantage in itself and could affect people's choice of what online mental health tool to go for (Theme 8). It also compared favourably with forms of support where access was contingent on a predetermined schedule or the provider's availability (e.g. live meditation classes, appointment with a mental health professional). (Theme 8). Quantitative and qualitative results converged in highlighting the importance of timely and flexible use of online mental health tools, with qualitative results further offering elaboration by showing different facets of this.

Finally, flexibility and immediacy came up in relation to the use of apps to help with problem sleeping. In the questionnaire, more than half (56%) of the participants indicated using an online mental health tool to help with problem sleeping. In the interviews, problem sleeping came up when participants talked about their use of meditation / relaxation apps. Specifically, having this type of support in the form of an app on their smartphone gave them the flexibility and convenience of using the app while in bed, to help them get (or get back) to sleep, and providing them with an opportunity to access a source of relief as close as possible to the moment of need (Theme 2). On the topic of using online mental health tools to help with problem sleeping, the quantitative and qualitative results complemented each other. The questionnaire showed that such use of online mental health tools was widespread, while the interviews provided insight into the role played by technology (i.e. apps and smartphones) when using certain online mental health tools to get help with this particular problem.

Turning to online mental health tools in desperate times

In the questionnaire, *Desperation for help* was the third most common reason for using an online mental health tool, indicated by half (50.5%) of the participants. Additionally a staggering 43% had used an online mental health tool to seek support for feeling suicidal. There was convergence between these results and the qualitative result that increased need for support when reaching a point of elevated mental health distress (e.g. a crisis point) was a common circumstance under which participants took up online mental health tools (Theme 2). Complementary information was provided by the Chi-square test for independence that was carried out to test for possible relationships between reasons for using online mental health tools and the issues or experiences for which online mental health tools were used. The results of these analyses showed that participants who used online mental health tools because of *Desperation for help* were significantly more likely to also have used such tools for support with *Self-harm* and *Feeling suicidal*, with both associations having moderate strength. Participants who used online mental health tools because of *Desperation for help* were also significantly more likely to also have used such tools for support with *Eating issues* and *Feeling low / sad / depressed*, although the strength of these associations was weak.

Interestingly, there was a potential tension between urgent need for help being a salient circumstance within which online mental health tools were used, supported by both the quantitative and qualitative data, and another qualitative result. In the interviews, participants stressed that a potential danger of seeking support online on one's own was the risk of making oneself worse as a result of trusting inaccurate or harmful content (Theme 1). In particular, they felt that this danger was greater for someone in a heightened state of mental distress (Theme 1, Theme 6). Yet turning to online mental health tools when in urgent need for help, a circumstance likely precipitated by being in greater distress, was not uncommon. Participants' proposed solution to the risk of making oneself worse was to exercise caution when seeking support online on one's own, limit one's online sources to trusted ones such as official websites and well known organisations, or seek support from

a mental health professional instead of online. Thus their solution was not necessarily to avoid online mental health tools or online help-seeking, rather it could be one of managing the risks that engaging in this activity could pose.

In sum, the use of online mental health tools in response to urgent need for help came up in both the quantitative and qualitative data, which converged on this aspect, but their integration is what made this finding stand out as particularly salient. This in turn brought a potential area of tension to the fore.

Filling the need for support while waiting for treatment

The interviews highlighted that part of the value of online mental health tools was in expanding available options for support by providing alternatives to traditional services or treatments when these were unavailable, including when this was due to waiting lists or temporary closure (Theme 1). Consistent with this, a not negligible minority of questionnaire participants (28.4%) had used online mental health tools to get help while on a waiting list to get professional help. Thus, the qualitative and quantitative data converged on this aspect, with the quantitative data additionally highlighting the saliency of one specific situation in which online mental health tools were used as an alternative to unavailable treatments. Further complementing this, the Chi-square test for independence showed that these participants were significantly more likely to have used an online mental health tool to get support with *Feeling suicidal* and *Self-harm*, perhaps suggesting greater need or urgency for these individuals to get support (although strength of the associations was weak). Non-heterosexual participants were also significantly more likely to have used an online mental health tool while on a waiting list than heterosexual participants.

In this integrated finding, the quantitative results had greater weight than the qualitative results as they helped identify a specific situation in which online mental health tools were used as an alternative to unavailable treatments, and supported its saliency by showing it

to be both relatively common across the sample and more likely among individuals who were seeking support for certain experiences and among non-heterosexuals.

Seeking knowledge to address the emotional and practical needs of coping with a mental health problem

A total of 57.8% of questionnaire participants indicated having used an online mental health tool to gain insights into how to manage a certain issue or experience. This made it the second most common reason for using an online mental health tool among the questionnaire participants, preceded only by affordability / free of cost and ranking higher than reasons linked to flexibility and timeliness of use. Another way in which some of the participants (35.8%) used online mental health tools as a source of information was to find out how a certain approach (e.g. cognitive behavioural therapy) worked or whether it would work for them. Additionally, the result that 76.2% of questionnaire participants searched online for mental health information at least once a month, with more than half of them doing so at least once a week, further highlighted the widespread use among the participants of the Internet as a source of mental health information. Both supporting and expanding these results, the interviews showed that participants found it valuable to inform themselves around mental health, and used online mental health tools for this purpose, motivated by a desire to understand and make sense of their mental health problems and learn more about what could be done to deal with them (Theme 1). There were emotional benefits to this, such as the reassurance and hope people felt in learning that they were not alone in experiencing a mental health problem and that their experiences could be explained and dealt with (Theme 1). There could also be self-advocacy benefits. The interviews showed that the learning the participants did on their own using online (as well as other) resources to better understand their mental health problems occasionally gave them tools to actively affect the trajectory of their care in a positive direction (e.g. getting closer to a diagnosis or finding the type of therapy and practitioner they wanted to work with) (Theme 1).

In sum, the qualitative and quantitative results converged and reinforced each other in highlighting the importance of the function of online mental health tools as a source of mental health information and education, address practical needs (how to manage one's mental health problem) and emotional needs (making sense of one's distress, finding hope and reassurance). The quantitative and qualitative results had similar weight in the integration process. The quantitative results provided strong evidence of the generality of using online mental health tools and the Internet as sources of mental health information and understanding, while the qualitative results, yielding insights into the personal motivations and desires for doing so and the potential emotional benefits, added nuance and depth.

Variations in the meaningfulness of remotely accessible mental health support

In the questionnaire, one quarter or more of participants had used online mental health tools as a way of getting help without needing to travel (25.7%) or leave the house (36.7%). There were no such mentions from the interviewees, plausibly explained by the fact that leaving the house and travelling did not appear to constitute a problem for them, as suggested by their willingness to do so to attend their research interview and go about their daily life (e.g. go to work, attend mental health services, or go on holidays, as gleaned from their interviews).

There was little in both the questionnaire and interview data to help make suggestions as to participants' specific reasons for using online mental health tools to get support without having to travel or leave the house.³⁰ For example, remotely accessible mental health

³⁰ In the questionnaire, participants were asked whether they resided in a rural or urban setting during the time they had used online mental health tools. Unfortunately, due to the nature of these data it was not possible to do a Chi-Square Test of Independence between setting (rural vs urban) and using online mental health tools to get help without having to travel (people who did vs people who didn't), and between setting (rural vs urban) and

support (e.g. online, telephone) may be a necessity for an individual who is homebound due to disability or illness. However, when asked whether they had used an online mental health tool because of a condition or disability prohibiting them from accessing other mental health services, only one questionnaire participant indicated this applied to them. The interviews included the experience of one person who had to substitute in-person therapy for telephone therapy as a result of the community-wide stay-at-home restrictions that were imposed during the COVID-19 pandemic. This points to another set of circumstances under which accessing mental health support remotely may be or become a necessity.

In contrast to the possibility of getting mental health support without needing to leave the house, two interviewees found that the physical act of going to therapy was part of what made the experience beneficial for them (Theme 1). Comparing mental health apps with in-person therapy, the first participant stated that *“there's definitely a limit compared to actually going out to getting talk therapy”* [P2]. The second participant contrasted his experience of attending in-person therapy with doing therapy over the telephone. This participant travelled far to attend therapy. He described the journey as long, tiring, and made all the more difficult by panic attacks and the side effects of antidepressant medication. At the same time, these challenges contributed to the meaningfulness of the experience, which he likened to a project whose completion was confirmation to him that he was capable of functioning and this gave him hope. This experience came to a halt when in-person therapy had to be substituted for telephone sessions during the COVID-19 pandemic.

using online mental health tools to get help without having to leave the house (people who did vs people who didn't). This is because the data relating to setting was generated using a multiple response question, where participants could select either option (rural or urban) or both if this applied to them. As some participants selected both rural and urban, thereby appearing in both categories, the data violated the Chi-Square Test requirement that cases cannot appear in more than one category, therefore it was not appropriate to perform a Chi-Square Test of Independence.

[...] my two last sessions with my psychologist were through the mobile phone because of the covid [...] [before the pandemic] I'm travelling to xxxxx, so I need to take two trains, the first train to xxxxxx, second train to xxxxx, so I'm making three hundred kilometres three hours long trip one way [...] sometimes previous years I was using the bus and it took me sometimes eleven hours to go and meet my therapist and get back. So it was not just about therapist, it's about to get a project done, because if you're capable to mobilise yourself to get out of bed in the morning, with people who are on amitriptyline it's a challenge, [...] it was a very complex project before 2011 when I had really devastating panic attacks [...] and when you finish this project you have reaffirming you are capable to do something, you are functional, there is hope [...]
[P9]

Although not involving the use of an online mental health tool, this participant's experience of telephone therapy as a substitute for in-person therapy is relevant in this context as it adds to the discussion of the different implications that remotely delivered mental health support can have for different people depending on their circumstances.

In essence, neither quantitative nor qualitative results helped elucidate people's specific reasons for using online mental health tools to get support without having to travel or leave the house. Complementary information came from the interviews, where an alternative point of view was expressed according to which removing the physical act of going to therapy, or being prevented from engaging in this act, would be a disadvantage. This is considered complementary because it represents a different experience of the same phenomenon rather than contradictory or conflicting information, showing that the opportunity to get support without having to travel or leave the house is relevant to some people but not others.

Privacy and anonymity in online help seeking

Being able to access mental health support from home or otherwise remotely rather than attending services in person may offer better privacy and anonymity to some. In the questionnaire, approximately one third of participants said that privacy (33.9%) and anonymity (30.3%) were reasons why they had used online mental health tools. Analyses of associations conducted with these data showed that those who had used an online mental health tool for anonymity reasons were significantly more likely to have used an online mental health tool to get support for *Feeling low / sad / depressed* and *Feeling suicidal*. Complementing these quantitative results, two interviewees pointed out how online mental health tools could allow someone to get mental health support while keeping the knowledge of their mental health problem private and unknown to others. For the first participant, doing email instead of face-to-face counselling had been a way of getting mental health support without no one knowing about it. The second participant felt that online mental health tools provided greater public privacy than attending in-person services, eliminating the chances of being exposed to prejudiced attitudes for being seen attending mental health services.

[...] it was a really good way for someone to easily get into looking at mental health support without having, like, nobody knew I was doing it [...] [P7]

I think online [...] also gives you confidentiality so you are not afraid of people seeing you there [at the mental health service] and judging because it happens [...] [P4]

Challenges to keeping one's use of an online mental health tool private from others can also occur, as one participant commented.

"[...] especially when there was an element of secrecy it is quite hard to do because people are, what are you doing or something like that and

*(I wouldn't have been at that stage (not) comfortable talking about)
what I was doing that I was using that type of app [...]" [P7]*

The experience of this same participant also pointed out that anonymity reasons can underlie the choice of online mental health tool. This participant, who was part of online support groups, chose American support groups and avoided local ones (Irish or UK based) for better anonymity.

*[...] the two groups that I'm a part of they're American groups, I
wouldn't personally be comfortable being part of a group that was
here, like, Irish or UK based or anything, just for the anonymity part of
it [P7]*

Further, complementary data came from the interviews and highlighted that online mental health tools posed their own risks to the privacy and anonymity of their users. Qualitative results highlighted a concern with online mental health tools collecting information of a personal and sensitive nature and the importance of said tools providing guarantees of secure and confidential handling of personal information (Theme 6).

In sum, quantitative and qualitative results complemented each other on the issue of using online mental health tools for privacy and anonymity. The questionnaire provided quantitative support that this issue concerned a non-negligible minority of participants, and further showed a link between seeking support for certain issues or experiences (namely, *Feeling low / sad / depressed* and for *Feeling suicidal*) and using an online mental health tool for anonymity reasons. The interviews illustrated different reasons why people may seek out online mental health tools for privacy and anonymity, both when looking for mental health support (online as a more private / anonymous alternative than in-person) and when choosing between online mental health tools (some offers better privacy / anonymity than others). Further complementary insight came from the interviews which highlighted that privacy and anonymity are not inherent to online mental health tools. This related to two meanings, keeping one's use of an online mental health tool

private, and risks for users of having their personal information not duly protected by the online mental health tool itself.

Choosing free / affordable online mental health tools: Option VS necessity

In the questionnaire, the most popular reason for using online mental health tools, indicated by 66.1% of the participants, was that such tools were affordable or free of cost. In line with this, when asked how much they had cumulatively paid to use online mental health tools, most questionnaire participants had used online mental health tools at no cost (67%) or had cumulatively paid up to 60 Euro (22.9%). Complementary insight into the issue of the cost of online mental health tools was provided by the interview data. Insights from interviewees' stated views on paying for the use of online mental health tools highlighted that they did pay attention to the price of online mental health tools, but not on its own. Participants appreciated when paid online mental health tools were reasonably priced or good value for money, or what they perceived to be so, after weighing cost against other factors such as helpfulness, quality, content and features on offer, the amount of use to be got out of an online mental health tool, and the transparency and honesty of its sales practices (Theme 5). Thus, price and affordability mattered to people when deciding whether to get a paid online mental health tool, which is consistent with the quantitative result of affordability / free of cost being a popular reason for using online mental health tools. However, affordability was not more important than other aspects, rather helpfulness, good quality, and fair sales practices were expected as well.

In the interviews, people identified the prices of traditional therapy (including therapy delivered online) and the scarcity of affordable mental health supports as barriers to accessing mental health treatments, especially for people with limited financial means (Theme 10), with a few interviewees openly referring to situations in which people may look at online mental health tools as an affordable alternative (Theme 1). It is also worth noting that the finding that affordability / free of cost nature of online mental health tools

was a highly popular reason for using such tools came up in the context of a majority of people being in the lowest income brackets, as 60.6% of questionnaire participants had an annual income (or amount of money they lived on) of up to €25,000 (approximately the annual living wage in Ireland when the questionnaire was conducted), many of whom earned half as much (up to €12,000). In total, 83.3% of those who lived on no more than €25,000 a year were students / in training, people employed part-time, or people on long-term sickness / disability benefit. Likewise, for the subgroup reporting having less than €12,000 to live on yearly, 87.8% were students / in training, people employed part-time, unemployed individuals, and people on long-term sickness / disability benefit. Thus, the occupation data suggests that that most participants may have been in the lower income brackets as a result of not having a good, steady income. However, the analysis of association between income level and having used online mental health tools because affordable or free could not be performed, therefore it was not possible to ascertain whether people on a lower income were more likely than those on a higher income to have used online mental health tools that were affordable or free.³¹

To summarise, the quantitative results are clear in showing the popularity of choosing online mental health tools that were free or perceived to be affordable, but the qualitative data helped form a more nuanced picture by showing that affordability did not override people's need for such tools to also be helpful, of good quality, and fair in their commercial practices. The fact that the majority of participants were in the lowest income brackets raised the question of whether this might have contributed to the popularity of affordable and free online mental health tools, but this could not be explored further.

³¹ The data on income provide a description of people's financial situation at the time of their participation in the questionnaire, but it cannot be assumed that said level of income was the same as when they had used online mental health tools, knowing, in particular, that approximately half of the participants were not using online mental health tools anymore at the time of the questionnaire. This greatly limits the value of exploring the existence of an association between income and using an online mental health tool because affordable / free, therefore such an analysis was not performed.

Technology and access to online mental health tools

Although most interviewees seemed to have unproblematic access to the technology needed to use an online mental health tool (i.e. Internet connection and a computer device), some of them underlined that issues of accessibility to do with hardware could limit people's chances of using and getting access to online mental health tools, including not being familiar enough with using digital technology, not having a computer device, and having limited or no access to the Internet. The interviewees also stressed that such issues would particularly affect certain groups (e.g. homeless people, people in Direct Division, other people with financial difficulties) (Theme 10). Within the larger sample of the questionnaire, a notable minority of people had their access to and use of online mental health tools potentially inhibited by technology-related issues on a regular basis, particularly by having poor Internet or mobile network signal while using an online mental health tool (13.8% of people in total). Other issues, which regularly affected between 4.6% - 6.4% of participants, included having limited options to recharge the battery of their computer device, access the Internet or a computer device, and having reached the maximum amount of data allowed on their Internet plan. Proportions of people who experienced these issues at least occasionally were higher, ranging between 12.9% - 39.4%, however occasional disruptions in Internet connectivity or access to technology may be better tolerated and even accepted as likely to be inevitable. Additionally, for a small minority of people the smartphone was both the only device they had personal access to and went online from. These results point to situations in which access to the necessary technology (computer devices and stable Internet connection) is potentially limited, which in turn may constrain people's chances to access online mental health tools and use them when they want or need.

Accessibility issues only marginally came up in the interviews. Many interviewees also talked about finding online mental health tools easy to use and user-friendly (Theme 9). When technology related issues came up the interviews, they mostly related to issues that affected the usability of such tools, such as glitches, a complicated interface, or a mental

health app with a function not properly optimised for smartphone use (Theme 9). The common occurrence of these events was supported by the quantitative data, where one in five participants reported encountering malfunctioning features occasionally, and a small minority (6.5%) experienced them regularly. However, complementing this quantitative information, the qualitative results also showed that usability issues and malfunctions were tolerated to various degrees, including leading to nonuse. This was the result of the combination of various elements such as the nature and extent of the issue, the need of the user in using a specific online mental health tool, and one's capacity to find a way around the issue (Theme 9).

Finally, while the use of online mental health tools can be affected by circumstances that restrict access to technology itself, abundance of daily technology use can also impact on the use of such tools. A little under two thirds of the questionnaire participants reported getting distracted at least occasionally by notifications from apps while using an online mental health tool, and for a few interviewees the pervasive use of technology and technology-mediated communication as part of their daily lives contributed to a decision to not use an online mental health tool and use in-person support instead (Theme 9). This integrated finding is about technology being an element of the context of use of online mental health tools. The qualitative data had greater weight in establishing the saliency of this finding as in their narratives the interviewees clearly communicated that an overabundance of daily technology use could have a meaningful impact on whether to seek in-person or online support.

To summarise, the quantitative and qualitative results complemented each other as they highlighted the presence of two different types of technology-related issues. An important aspect to come out of the quantitative data, and which would otherwise have been missed as it only marginally came up in the qualitative data, was the small but non-negligible minority of people who reported regularly experiencing poor Internet or mobile connection while using an online mental health tool. This suggested a possible disadvantage in terms of opportunities to access online mental health tools. A different set of technology-related

issues were highlighted by the qualitative results, relating to the usability of online mental health tools. In particular it was thanks to the qualitative data, where participants were able to articulate their experiences in as much detail as they wanted, that it was possible to appreciate the different extents to which usability issues can impact the use of an online mental health tool (from negligible to quitting using it), and that how this pans out depends on multiple interrelated factors. Additionally, some quantitative and qualitative results converged in showing that an abundance of technology within one's everyday life can get in the way of using an online mental health tool or affect decisions about whether to seek online or in-person support.

Searching for mental health support online on one's own is a risky but widespread practice

The participants primarily found out about online mental health tools online. In the questionnaire, most participants had found out about an online mental health tool through a search engine (45.9%) or on social media (41.3%). The qualitative results both converged with and complemented this as they showed that participants typically actively searched online mental health tools out of their own interest by searching app stores, doing online searches, and while visiting social media or websites about mental health and mental wellbeing (Theme 4).

Sometimes, participants found out about online mental health tools through informal others, including a friend or family member (21.1% of questionnaire participants) and other people who had used an online mental health tool (Theme 4). Regarding the latter, interviewees also talked about looking at the reviews and ratings left by other users, and using them as a source of information on the quality and dependability of an online mental health tool, particularly when looking for apps to help with their mental health (Theme 6).

In the questionnaire, there were also 23.9% of participants who had used an online mental health tool because of having been recommended one by a healthcare professional (in response to the question asking about reasons for using online mental health tools), along with 25.7% of participants who reported having heard about an online mental health tool from a healthcare professional (in response to the question asking how they had heard about the online mental health tools they had used). The interview data was mostly silent on both points, as only one interviewee reported having been recommended an online mental health tool by a healthcare professional (her email counsellor) (Theme 4). Taken together, the results concerning how people found out about online mental health tools indicate that people were overall more likely to find out about such tools through their own searches or other people such as friends and family than from healthcare professionals.

The qualitative results showed that people sought traditional, in-person treatment because of the importance they placed on in-person contact with a mental health professional and receiving their expert, active guidance (Theme 1). The absence of these aspects from online mental health tools were seen as limits, particularly because of the risk of engaging with unsafe content when seeking mental health support online on one's own and making oneself worse as a result (Theme 1). Yet this remained the most common way in which people searched for online mental health tools. There emerges a potential tension between the safety participants associated with receiving expert input from a mental health professional, the risks they saw in the practice of seeking mental health support online on one's own, and the prevalence of this practice. The emphasis people placed on sticking to online resources offered by formal providers such as reputable and well-known mental health organisations, official health organisations, and colleges / universities when looking for support online on their own, and which they viewed as a good strategy to avoid incurring in unsafe and potentially harmful content (Theme 6), may suggest that this is how they managed that tension.

In essence, the quantitative results were clear in showing that people predominantly found out about online mental health tools through their own online searches, and interviewees'

descriptions of their process of finding out about online mental health resources converged with this. In highlighting the generality of this practice across the sample compared with other practices, the quantitative results played a particularly important role in establishing the saliency of independently undertaken online searches in finding out about online mental health tools. By contrast, it was in the interviews, where people could articulate their experiences in their own words and in as much depth as they wished, that they voiced their concerns about using online searches to find online mental health tools when feeling particularly distressed. From these results there emerged a tension, encapsulated in the widespread but potentially risky practice of searching online mental health tools online on one's own. This is reminiscent of another point of tension, noted earlier, between the perceived dangers of seeking support online on one's own when in a heightened state of distress and the widespread practice of turning to online mental health tools when in urgent need for help. Ultimately it would not have been possible for these points of tension to have come up without the qualitative data, as this is where participants' views on the risks of seeking help online came up and were delved into. The qualitative results also provided the ground to suggest that people had a strategy to manage these tensions and minimise the potential risks associated with seeking help online.

7.4 Conclusion

The questionnaire and the interviews were deliberately designed to generate information about the same issues in a complementary fashion. The questionnaire addressed the need to generate understanding of the real-life usage of online mental health tools at the level of broad, collective patterns, hence the use of a quantitative questionnaire based on a larger sample, whereas the individual semi-structured interviews addressed the need to generate richly descriptive information of the personal processes underlying those patterns. The strengths each approach brought to the mixed methods study lay in these characteristics. Most of the quantitative and qualitative results converged or complemented each other. There were also two instances of dissonance. The benefits of

employing a mixed-methods methodology were demonstrated by the quality of these relationships, i.e. how the quantitative and qualitative results conversed with each other.

One of the main strengths of the quantitative results lay in showing the generality of given phenomena, which would not have been appreciable from the small qualitative sample. In a complementary fashion, the strength of the qualitative results often lay in elucidating the faceted nature of these phenomena, for example the value placed on traditional in-person treatment and online mental health tools being linked the distinct benefits people associated with each form of support, or the personal meanings associated with using online mental health tools as a source of mental health information and understanding.

Another strength of the quantitative results came from the analyses of association, as these yielded a number of appreciable patterns that added weight to some of the integrated results or deepened their meaningfulness (e.g. one of the integrated results related to the use of online mental health tools while on a waiting list to receive treatment as a salient finding, particularly as the analysis of associations suggested that this pattern might apply to some groups in particular). At other times it was the qualitative results that had greater weight in establishing the meaning or salience of an integrated finding, due to the interviewees' narratives richly communicating the meaningfulness of given events or aspects related to their use of online mental health tools.

The study's purposeful combination of quantitative and qualitative approaches has enabled it to achieve a richer, more comprehensive exploration of its two research aims. The first research aim was to explore how online mental health tools are used to get support for a mental health problem. Pertinent to this, the integrated findings support that users of online mental health tools seek both online mental health tools and traditional in-person treatment and value them in terms of the distinct benefits that they associate with each. People often used online mental health tools to enhance or complement traditional treatment, and appreciated the opportunities offered by such tools to access support in an immediate, timely, and flexible way, as well as more privately and anonymously than in-

person pathways. Also pertinent to the first research aim is the finding of people's desire to help themselves by using online mental health tools as sources of information that may help them understand their own distress better and find new or additional ways to manage it. Additionally, two particular situations linked to the use of online mental health tools stood out, namely the use of such tools when in urgent need for help and when on a waiting list for treatment, which also came up as more prominent among those possibly experiencing higher levels of distress. The last finding pertaining to the first research aim relates to people's often self-initiated process of looking for online mental health tools, identifying suitable ones, and adopting strategies to protect themselves from potentially unsafe ones.

The second aim of the research was to explore the place of technology in the experience of using an online mental health tool to get support for a mental health problem. The findings that are pertinent to this research aim relate to aspects of the Internet and of the computer devices people used to access online mental health tools. First, there is the role played by the 24/7 availability of online mental health tools, allowing for immediacy of access and flexibility of use, which was made visible by people's appreciation for the opportunity to start accessing support as soon as needed and engage with it at their own pace and in their own time. Second, immediacy and flexibility of access were amplified by smartphones being easily and conveniently portable, and, related to this, ubiquitously and instantly accessible. This also helped to explain the popularity of this device as a point of access for online mental health tools both in general and when desiring in-the-moment distress relief in particular. Third, there was the different basis for choosing to access an online mental health tool from a laptop or desktop computer rather than a smartphone, which occurred when a larger device was the preferred choice for greater comfort of engagement with certain activities (e.g. typing extensively). Fourth, the challenges reported by some participants with accessing the Internet or with usability issues related to online mental health tools highlighted the need to give attention to the role that having or not having access to well-functioning hardware (e.g. Internet connection, devices) can have on one's opportunities to avail of online mental health tools as a form of immediate

and timely support. Lastly, the findings also pointed to an abundance of technology within one's everyday life as sometimes hindering the use of online mental health tools or contributing to a decision to seek in-person support, highlighting an additional way in which technology can act as an element of the context of use of online mental health tools.

CHAPTER 8 – DISCUSSION

8.1 Introduction

This mixed methods exploratory study investigated how adults with a self-identified mental health problem who live in the Republic of Ireland use online mental health tools for mental health support in their everyday lives, and what place technology has in this experience. This chapter begins by reviewing how the objectives of the study have been addressed. Next the key findings of the study are critically discussed with reference to the extant literature.

8.2 Reviewing the objectives of the research

The aims of the research were twofold:

- (1) Explore how online mental health tools are used by adults living in the Republic of Ireland to get support for a mental health problem.
- (2) Explore the place of technology (Internet and computer devices) in the experience of using an online mental health tool to get support for a mental health problem.

These aims were broken down into five objectives:

- (a) Explore the demographic characteristics of adults living in the Republic of Ireland who have experience as users of online mental health tools.
- (b) Explore their patterns and modes of use of online mental health tools.
- (c) Explore the role of technology in how individuals use online mental health tools.
- (d) Explore the interrelation between the technology and the individual's personal context, i.e. the context within which the online mental health tool is used.
- (e) Explore the experience of using technology to get support for a mental health problem.

Next a review of the key findings that address each objective is offered.

Objective (a) – Explore the demographic characteristics of adults living in the Republic of Ireland who have experience as users of online mental health tools.

The questionnaire sample stood out as predominantly white (mostly White Irish), female, living in an urban setting, and well educated. Participants aged 18 – 34 years old formed the largest group, with fewer and fewer people found in each subsequently older group. One in five participants were aged 45 years old or older. Most were heterosexual, alongside a sizeable minority of non-heterosexual participants. Most reported having an income (or money they had to live on) of no more than €25,000 a year.

In terms of previous mental health treatment, it was typical for participants to have previously received one or more traditional mental health interventions, primarily in-person talking therapy and medication. There were exceptions to this, as a few participants had not received any traditional intervention up to then (this point is further expanded as part of the review of Objective (b)).

In terms of which issues the participants sought help for through online mental health tools, the top three were feeling low / sad / depressed, feeling stressed, and feeling anxious. Notably, four in ten participants had used an online mental health tool in search of support for feeling suicidal.

Objective (b) – Explore people's patterns and modes of use of online mental health tools.

The study has identified several salient patterns and modes of use of online mental health tools.

Participants used online mental health tools alongside traditional interventions or other activities they were undertaking to help with their mental health, doing so to combine different sources of support. People used online mental health tools in this way to enhance or facilitate those other treatments and activities, or to add an additional source of support. When using online mental health tools in this way, people expanded and diversified their sources of support, sometimes viewing each source as having its useful place alongside one another.

As noted previously, there were exceptions to the use of online mental health tools as a complement to traditional interventions. A few participants had not received any traditional intervention, thus for these people support came from online mental health tools but not, or not yet, from professional services. Similarly, a few participants indicated that their use of an online mental health tool had occurred before receiving any traditional mental health interventions. The study suggested that one possible reason for these patterns was that online mental health tools offered a form of support that suited one's needs better than traditional, in-person supports.

There were also times when participants used online mental health tools to compensate for the unavailability of traditional treatments. The study identified one such situation in particular, namely the use of online mental health tools to get support while on a waiting list to receive professional treatment. This also provide another potential explanation for those participants who had not received any traditional intervention or whose use of an online mental health tool had preceded their engagement with traditional interventions.

The use of online mental health tools to get or increase support in time of urgent need, such as when in crisis or feeling desperate to get help, also came up as a salient mode of use, particularly among the participants who used online mental health tools to get help for feeling low / sad / depressed, feeling suicidal, self-harm, or eating issues. Interestingly, two of these experiences, feeling suicidal and self-harm, were also associated with greater likelihood of having used an online mental health tool while on a waiting list for

professional help. The use of such tools in this circumstance was also significantly higher among non-heterosexual than heterosexual participants. Additionally, while it was common for participants to use online mental health tools in time of urgent need, they also cautioned against the possible harm to people caused by seeking help online when in a heightened state of mental distress.

Another characteristic of the way in which participants used online mental health tools related to people engaging with them in their own time and at their own pace, fitting them in with their time availability and preferences. Most people were in the habit of accessing online mental health tools in the evening to night-time period (6 pm – 12 am), particularly those who used such tools for reasons to do with timeliness and flexibility of use, namely wanting to start using an online mental health tool immediately, using it in one's own time and at one's own pace, and getting help without needing to travel.

One particular way in which people took advantage of the flexibility of online mental health tools was to access support on a need basis. This mode of use was reactive, occurring in order to get help when the need for it arose and get relief in the moment, such as when having a panic attack or a particularly stressful day. This stood in contrast with sources of support, both online and offline, with which they engaged on an ongoing and regular basis, such as therapy or guided meditation done with the help of an app. Participants could engage with the same online mental health tool in both ways, or engage differently with different online mental health tools or different sources of support. Additionally, their amount of use of an online mental health tool could change over time as their need for support increased or decreased. In particular, an online mental health tool that they knew worked well for them could become a trusted source of support to go back to in times of need.

The results also drew attention to the saliency of using online mental health tools as a source of information around mental health and mental health problems, particularly in

order to make sense of one's experience of distress and know what could be done to manage it. Acting on these needs, people turned to online mental health tools.

One last pattern highlighted by the study was that people frequently found out about the online mental health tools that they used as a result of their own interest and searches rather than recommendations from their healthcare professionals.

Objective (c) – Explore the role of technology in how individuals use online mental health tools.

There were two areas in which technology came to the fore relating to how people used online mental health tools: characteristics of online mental health tools as online-accessible resources, and the choice of device from which to access an online mental health tool.

A key reason why people sought and valued online mental health tools was their considerable flexibility. This was largely the result of online mental health tools being immediately accessible and available 24/7. This created opportunities for people to access support in a timely and flexible way, as made particularly evident by their use of online mental health tools at a time and pace of their choosing, to get relief in the moment, and to start using an online mental health tool immediately if they so chose. Another important aspect that came up was the fact that online mental health tools made support available remotely. This enabled options for people to get support without needing to leave the house or travel. This was significantly more common among non-heterosexual than heterosexual participants. Online mental health tools were also perceived to offer better anonymity or privacy as a result of removing the need to attend in person and thereby reducing chances of being seen by others. In particular, participants who had used online mental health tools for anonymity reasons were significantly more likely to report seeking help through one such tool for *feeling low / sad / depressed or feeling suicidal*. The study

also found that for some people who felt uncomfortable with the idea of talking to a mental health professional, online mental health tools that removed the need to talk to one in real time (e.g. email) or at all could provide a more suitable alternative. Taken together, the results summarised in this paragraph indicate that a key reason people used online mental health tools was because they facilitated types of support and modes of accessing them that moved away from the traditional format of in-person treatment and services.

The role played by technology in how people used online mental health tools also came up in relation to the choice of computer device. The timeliness and flexibility of use of online mental health tools were maximized when using smartphones. The easy portability and accessibility of smartphones made for a particularly effortless, convenient, practical, and flexible way of accessing online mental health tools. Because of this, access from a smartphone was tightly linked with using online mental health tools when needing relief in the moment. Smartphones' great mobility and immediacy also made them the preferred point of access for online mental health tools in general. At the same time, they were not always the most suitable device. Some online mental health tools or parts of them were better accessed on a laptop or computer, such as when lengthy typing was involved, as some participants found greater ease of use in this type of device when it came to those activities. Sometimes participants who had both a smartphone and a laptop or desktop computer alternated between the two to capitalise on the advantages of both points of access. The study also found, by contrast, that a minority of participants only went online from one device, indicating their possible reliance on a single device to access online mental health tools. This device was a smartphone in all but one case.

Objective (d) – Explore the interrelation between the technology and the individual's personal context, i.e. the context within which the online mental health tool is used.

A number of elements of the personal context within which online mental health tools were used stood out.

First, and giving rise to two of the previously identified modes of use of online mental health tools, there were two salient situations in which people turned to online mental health tools: being left waiting by mental health services to receive treatment, and having reached a point where help was urgently needed such as when in crisis or in need of relief in the moment. These findings were reviewed under Objective (b) and won't be reviewed again here.

Second, the result that the affordability or free of cost nature of online mental health tools was a most popular reason for using such tools came up in the context of more than half of participants reporting an annual income of up to €25,000, with many earning half as much (up to €12,000). Most of these participants were students / in training, people employed part-time, unemployed individuals, and people on long-term sickness / disability benefit; in other words, they belonged to groups that are more likely to have to rely on lower or inconsistent income.

Third, the study found that while most participants had no problems accessing both the Internet and a computer device when they wanted to use an online mental health tool, some people had their use of online mental health tools hindered by poor Internet or mobile network signal, reaching the maximum amount of data allowed on their Internet plan, and having limited options to recharge the battery of their device, access the Internet, or access a computer device. This suggests that some participants were in a situation of potential disadvantage in terms of accessing technology and, therefore, online support.

Lastly, technology also came up as an element of the broader context of use of online mental health tools. The study found that a perceived overabundance of technology use and technology-mediated interaction within one's daily life may contribute to a decision to seek in-person instead of online support. The study also found that several people had their use of an online mental health tool frequently disrupted by receiving app notifications. These results highlight how the pervading presence of digital technology in people's

everyday life can bear on people's engagement with online mental health tools, and on their decisions to seek help online or offline in the first place.

Objective (e) – Explore the experience of using technology to get support for a mental health problem.

This study found that the experience of using technology (i.e. an online mental health tool) to get support for a mental health problem can be a beneficial one, but the landscape of online mental health tools is a mixed bag. Most participants had a positive experience of at least one online mental health tool, finding it a useful source of support, but they had also encountered many online mental health tools that they did not find as helpful or at all. The results highlighted several aspects that contributed to people having a positive or negative experience.

A salient issue that came up for people when searching for online mental health tools on their own was having to determine which online mental health tools were legitimate and trustworthy. A potential tension came up concerning the role of healthcare professionals in the process of identifying trustworthy online mental health tools: on the one hand, people were more likely to find online mental health tools through informal channels, particularly their independently conducted online searches or, alternatively, friends and family, rather than through a healthcare professional; on the other hand, people stressed the importance of sticking to online resources created or endorsed by reputable and well-known providers including health and mental health organisations and professionals. People saw this as protection against the mental health misinformation that can be found online and the risk of making ill-considered choices when looking for mental health support online on one's own, although people also adopted additional strategies to decide if an online mental health tool was reliable and steer clear of harmful content. Two types of online mental health tools were red flags: paid online mental health tools with ethically

questionable sales practices, and online mental health tools of unknown reputation whose access was contingent on providing personal information.

Additionally, the usability of online mental health tools, the degree to which they could be customised to better suit people's needs and preferences, and concerns with anonymity and protection of personal information all affected people's experience. This depended on the extent to which people's usability, customisability, and anonymity / privacy needs and preferences were met or not. This affected the choice of online mental health tool as well as whether to keep using an online mental health tool or not.

Lastly, while online mental health tools could provide a useful source of support, people felt they had limits compared to in-person help from a mental health professional, which remained important because of the in-person experience and receiving expert, active guidance on one's progress. People sought in-person treatment for these reasons. A tension was found between the idea of safety that people attached to support provided by a mental health professional, and the riskier practice of finding support online on one's own. Sometimes, the meaningfulness of in-person treatment was also linked to the element of disconnection from using technology. Nonetheless, people who had found a helpful source of help in online mental health tools and used them alongside other offline supports such as traditional treatments were often able to appreciate the contribution made by each individual source of support and their combined benefits.

The key findings of the research will now be discussed in the context of the literature.

8.3 Demographic characteristics of users of online mental health tools

The individuals who took part in this study, all adults with a self-identified mental health problem who had used online mental health tools, were predominantly White Irish women, well educated, and living in an urban setting. This is consistent with a national survey of users of Irish mental health services (Ó Féich et al., 2019) which likewise had a predominance of White Irish, female, and well-educated participants.

The sample's gender profile is also consistent with the international literature. Although a predominance of male participants has been reported in some studies of Internet usage (Wong et al., 2021) and of users of online mental health tools (Padalyia et al., 2022; Sorkin et al., 2021), literature from both before and during the COVID19 pandemic shows an appreciable trend of women as being more likely than men to self-select to participate in research on online mental health tools (Bell et al., 2022; Firth, Torous, Nicholas, Carney, Rosenbaum, et al., 2017; Lattie, Cohen, et al., 2022; Pretorius et al., 2019b; Schueller et al., 2018; Stawarz et al., 2019b). Similarly, a review of the methodological approaches employed in studies of the barriers to digital mental health interventions use found most such studies to have a predominantly female sample (Ganapathy et al., 2024). Women are also more likely than men to self-report or be diagnosed with mental health problems such as “depressive disorders” and “anxiety disorders” (Doherty et al., 2008; Ipsos MRBI, 2016; WHO, 2017). Most of the participants in the present study used online mental health tools in response to feeling low / sad / depressed, stressed, or anxious. The finding that most adult users of online mental health tools who took part in the present study were women seeking support for these experiences may be in line with existing trends.

A comparison with Irish national data (CSO, 2019a) showed that the study's sample was better educated than the general Irish population.³² The literature shows that people who

³² However, available national data only allowed for a comparison with the Irish population aged 15-64 years old or 25-64 year-olds. A total of 2019, 54% of the Irish population aged 15-64 years old had attained a post leaving certificate or third level qualification, with this

self-select to take part in research on Internet usage (Wong et al., 2021) or online mental health tools (Schueller et al., 2018; Sorkin et al., 2021) tend to be well-educated (post-secondary or above education) or better educated than the national average. Thus the present study was no different.

The age profile of the study sample showed that participants in their twenties and early thirties (18 – 34 years old) were in the majority (56.9%), with proportions of older participants decreasing as their age increased. This pattern is consistent with state-level patterns in Internet usage rates by age groups (CSO, 2019b, 2020a; Perrin, 2021). The overall age profile of the sample is also comparable to that of an online survey of 81 adults from the general UK population conducted by Stawarz et al. (2019b) around the same time as the present study and investigating adults' use of a variety of online technologies to support their mental health. However, their sample was somewhat younger (66% of their participants were aged 18 – 34 years old), likely due to their recruitment strategy relying on social media and a university population. The more varied recruitment strategy employed in the present study may have facilitated the recruitment of a larger proportion of individuals aged 35 and above. In particular, the difference in older participants became more noticeable when looking at those aged 45 and above, who represented 20.2% of the sample in the present study versus 12% in Stawarz et al.'s (2019b) study. More recently, a survey of adults who use mobile apps for mental health, recruited from the Indian general population through social media and emails, 36.3% of people in the sample were aged 45-59 (Padalyia et al., 2022). Young people are heavy users of digital technologies, and have been increasingly seeking help in non-face-to-face settings for their personal and emotional concerns, with online platforms of various nature playing an important role (J. Davis & Marsh, 2022; Pretorius et al., 2019b). Understandably, this has spurred a growing focus on generations growing up with digital technology as a particularly important area of development for future digital mental health research and the development of effective and appropriate digital mental health resources. The present study may add to emerging

figure rising to 62% among 25-64 year-olds (CSO, 2019a), compared with 71.6% of people aged 18+ in the present study.

evidence of active interest in and use of online mental health tools for mental health support among middle aged individuals. This population deserves attention, as its needs, preferences, and goals when using online mental health tools are likely to differ from those of young people.

This study also collected information on participants' sexual orientation, and found that a sizeable minority (30.3%) were from a variety of non-heterosexual orientations. One US study that explored the extent of app use to deal with COVID-19 related stress among unemployed people and essential workers reported a higher heterosexual to non-heterosexual participant ratio than in the present study (75.9% heterosexual, 20% non-heterosexual) (Mata-Greve et al., 2021). Similar proportions of the two groups were also reported in Ó Féich et al.'s (2019) survey of users of Irish public mental health services. Both studies had some missing data, which might have affected these figures. Additionally comparing these findings is compounded by the very different nature of the samples utilised by three studies (users of online mental health tools, users of mental health services, unemployed people and essential workers), the sources of the samples (the general population in Ó Féich et al. (2019) and the present study, an online research platform in Mata-Greve et al. (2021)), and the time of data collection (Mata-Greve et al. (2021) during the first year of COVID-19 pandemic, the other two studies in the years before the pandemic). Nonetheless, of the three studies only the present one explicitly recruited users of online mental health tools. Its recruitment strategy and focus on online mental health tool users may have been responsible for the predominantly young sample. A total of 56.9% of participants in this study were aged 18 – 34 years versus 36.9% in Ó Féich et al.'s (2019) study of mental health service users. The age difference between the two samples is relevant. First, the majority of participants in the present study belonged to the two most recent generational groups, the so-called Millennials and Generation Z, who are more likely than older generations to identify as LGBTQ (PRRI, 2024).³³ Second, young

³³ Millennials are defined as those born between 1981-1996, and Generation Z as those born between 1997-2012 (Dimock, 2019). These approximately correspond to ages 22-37 (Millennials) and 6-21 (Generation Z) in 2018-2019, years of the survey data collection for the present study.

LGBT people, like young people in general, have been found to favour seeking help via non-face-to-face settings such as the Internet and text messaging rather than via settings that require in-person contact (J. Davis & Marsh, 2022; McDermott et al., 2016). Moreover, additional barriers to help seeking exist for sexual minorities compared with heterosexual individuals, such as stigma, discrimination, poorer treatment experiences, and limited availability of services designated for sexual minorities, causing further disparities in accessing services (Drydakis, 2023; Elliott et al., 2015; Gilbey et al., 2020; Higgins et al., 2016; Liu et al., 2023; Mental Health Reform, 2022; Williams & Fish, 2020). The above mentioned factors might help explain the higher participation of non-heterosexual individuals in the present study than in Ó Féich et al.'s study of mental health service users (2019). Mata-Greve et al.'s (2021) study of the extent of use of apps for stress support during the pandemic among unemployed people and essential workers had a similarly young sample (Mean age: 31.9) to the present study, perhaps a consequence of recruiting from the members of an online research platform, but by contrast to the present study its sample was inclusive of both users and non-users of those apps. Again, the present study's explicit focus on users only might have attracted more non-heterosexual participants than those other studies. As of yet, the digital mental health field has given limited attention to sexual minorities and their use of online mental health tools (Cohen et al., 2022; Liu et al., 2023; Ren et al., 2022; Whaibeh et al., 2019). The present study may suggest that interest in and use of online mental health tools by non-heterosexual people who are seeking mental health support deserves greater research attention. It has been suggested that online interventions may help reduce inequalities in care access for sexual minorities, such as by bypassing the need for in-person contact and thereby offering greater anonymity and minimizing stigma (Liu et al., 2023). The analyses of associations conducted within the present study found no statistically significant difference between heterosexual and non-heterosexual participants in terms of using online mental health tools for anonymity or privacy. The study did find, however, that non-heterosexual participants were significantly more likely to have used an online mental health tool to get help while on a waiting list for treatment and to get help without needing to leave the house. These two findings will be

discussed in sections 8.4.2 and 8.4.3, respectively. These findings contribute to existing knowledge on the role of online mental health resources in sexual minorities' help seeking.

Lastly, as many as 60.6% of our questionnaire participants reported living on up to €25,000 a year, with over half of them (37.6% of the whole sample) living on up to €12,000 a year. The study also found that 66.1% of participants had used an online mental health tool because affordable or free of charge, and when asked to indicate how much money they had spent on online mental health tools overall, 67% of participants had spent none. This is consistent with existing evidence that affordability is a facilitator to online help seeking and using mental health apps (Huang & Bashir, 2017; Pretorius et al., 2019b; Schueller et al., 2018). The specific reasons for this are less well known. In the present study, while affordability and free options were highly popular reasons for deciding to use an online mental health tool, participants were willing to spend money on an online mental health tool that they liked, found helpful, and whose price they considered to be fair for what it offered, a finding analogous to Schueller et al. (2018). Ultimately, people need to afford to pay for an online mental health tool. In this study, the finding that most participants lived on up to €25,000 a year was largely accounted for by being a student / in training, working part-time, being unemployed / job seekers, or living on a disability / illness pension.³⁴ An analysis of association between reported annual income and having used online mental health tools because affordable or free of charge could not be performed. Additionally, the subgroup of students / in training alone accounted for approximately half of people in both the up-to-€25,000 and up-to-€12,000 groups. Caution is needed about treating the income data as a reflection of the actual amount of money at one's disposal. For example, some of the students might have based their response on what money they directly possessed such as earnings from part-time work, grants, or pocket money, and may not have taken into account any money spent by their parents on their college fees and other living expenses.

³⁴ A total of 83.3% of those who lived on no more than €25,000 a year were students / in training, people employed part-time, or people on long-term sickness / disability benefit. Within the subgroup reporting having less than €12,000 to live on yearly, 87.8% were students / in training, people employed part-time, unemployed individuals, and people on long-term sickness / disability benefit.

While being mindful of these limitations, a number of points should be noted which provide further context to the findings and support the relevance of asking whether there might have been a link between participants' economic situation and the popularity of free / affordable as a reason for deciding to use an online mental health tool. First, the €25,000 a year threshold used in this study approximately corresponds to the estimated annual living wage in Ireland at the time of data collection (May 2018 – August 2019).³⁵ The living wage “represent(s) a figure which allows employees to afford the essentials of life. Earnings below the living wage suggest employees are forced to do without certain essentials so they can make ends meet” (Living Wage Technical Group, 2019). People who experience this are likely to live paycheck to paycheck, which puts them at risk of being vulnerable in times of emergency or lost income. Second, living on no more than €12,000 a year was below the “at risk of poverty” threshold both at the time of data collection and of writing this chapter (CSO, n.d.). In the present study, one fourth of those who reported living on less than €12,000 a year were on long-term sickness / disability benefit or unemployed, circumstances that put people most at risk of poverty (CSO, 2016a, 2020c, 2021, 2022b) and of poor health and mental health (CSO, 2019e). Third, in Ireland, money-related worry and stress such as due to pressure to cope with living costs have been found to be prevalent among third level students (ILCU, 2019, 2021) and young people who seek mental health support online (Pretorius et al., 2019b). Thus, although it is unclear how many of the participants might have prioritised free / cheaper online mental health resources over paid / more expensive ones due to relying on limited financial means, this question merits attention. Schueller et al. (2018) have proposed that while free of cost or low price may strongly contribute to an initial decision to download and try mental health apps, cost might be prioritised differently as the user considers long-term use and perceived helpfulness, with this contributing to willingness to pay (or pay more) for the use of a mental health app. Arguably, this presupposes the ability to afford the fee. This raises the question of whether people with limited financial means may have at their disposal a

³⁵ The annual living wage in Ireland was estimated to be €24,444 in 2018 and €25,198 in 2019 (Living Wage Technical Group, 2018, 2019).

more limited choice of online mental health tools that they can access, compared with people who are financially more comfortable.

8.4 Provision of opportunities to expand and diversify available options for support

The ways in which people with mental health problems use online mental health tools for mental health support suggest that such tools provide opportunities for people to expand and diversify the options of support at their disposal, relative to traditional (in-person) ways of getting support. This is one of the main findings of the study. It also subsumes a number of specific mechanisms through which online mental health tools contribute to expanding and diversifying available options for support. This section first presents the concept of online mental health tools expanding and diversifying available options for support, and offers theoretical reflections on what such an expansion and diversification could look like. Next, specific mechanisms through which online mental health tools contribute to this expansion and diversification are discussed in the first three subsections (8.4.1, 8.4.2, and 8.4.3). The fourth and last subsection (8.4.4) draws on the recovery-oriented paradigm to offer a critical appraisal of pursuing this expansion and diversification within the current mental health system.

Stawarz et al. (2019b) found that people who actively chose to use mental health technologies held different expectations and more positive views of their role than people who viewed them as an inferior alternative to in-person treatment or a cost-saving solution adopted by services. In the present study, in-person help from a healthcare professional was seen as important because of the perceived meaningfulness of the in-person encounter and the experience of receiving active, personalised expert support. People felt that this was unique to in-person treatment and its absence from online mental health tools was seen as a limit, similarly to Stawarz et al.'s (2019) finding. At the same time, online mental health tools were actively sought out and valued by many of the participants.

Consistent with previous research (Schueller et al., 2018; Stawarz et al., 2018, 2019b), many people used both online mental health tools and traditional mental health treatments and services, often engaging in the former to enhance aspects of the latter or access additional sources of support to use alongside the support they were already getting from other offline sources. Another reason why people took up online mental health tools was to access support in a form that was better tuned to their needs and preferences than traditional in-person forms of support, such as getting help without having to talk to a healthcare professional in person or at all, or to access support at a time and pace of their own choosing. Overall, online mental health tools did not appear to be used in place of in-person support from a healthcare professional, except when the latter was unavailable or otherwise unattainable, a situation in which online resources could help people fill such gap in their need for support. The use of online mental health tools as a complement to traditional treatments or as an alternative to unsuitable or unavailable traditional treatments suggests that online mental health tools contributed to creating a wider choice of support options in addition to traditional treatments, expanding and diversifying available options for support.

People's expansion and diversification of the supports available to them was not limited to the use of online mental health tools. This was evident when participants engaged in formal treatment alongside other activities of various non-clinical nature (e.g. walking, lifestyle changes, practicing mindfulness meditation, being in nature, writing poetry, educating themselves on mental health). It was also evident when people combined support that involved sustained engagement over time (e.g. talking therapy, daily meditation practice) with support accessible on a need basis (e.g. when needing relief in the moment). Online mental health tools were used as part of all this in order to enhance or get additional support alongside those other treatments and activities. It is understandable that people may find it beneficial to combine support from diverse sources. Mental health problems can have a significant impact on a person's life and can affect many life domains (Connell et al., 2012). National mental health policy in Ireland recognises this complexity and highlights the importance of an integrated multidisciplinary approach in mental health care

(Farrelly et al., 2023; HSE Mental Health Services, 2017). However, many mental health service users report that the support they receive does not adequately take into account how their mental health problem has affected multiple aspects of their life, lament difficulties accessing specific mental health services, and would like better integration between formal mental health services and other support services such as peer support, art / music therapy programmes, exercise and meditation programmes, and housing and employment services (Ó Féich et al., 2019). Similar to this desire and need for support to come from diverse sources, existing research has shown that people who use technology to support their mental health often combine different technologies, each serving a different purpose or need (Carpenter-Song, Noel, Acquilano, & Drake, 2018; Chiauuzzi & Newell, 2019; Smith et al., 2021; Sorkin et al., 2021; Stawarz et al., 2019). In the present study, participants combined diverse sources and modalities of support, both formal and informal, online and offline, for use on a long-term as well as on a need basis. In particular, when online mental health tools, treatments and other activities were successfully used alongside one another, people positively viewed them as distinct elements of a broader, multifaceted endeavour to support their mental health in which each type and source of support had its useful place. In a context like the Irish mental health care system where lack of treatment choice and of properly integrated support services effectively results in a system that relies on single-solution treatments (Ó Féich et al., 2019), the expansion and diversification of existing options of support facilitated by online mental health tools may be regarded as offering people with mental health problems opportunities to access much needed additional support, helping them create their own ecosystem of sources of support.

While most participants combined online mental health tools with traditional interventions, a small subgroup appeared to have never received the latter. For these people, support was coming from online mental health tools but not, or not yet, from professional services (although support was not necessarily coming from online mental health tools alone; it is not known whether they were engaging in other forms of informal support beside using online mental health tools). Similarly, other participants appeared to have used online mental health tools before they ever received traditional interventions.

One possible explanation is that as an individual's mental health needs change, their help-seeking needs may also change in terms of both the nature of the support needed and the mode of accessing it, thus different sources of support, formats and modes of access may be helpful at different moments in time (Biddle et al., 2020; Pretorius et al., 2020). In other words, a choice may be made to deliberately seek support through an online mental health tool rather than traditional services. In the present study, a number of participants had used online mental health tools because of a desire to solve their issues themselves or to find out how a specific approach (e.g. cognitive behavioural therapy) worked or if it would work for them. These indicate potential reasons why one may actively choose an online mental health tool over traditional support. In another instance, a few participants had felt hesitant about going to a healthcare professional or speaking to one in person, and had found in online mental health tools a way of getting help with which they felt more comfortable at that time, before eventually deciding to seek in-person professional treatment. Overall, this points to how online mental health tools may in some cases offer a preferable alternative to traditional, in-person interventions because of better accommodating one's help-seeking needs and preferences. This is consistent with the suggestion that online help-seeking can potentially encourage help seeking in those who do not intend or feel unable to seek support from a mental health professional or any other offline source (Levin et al., 2018; Wong et al., 2021). Once again, online mental health tools may be regarded as contributing to expanding and diversifying existing options for support. Because of their differences from traditional in-person interventions, they may also be regarded as increasing opportunities for people to find a form of support that meets them where they are at in their help seeking.

Taken together, these findings also highlight the importance of the personalisation of mental health support both in terms of the nature of the support, the mode of access, and the amount of support (e.g. multiple sources). People used online mental health tools in search of alternative modes of accessing support (relative to traditional in-person options) to fit with particular preferences and needs, such as having support that can be accessed quickly when the need strikes, or at a time and pace of one's own choosing, anonymously,

or without having to leave the house or travel. At other times online mental health tools did not suit people's needs, or not any more, such as when it was the experience of in-person care with a healthcare professional that was sought out, or when people felt overwhelmed by the amount of technology use and online-based communication within their daily lives. The importance of personalised mental health support was further evidenced by people who combined diverse sources of support (therapy, meditation, movement, etc.) and modes of access (online and offline / face-to-face) to support diverse care needs, such as complementing regular support (e.g. therapy) with just-in-time sources of help. In fact, although the qualitative analysis's focus on patterns in the data did not do enough justice to this, a striking aspect of the participants' interviews was the diversity of personal stories of experiencing, and in some cases living with, a mental health problem. Each interview participant told a unique story, in which specific forms of support and modes of accessing them, both online and offline, or combinations of them, acquired meaningfulness "in response to personal situations" and trajectories (Stawarz et al., 2018). For example, the use of a mindfulness meditation app had a profound and lasting impact on one participant in helping her manage her anxiety, and surpassed the help she had received in the past from therapy. Another participant undertook long commutes to attend therapy every month, which were compounded by the difficulties posed by severe depression and panic attacks. Accomplishing these difficult commutes made him feel capable of functioning, and this gave him hope. People's personal, unique stories and the sometimes stark differences between them are a reminder of the importance of avoiding a one-size-fits-all approach and ensuring that the choice of help sources, whether online or offline, fits individual needs (Pretorius et al., 2020; Stawarz et al., 2019b). This reiterates the importance of the availability of choice between alternative types of treatment and supports and ways of accessing them. Additionally, the great deal of uniqueness of each interviewee's story suggests that future studies of in-the-wild use of online mental health tools might consider using interpretive methodologies that put the personal experience centre stage (e.g. narrative approach, Interpretative Phenomenology), to help generate in-depth insight into the meaningfulness of particular help-seeking choices and into changes in help-seeking needs and preferences.

Enriching the current mental health ecosystem with a more diverse range of supports, including online mental health supports, may contribute to greater autonomy in help-seeking and treatment choice (McDaid, 2013) and better chances of accessing as many and diverse sources of support as needed. To this end, the ecosystem of mental health supports would need to be inclusive of diverse types of mental health and wellbeing supports (e.g. therapy, meditation, exercise, opportunities to learn more about mental health), social supports (e.g. help with housing and employment), as well as diverse modes of accessing supports (e.g. in person, via telephone, via email, via online video-call platform, via text messaging) (Ó Féich et al., 2019; Stawarz et al., 2019b). Regarding the latter, one way in which the diversification of modes of access may support greater autonomy in treatment choice is by accommodating individual differences in help-seeking temporalities. This requires viewing people's help seeking behaviours in terms of dimensions or continua rather than categories (Davis & Marsh, 2022; Read, 2013). According to Read (Read, 2013, p. 57) dimensional approaches to understanding mental health are based on the principle that "behaviours, thoughts and feelings vary over time and between differing social contexts". Categorical approaches (e.g. online / offline, face-to-face / non-face-to-face setting) offer reductive interpretations of people's lived experience, whereas dimensional approaches (e.g. non-face-to-face and face-to-face support seen as part of a continuum (Davis & Marsh, 2022)) contribute to "produc(ing) descriptions of us as real people engaging in certain behaviours, thoughts or feelings to various extents at various times, depending largely on what is happening to us" (Read, 2013, p. 57). For example, one of the participants in this study chose email counselling as she wished to try counselling but did not feel comfortable to talk with a counsellor face-to-face yet. In email counselling, technology and counselling are combined to enable a form of counselling based on a more anonymous form of "relatedness" between counsellor and client than in in-person counselling (Pretorius et al., 2020). The diversification and expansion of mental health supports on offer to include diverse modes of access may be usefully guided by the principle that people can engage in help-seeking to various extents in response to varying needs and circumstances. This may help create an ecosystem of mental health supports

that are better centered around the needs of their users, including meeting them where they are in their help seeking process.

8.4.1 Provision of opportunities for timely and flexible support

This study found that online mental health tools may be seen as contributing to expanding and diversifying existing options for support, by creating opportunities for people with mental health problems to get needed additional support, access support that better suits their needs than traditional treatment, or have an alternative to the absence of support resulting from unavailable treatments. This expansion is facilitated by online mental health tools providing types of support and modes of accessing them that differ from the format of traditional in-person treatments.

This study shows that a salient way in which online mental health tools contributed to expanding and diversifying options for mental health support was by providing opportunities to access support in a timely and flexible way. This was made possible by their 24/7 availability and it was evident in several of participants' patterns of engagement with such tools. One such pattern of engagement related to people increasing or decreasing the amount of use of online mental health tools over time in response to changing needs and preferences. This also pointed to the benefit of having a trusted online mental health tool that people could go back to in times of need. In particular, the flexibility of quickly accessing such tools when specific needs and situations arose and get relief in the moment (such as when experiencing stress or problem sleeping) was a salient reason why people used online mental health tools, particularly apps and other resources they accessed on their smartphones.

Looking specifically at mobile digital technologies, while some studies have reported low use of mental health apps among those with mental health concerns (Carpenter-Song et al., 2018; Mata-Greve et al., 2021; Pretorius et al., 2019b), this study is consistent with

others in finding that apps to support or track mental health are popular among those who use digital mental health technologies to help with their mental health (Bell et al., 2022; Stawarz et al., 2019b).³⁶ This study is also in line with other research (Kikas et al., 2025; Pretorius et al., 2019b; Stawarz et al., 2019b) in finding that smartphones are a highly popular access point for online mental health tools in general. Currently, clinical evidence does not support the use of standalone mental health interventions delivered through smartphone apps. One proposed explanation is that the habitual ways in which people interact with smartphones, characterised by short and frequent use sessions often unconsciously initiated (Deng et al., 2019; Heitmayer & Lahlou, 2021; Oulasvirta et al., 2012), are incompatible with interventions that require a more sustained level of attention, motivation and engagement (e.g. a CBT-based self-help programme) (Weisel et al., 2019). Consistent with this, Firth et al.'s (2017) meta-analysis of randomised controlled trials of smartphone apps for depression found a negative (although non-statistically significant) trend between the length of smartphone-based mental health interventions and their effect on symptoms, with longer interventions being less effective. The present study is in line with other studies (Humphreys et al., 2024; Stawarz et al., 2018) in finding that users of online mental health tools value smartphones because they make support available at hand and ready to be accessed anytime and anywhere one chooses to. The possibility to quickly access support and relief when needed, which is made possible by the 24/7

³⁶ The discrepancy of findings regarding the prevalence of mental health app use among people with mental health concerns may be due to the heterogeneity of the studies, namely their use of different populations, their different research foci, and the linguistic differences in their recruitment adverts or the questions they asked their participants. For example, one study's recruitment advert invited young people "to take part in an online survey that looks at how young people look for information and help online for personal and emotional concerns" (Pretorius et al., 2019a), keeping a broad focus and deliberately avoiding medicalised language (e.g. terms like anxiety, depression, mental health problem, etc.). By contrast, the present study's recruitment adverts drew readers' attention to specific types of online resources, e.g. 'apps', and explicitly referred to 'mental health problems', inviting people to participate if they had used 'apps, online programmes or other online resource to get support for a mental health problem' (e.g. see Appendices B and C). Similar language was also employed by another study that asked their participants "Have you ever used apps to help you support your mental wellbeing, e.g. to reduce stress, help with your depression and/or anxiety, or track your mood?" (Stawarz et al., 2019a).

availability of online mental health tools, is maximised by smartphones, given their particular immediacy, mobility and ubiquity of use (Deng et al., 2019). This highlights the role that Internet and digital technology, and particularly smartphones, play in how people use online mental health tools to support their mental health, especially when they have a need for responsive help. Other studies have found that the use of digital tools for mental health support on a need basis is typical of apps, including those not specifically designed to address mental health needs (Smith et al., 2021; Stawarz et al., 2019b). Support that one engages with on a need basis stands in contrast to support that one engages with on an ongoing and regular basis (e.g. therapy or regular meditation practice). Regular and as-needed use of mental health supports can be regarded as two different patterns of engagement underpinned by different needs (Chiauzzi & Newell, 2019). This study's findings contribute to existing research in pointing to the reactive / responsive mode of use as being a salient way of using digital technology for mental health support, yet this has not been formally explored in the literature and deserves further attention.

Another way in which the considerable flexibility of access of online mental health tools was made clear in our study included the many people who used such tools because of the possibility of using them in their own time (47.7%) and at their own pace (38.5%). These figures are a lot lower than those reported in an Irish survey of young people and online help-seeking (Pretorius et al., 2019b). Young people (up to 24 years old) highly value autonomy and self-efficacy when seeking help (Davis & Marsh, 2022), which might help explain the lower figures in the present study as this was based on an older sample. Another difference between the above mentioned survey of young people and the present study is in how they asked about factors encouraging people to seek help online: the Pretorius et al.'s (2019b) survey asked in hypothetical terms (i.e. which factors would encourage participants to seek help online) while the present study asked people about their actual reasons for having used an online mental health tool. In the present study, being able to choose when to access an online mental health tool depending on the user's time availability, time preferences, or amount of support needed, was seen by the participants as convenient and could contribute to choosing an online mental health tool that

specifically allowed for this flexibility. Sometimes it was perceived to be an advantage compared with synchronous (real-time) forms of support, where access is limited to set dates and times (e.g. live meditation course) or by the provider's availability (e.g. appointment with a mental health professional).

In particular, with two thirds (65.1%) of participants regularly accessing online mental health tools in the evening to night-time period (6 pm – 12 am), i.e. outside of regular working hours, this was the moment of the day when using online mental health tools took place most frequently. Participants were significantly more likely to use their online mental health tools during this period of time than at any other time (morning, afternoon, or night-time to early morning period). This is in line with data about online mental health tool users in other countries which have found a concentration of use in the evening and nighttime (Illingworth et al., 2024; Kikas et al., 2025). This is a time of the day when most traditional services are unavailable. Previous research has found that the use of out-of-hours primary care health services is higher among certain groups, including people with a mental health problem (Foster et al., 2020). Additionally, the present study found that accessing online mental health tools between 6 pm – 12 am was significantly associated with reasons to do with timeliness and flexibility of use, namely the possibility to use such tools immediately, in one's own time, at one's own pace, and without needing to travel. Participants' employment data may help make sense of these findings. The great majority of participants (74.3%) were either employed fulltime / part-time or students / in training. The prevalence of using online mental health tools in the evening may depend on people naturally having more time to do so after their work or college day is over. Alternatively, it can be difficult for people to access daytime mental health services due to work (or study) commitments, yet out-of-hours services other than Emergency Departments are lacking in Ireland as well as elsewhere (Illingworth et al., 2024), further limiting people's options to access mental health support (Ó Féich et al., 2019). This suggests that online mental health tools may be filling a gap that is not met by traditional services (Illingworth et al., 2024).

8.4.2 Use of online mental health tools while on a waiting list for treatment

Another aspect of many online mental health tools that contributes to making them easily accessible is the possibility of starting to use them immediately, i.e. without waiting times. In this study, as many as 45% of the participants indicated using an online mental health tool for this reason. The immediacy of online mental health tools stands in contrast to the lengthy wait times that many people face when seeking help from mental health services. In the present study, participants displayed acute awareness of barriers to accessing needed support, such as financial barriers to getting therapy (both offline and online therapy) and formal services' inability to offer timely appointments and ensure access to affordable treatment for as long as needed. These barriers to accessing mental health treatments closely echo those reported by users of HSE mental health services (Ó Féich et al., 2019). The present study found that online mental health tools were sometimes used to compensate for these gaps. An inability to access traditional mental health services in a timely manner or at all may also help explain those participants who, in the present study, reported they had never received any traditional interventions or whose use of online mental health tools had preceded their use of any traditional interventions.

This study identified one such situation in particular, namely the use of online mental health tools to get support while on a waiting list to receive professional treatment, reported by 28.4% of participants. Long waiting lists to access required services are a chief issue likewise affecting users of Irish primary and secondary mental health services. For example, talking therapy is one of the most commonly mentioned services that adult users of HSE mental health services believe would be beneficial to them, yet it is often unavailable to them (Ó Féich et al., 2019), with many adults referred to talking therapy facing waiting lists of at least three months, and several of them waiting over a year (HSE, 2019, 2021). By contrast to the long wait times to access therapy, the flexibility of access of online mental health tools provides a form of support that is often immediately accessible, making it available as soon as needed. For people who are willing to seek help online, online resources that are immediately accessible may help them circumvent the

problem of being left with no or limited support while on a lengthy wait list for treatment. Beyond the online context, the study's findings point to a need for mental health supports for people who are waiting to access other support. Specifically with respect to the online context, the study's findings suggest there may be a demand for digitally accessible supports among people who are at this stage of their care seeking journey. The findings also show that Ireland has this in common with other high-income countries like the UK (Humphreys et al., 2024) and Australia (Alvarez-Jimenez et al., 2025), whose mental health systems are affected by similar problems of poor accesses due to wait lists and staff shortages (Australian Government, 2022; National Audit Office, 2023; Punton et al., 2022; Rosenberg et al., 2023).

Furthermore, the present study found that the likelihood of using an online mental health tool to get help while on a waiting list for treatment was significantly higher among non-heterosexual than heterosexual participants. Sexual minorities have notably poorer mental health than heterosexual people (Borgogna et al., 2019; Elliott et al., 2015; Källström et al., 2022) and are also worse off when trying to access treatments, as previously mentioned in section 8.3. Regarding the latter, a national LGBT survey in the UK found that long waiting lists are the most frequent reason given by LGBT people for having a hard time accessing mental health services (Government Equalities Office, 2018). Results from the qualitative arm of a national study of the experiences of LGBTI+ mental health service users in Ireland likewise found waiting lists to be a significant barrier to accessing services (Mental Health Reform, 2022). In light of the above, the significantly higher occurrence among non-heterosexual participants of using an online mental health tool to get help while on a waiting list for treatment deserves further attention, to establish if other studies can replicate this finding and whether differences in treatment barriers between heterosexual and non-heterosexual people may be a reason for it.

This study also points to a potential link between higher need for mental health support and the use of online mental health tools while on a waiting list for treatment. The quantitative and qualitative findings converged in indicating that many participants had

experienced elevated levels of distress and a heightened need for help, and these were salient reasons for trying to seek help through online mental health tools for these people. This is consistent with research from the US (Lannin et al., 2016; Mata-Greve et al., 2021; Sorkin et al., 2021), Canada (Richardson et al., 2020), and China (Hong Kong) (Wong et al., 2021), from both before and during the COVID-19 pandemic, showing that while uptake of online mental health resources is generally low, it is higher among people with greater distress. Similarly, an Australian digital prevention and early intervention service for young people with mild to moderate levels of distress was found to also be used by a non-insignificant minority of young people with more serious and complex presentations such as being at high risk of suicide or having previously been hospitalised for a mental health problem (Kahl et al., 2020). However, previous research did not highlight a possible overlap between people using online mental health tools because of heightened need for help and those using such tools to get help while on a waiting list for treatment. In the present study, specific groups of users presented common patterns of use relating to using an online mental health tool because of desperation for help and while on a waiting list for treatment. First, the participants who had used an online mental health tool to get support for feeling low / sad / depressed, feeling suicidal, self-harm, and eating issues, were all significantly more likely to have used an online mental health tool out of desperation for help, compared to those who did not use an online mental health tool in relation to those experiences. Second, those who used online mental health tools to get support for feeling suicidal or self-harm were also significantly more likely to have used an online mental health tool while on a waiting list to receive professional help, compared with those who did not use an online mental health tool to get support with such experiences. This study contributes new knowledge in finding that two groups of online mental health tools users, those who were seeking help for feeling suicidal or for self-harm, had a higher incidence of both individuals who had used online mental health tools out of desperation for help and individuals who had used such tools to get support while on a waiting list for treatment. In Ireland, long waiting lists in mental health services also affect people in urgent need of mental health care (Ó Féich et al., 2019). Delays in accessing the required mental health care can have a detrimental effect on people's mental health (*ibid.*). This raises the question

of whether online mental health tools may be filling an unmet need for support for people with heightened emotional distress who are on a waiting list for treatment.

8.4.3 Provision of opportunities to access support without having to attend in person

Alongside ease and flexibility of access, another important way in which online mental health tools may be regarded to contribute to expanding and diversifying available options for support is by opening up opportunities to access help that does not require attending in person because support is available remotely. The home was the single most used location from which people accessed online mental health tools, with 85.4% doing so regularly.

One reason for accessing mental health support from a private remote location is to have greater anonymity than in traditional (offline) help-seeking pathways. Several participants indicated that privacy (33.9%) or anonymity (30.3%) were part of the reasons why they had used an online mental health tool. The study also found that anonymity as a reason for using an online mental health tool was significantly more likely among people who had used such tools to get support with *Feeling suicidal* or *Feeling low / sad / depressed*, compared to participants who did not use online mental health tools for support with these experiences. As psychological pain is a key characteristic of suicide (Pompili, 2019) there likely is overlap between the *Feeling suicidal* and the *Feeling low / sad / depressed* subgroups in the study, leading to these occurring together in this finding. This quantitative finding reflects the importance of anonymity in help-seeking for people with suicidal thoughts, which has also been observed elsewhere (Biddle et al., 2020).

People who experience depression or suicidal feelings face elevated social stigma (Carpiniello & Pinna, 2017), which is an important barrier to seeking help (Corrigan et al., 2014) particularly in-person help from a mental health professional (Lannin et al., 2016; Levin et al., 2018). A common argument in the online help-seeking literature is that the

anonymity of the Internet may provide a less stigmatizing experience than traditional (in-person) help-seeking and thereby facilitate help-seeking (Pretorius et al., 2020; Wallin et al., 2016; Wong et al., 2021). In line with this, in this study the integration of results highlighted the importance of using online mental health tools for privacy and anonymity, with one reason for this being a greater desire for privacy and anonymity around one's mental health problems than allowed by in-person services, so as to avoid exposure to stigmatising attitudes or prevent others from finding out. This study took place during a time (2018-2020) when there was a widespread perception among the Irish adult population that Irish society stigmatises people with mental health problems (St Patrick's Mental Health Services, 2020). How people think others might respond to their mental health problems (e.g. fear of being discriminated against) is known in the literature as anticipated discrimination (MacGabhann et al., 2010). Research has found a close relationship between anticipated discrimination and reports of discrimination, as people with mental health problems who avoid doing things out of fear of being discriminated against are also more likely to report having been discriminated against (*ibid.*). In Ireland since the COVID-19 pandemic, growing levels of comfort at opening up about one's mental health problems with close ones have been reported; however, this coexists with a widespread belief among the Irish population that people with mental health problems are stigmatised in Irish society (St Patrick's Mental Health Services, 2022). This may be viewed as a form of anticipated discrimination among the general population. In light of the study's findings of anonymity as a reason for using online mental health tools, a question is raised around the extent to which the anonymity of the Internet may be attractive in the context of such widespread presence of anticipated discrimination.

When most in-person services and activities were abruptly suspended society-wide in the wake of the COVID-19 pandemic outbreak, the rapid implementation of online alternatives in mental health care practice was made possible by two decades of e-Mental Health research and advancements. The COVID-19 pandemic enabled a turning point in the history of e-Mental Health adoption: while implementation of online mental health services in routine mental health care practice had been slow before the pandemic, the prolonged use

of online services in place of in-person services during the COVID-19 pandemic have contributed to greater social acceptance of online modes of delivering and receiving mental health support (Wind et al., 2020). However, an interest in accessing mental health support without having to attend services in person is not new to the pandemic and post-pandemic world. In this study, which captures pre-COVID usage of online mental health tools, more than one third (36.7%) of participants used an online mental health tool because of the possibility to access mental health support from home, and one in four (25.7%) had been attracted by the opportunity to access support without having to travel. This study could not ascertain the specific reasons for the desire to access mental health support without leaving the house or having to travel. However, it may be argued that the possibility of accessing help from home may be attractive to those who want help-seeking pathways that offer better privacy and anonymity than attending in-person mental health support. For example, in Ireland as well as elsewhere, lack of anonymity is a known issue faced by mental health service users in rural areas, and a reason for both offering and seeking online services instead (Darcy & Dooley, 2007; Milton et al., 2021; Mitchell et al., 2023). Although analyses of associations between participants' setting (rural vs urban) and reasons for using online mental health tools could not be performed, one in four questionnaire participants reported living in a rural area at the time of their use of online mental health tools. Online-accessible mental health support may also be implemented for the benefit of people who have a disability or other condition that prohibits them from accessing other mental health services. In this study only one participant had used an online mental health tool for this reason, but an Irish study by Pretorius et al. (2019b) found that being too unwell to reach local support services was a reason for 36.5% of young people to want to seek help online for personal and emotional concerns. Presently, researchers, developers, and healthcare professionals have an opportunity to capitalise on the experience gained during the pandemic with implementing and delivering mental health support online, and how to address the associated challenges, in order to keep providing options for the benefit of those who have a preference or need to access mental health support remotely.

The study also found that non-heterosexual participants were significantly more likely than heterosexual participants to have used an online mental health tool to get help without needing to leave the house. This might have been an effect of their greater use of online mental health tools to get support while on a waiting list for treatment, which was previously discussed. Alternatively, sexual minorities might be another group of users of online mental health tools that finds the possibility of accessing support remotely preferable to attending services in person, such as due to a need for better anonymity or privacy. Fear of stigma or being labelled is an important barrier to accessing mental health services reported by LGBT people in Ireland (Higgins et al., 2016). As noted earlier, accessing support from one's home may offer greater anonymity than services requiring in-person contact. This in turn may minimise stigma for LGBT help seekers (Liu et al., 2023). However, the present study found no statistically significant difference between heterosexual and non-heterosexual participants in terms of using online mental health tools for anonymity or privacy reasons. Geographical distance from services is another salient barrier to accessing mental health services experienced by LGBT people in Ireland (Higgins et al., 2016) and might help explain non-heterosexual participants' greater interest in accessing support without leaving the house (relative to heterosexual participants). Limited availability of services locally, outside of urban locations, means that people need to travel long distances to avail of services (*ibid.*). Those who rely on others or on public transport for travelling may also be at a disadvantage.

Lastly, while seeking help online may offer a more anonymous experience than traditional help-seeking pathways, it is not intrinsically anonymous. A previous study found that people who seek help online can still worry about other people finding out that they are experiencing a difficulty (Pretorius et al., 2019b). The present study adds to this in finding that a concern with others finding out about one's mental health problem can include others met online, such as on local online support groups, and affect the choice of online group (e.g. choosing one with an international audience rather than an Irish-based one).

8.4.4 Provision of opportunities to exercise autonomy and personal resourcefulness – a recovery-oriented critique

In this study, participants' pursuit of mental health support through combining multiple forms of support and choosing what form of support to get and when thanks to the flexibility of online mental health tools stands in contrast to the experience of many users of mental health services. Medication remains the main treatment approach within mental health services (Ó Féich et al., 2019) with many service users not being offered alternatives (NICE, 2018). Many are also not involved in decisions about their treatments as much as they would like (Care Quality Commission, 2022a, 2022b; Ó Féich et al., 2019). This despite the fact that national policy on mental health care in Ireland is underpinned by a recovery orientation, whose principles include the importance of service users' self-determination and personal choice and preference in treatment options (HSE Mental Health Services, 2020). McDaid (2013) asserts that "(i)n the absence of choices between alternative types of treatment, people are essentially denied their right to make decisions over their own mental health care".

For Pretorius et al. (2020) "(t)o go online for help in the first instance can be theoretically understood as an autonomous act". In the present study, multiple findings point to participants' use of online mental health tools as being an "active choice" (Stawarz et al., 2019b). Active choice underlays the action of taking up an online mental health tool out of one's own interest and searches, which was the main way in which participants found online mental health tools and decided to use them. People's autonomy could also be seen when they acted on their need for both better understanding and practical support, actively seeking information online (as well as offline) that could hopefully help them make sense of their psychological distress and learn what could be done about it. Participants could also be seen taking action to further support their recovery when they took up online mental health tools to complement the treatments they were already receiving, either to enhance aspects of the latter or to add new sources of support alongside them. Similarly, when prevented from accessing traditional treatments in a timely manner or at all, some

participants took action by looking for online mental health tools to use as an alternative to being left with no support. Lastly, participants exercised choice and preference when they chose between an online and a traditional help-seeking pathway based on which one fit with their help-seeking needs and preferences (e.g. preference for the flexibility of use of a meditation app by contrast to having to stick to the set times or schedule of live classes). Stawarz et al. (2018) found that mental health apps “allow users to take an active role in supporting their mental health and well-being” both when used as self-management tools or as an adjunct to therapy. The present study’s findings replicate this. In addition, they show that the active role people took in supporting their mental health through the use of online mental health tools was freely chosen and aligned with their own help-seeking needs (B. Brown, 2021). While lack of choice in treatment options in mental health services limits autonomy, the expansion of existing sources of support facilitated by online mental health tools could be seen as supporting more autonomy of choice for people seeking support for a mental health problem.

Autonomy and choice are important concepts in the recovery-oriented approach in mental health care. In pointing to people’s autonomy and active choice, a number of the above reported patterns of engagement with online mental health tools invited further comparison with the recovery-oriented paradigm. This is discussed next.

The recovery-oriented approach in mental health care is built around two core elements: a personal recovery element and a social or relational recovery element (McDaid, 2013). The personal element builds on the core principle that recovery is a personal process in which people with lived experience of mental health problems define what recovery is for themselves (*ibid.*). Additionally, recovery is envisaged as a process of growth and development in which the person identifies, develops and taps into their own strengths and capacities (Higgins, 2008; McDaid, 2013). The personal element of the recovery-oriented approach exists within a broader social element. This acknowledges that supportive human connections are essential for human life and that social and interpersonal conditions play a central role in the flourishing or impoverishment of mental

health and wellbeing (Clements & Davies, 2013). The social element of the recovery-oriented approach views “connecting with a network of supportive people and organisations” as one of the critical factors in supporting personal recovery (McDaid, 2013). At its core, it is based on an equality and social justice agenda (McDaid, 2013, 2014). From this position, a recovery-oriented approach “acknowledges the person’s rights to meaningful participation in community life”, demanding the social inclusion of people with mental health problems and social responsibility on the part of communities and public bodies to remove “social, attitudinal and economic barriers” to social inclusion and mental health care (Higgins, 2008, p. 10). McDaid, quoting from the 1998 New Zealand Blueprint for Mental Health Services, is unequivocal about the relationship between personal recovery and social responsibility: “individuals must take responsibility for their recovery, but “personal responsibility must be matched with social responsibility”, with communities and public agencies taking responsibility for supporting recovery” (McDaid, 2013, p. 6). The social element of the recovery-oriented paradigm explicitly rejects individualist discourses of self-care and self-responsibility (Brosnan, 2014), which focus on individual behaviours and choices to the effect of overlooking the social and economic conditions that make those choices possible or not (Brosnan, 2014; Lupton, 2013).

As described above, the personal element of the recovery-oriented approach places importance on the individual defining their recovery needs and goals and taking responsibility for them through exercising self-determination and developing personal resourcefulness (McDaid, 2013). This resonates strongly with people in the present study, whose engagement with online mental health resources was driven by autonomous choice, personal help-seeking needs and goals, and a desire to be active participants in managing and supporting their own wellbeing.

The recovery-oriented approach also asserts the centrality of the lived experience of the person with a mental health problem in the recovery process and values the person’s experiential knowledge (HSE Mental Health Services, 2017). “People living with a mental health condition develop an understanding of their condition over time. They often know

from their own experience what works best for them in maintaining their mental health and what is ineffective” (McDaid, 2013, p. 10). This resonates with the process of experiential learning through which, over time, the people in this study developed insights and strategies to navigate the realm of online mental health tools, screen for safe and unsafe ones, and establish which may or may not be helpful. This showed resourcefulness and skills on participants’ part. The recovery-oriented approach places great importance on personal strengths and capacities. This principle is based on a critique of the medical view of mental health problems as pathologies or deficits, alongside the recognition that people with mental health problems have the capacity to help themselves and recover (Higgins & McGowan, 2014; McDaid, 2013). The medical focus on fixing the person’s supposed deficits is replaced with the more empowering focus on the person’s strengths and building on their capacities (McDaid, 2013). Self-directed learning was one such capacity that was evident among the participants in the present study, as a salient way in which people used online mental health tools was as a source of information and education around mental health problems, particularly in the hope of understanding their distress better and finding out what they could do to manage their mental health problem. This learning pursuit was a distinct element of how participants endeavoured to support their mental health and cope with mental distress.

This finding invited comparison with the concept of recovery-oriented learning or education and its role in the recovery process. The concept of recovery-oriented education is one of the four principles on which the Irish National Framework for Recovery in Mental Health is built (HSE Mental Health Services, 2017). With respect to people pursuing recovery, recovery-oriented learning refers to “the process by which individuals explore, assimilate and create the knowledge required for recovery to occur in their own lives” (HSE Mental Health Services, 2017, p. 21). Recovery-oriented education is based on an adult education approach and is delivered in formalised settings such as Recovery Education Services and Recovery Colleges. These are built on recovery-oriented principles and values, have governance structures supporting their management and operation, and deliver recovery education content that is “reviewed by an advisory group to ensure educational

quality and the advancement of recovery processes” (Mental Health Engagement and Recovery Office, 2020). This system’s guiding ethos is to “provide people with a shared space to learn with, and from, others in a non-judgmental, accepting and encouraging environment where challenges are explored in a positive way” (Mental Health Engagement and Recovery Office, 2020, p. 10). The combination of the previously discussed personal and social elements of the recovery-oriented paradigm are evident here. Key benefits of this as experienced by people include increased understanding of their mental health problems, learning skills for self-management of their problems, and an increased sense of empowerment (Coulter, 2012; Liapi et al., 2022; Ó Féich et al., 2019). These came up in the present study as salient reasons for engaging in self-directed learning through online mental health resources, denoting their importance for people with a mental health problem. However, in the present study people’s self-directed learning was a solitary endeavour. One downside of this, as shown by the study’s findings, is that the process of self-learning and self-exploration took place in the context of potential risks that people had to navigate on their own. This is in stark contrast to when self-direction in learning and in exploring one’s difficulties takes place within a shared space with principles of safety, supportiveness, and positive self-exploration embedded in it, such as a recovery-oriented educational setting.

In sum, a number of aspects of people’s engagement with online mental health tools resonated with principles of the recovery-oriented approach, in particular the centrality of self-determination, personal resourcefulness, and recovery-oriented learning. These processes support recovery by promoting hope and confidence in one’s capacity to lead a fulfilling life (McDaid, 2013). Online mental health tools created opportunities for people to exercise their autonomy and put their strengths and capacities to use in enhancing and looking after their mental wellbeing. However, this might be a double-edged sword within the current state of services for people with mental health problems in Ireland, where, as a result of unevenly distributed and disjointed services and lack of treatment options, it largely falls on the individual to create their own ecosystem of sources of mental health support. On the one hand, online mental health tools could be regarded as enabling

processes that support recovery. On the other hand, there is the question of how much of people's mobilisation of their autonomy and personal resourcefulness in creating their own ecosystem of supports is born out of necessity, i.e. out of unmet needs created by a system of under-resourced and poorly integrated services. This study's findings suggest that the expansion and diversification of existing sources of support facilitated by the inclusion of online mental health tools could be seen as supporting more personal autonomy for people seeking support for a mental health problem, relative to mental health services. In the meantime, structural, social and economic barriers to accessing mental health services persist (Ó Féich et al., 2019). Mental health systems that invest in online mental health tools without adequately addressing existing barriers to traditional mental health services may put a big strain on people's individual resources. They are also likely to reinforce the divide between those who have sufficient personal emotional and economic resources to overcome or bypass those barriers and those who do not or whose personal resourcefulness is being depleted by the persistence of those barriers (Higgins et al., 2014). This divide extends to the resources needed to access online mental health tools (e.g. economic and technological resources), and is further compounded by individualist ideas of self-care and self-responsibility that frequently inform the development and promotion of health and mental health digital technologies for public health goals (Lupton, 2013, 2016). The importance of a critical and social equality agenda in mental health care is renewed in the context of the potential expansion of the current system of mental health services to include online-delivered options.

8.5 Reliability of online mental health tools and managing safety

In line with other studies (Schueller et al., 2018; Stawarz et al., 2019b), the participants in this study found out about online mental health tools as a result of their own interest, mentions from friends and family members, and independent online searches rather than through recommendations from a healthcare professional. A characteristic of this process, also reported elsewhere (Pretorius et al., 2019b; Schueller et al., 2018), was a hands-on, trial-and-error approach to finding suitable online mental health tools, which involved

screening online mental health tools based on information made available by their providers, insights from other users (e.g. ratings and reviews), and, ultimately, trying them out. A significant aspect of this process was the challenge of determining what resources were trustworthy or not.

The trustworthiness of online mental health resources is a main area of concern for people who seek mental health support online (Pretorius et al., 2020; Stawarz et al., 2018, 2019b). In this study, this came up for participants in the context of searching for online mental health tools on their own. People stressed that this activity came with the risk of coming across unreliable or harmful content without realising it being so, applying it to oneself, and exacerbating one's distress as a result. The abundance of health and mental health information of variable quality available online can make it difficult for people to know what resources are trustworthy and safe to use (Moult et al., 2018; Pretorius et al., 2020; Schueller et al., 2018). In this study, participants contrasted this problem and the associated risks for their mental health to the expert, active guidance received directly from a healthcare professional. Yet finding online mental health tools on one's own, i.e. without the involvement of a healthcare professional, remained the main approach. This points to a potential tension between the safety people associated with knowledge coming from a healthcare professional and the riskier practice of seeking online mental health tools on one's own. Likewise, while the risks to one's mental health when searching for an online mental health tool in this way were deemed to be greater for someone in a heightened state of mental distress, many participants had turned to online mental health tools precisely when highly distressed.

The concept of ambivalence may help make sense of these areas of potential tension. The notion of ambivalence, which has a longstanding tradition within sociology, has recently been applied by Marent et al. (2018) to attend to the tensions that people experience when digital technologies become embedded in care practices (Henwood & Marent, 2019). The analytical concept of ambivalence "accepts the simultaneous existence of two opposing orientations, perspectives or positionings and 'facilitates both/and thinking' (Ashforth et

al., 2014, p. 1465)” (Marent et al., 2018, p. 139). In the present study, participants *both* attached safety to expert guidance received directly from a healthcare professional *and* engaged in a help-seeking practice (finding online sources of support on their own) that lacked this safety net. Participants’ response to this was to emphasise the need to adopt a cautious attitude, be mindful of not accepting everything available online at face value, and choose online resources offered or endorsed by trusted providers such as reputable and well-known mental health organisations, official health organisations, and colleges / universities. People trusted that such organisations would provide safe and reliable online content, which, similarly to expert guidance received from a healthcare professional, they regarded as protection from the risk of unknowingly incurring in harmful content. This might be seen as having the effect of reconciling the tension between the safety people associated with in-person professional help and the absence of such safety when searching for online mental health tools on their own. The solution proposed by the participants was not necessarily to avoid this potentially risky practice, but to engage in it as safely and responsibly as possible through being aware of the risks it may pose and trying to actively prevent them.

This study suggests that the expansion and diversification of existing sources of support facilitated by online mental health tools could be seen as supporting more autonomy for people seeking support for a mental health problem. Previous research found that people develop strategies to determine the reliability of an online mental health resource, but also that being unsure if resources are reliable is an important barrier to seeking help online (Pretorius et al., 2019b). The present study is consistent with previous research which found that in the eyes of users of online mental health resources, a connection with reputable government bodies, formal healthcare organisations, educational institutions, evidence-based research, or healthcare professionals is assurance of the credibility of an online resource (Pretorius et al., 2019b; Schueller et al., 2018; Stawarz et al., 2019b). Elsewhere research has found that users of online mental health resources desire the involvement of healthcare professionals, although in anonymous form, such as live chatting or instant messaging with a healthcare provider or professionally moderated online peer-

support forums, to ensure support is received by a trained expert in a safe online space (Biddle et al., 2020; Stawarz et al., 2019b). In the present study, the trust participants placed in mental health and official healthcare organisations to provide safe and reliable content online indicates that they welcomed and desired healthcare professionals' involvement in the development and provision of online mental health resources. In this, there is an opportunity for mental health professionals to contribute to a safer online help-seeking experience. In their capacity as developers and providers of trustworthy online mental health tools, healthcare providers also have an opportunity to support the autonomy of people who choose to seek help online (Pretorius et al., 2019b, 2020) as well as support the desire for self-directed learning that often motivates people's use of online resources. Minimising barriers to finding trustworthy online mental health resources will be particularly important for those with limited options to get support offline, such as those who use online forms of support as an alternative to unavailable treatments, and for those for whom online offers a more adequate pathway to their help-seeking needs and preferences than traditional (in-person) help-seeking pathways.

Beside a connection with a reputable or formal provider, the perceived nature of the intentions of providers of online mental health tools also played an important role in establishing the trustworthiness of an online mental health tool. It was important to participants that the intentions of a provider were genuine, guided by altruistic motives towards their audience, as opposed to exploitative motives. This strongly came up in relation to paid online mental health tools. Consistent with another study (Petersen et al., 2019), participants were highly suspicious of providers whose commercial agenda was seen to take priority. This happened when a paid online mental health tool employed marketing practices such as persistently advertising its subscription options to users, requiring the user to register one's payment details upfront to start the free trial period, or charging for use without allowing one to look at the app first. Some participants expressed somewhat tolerant views of such practices when encountered as part of other online platforms (e.g. the app of a business selling a service), but were seen as inappropriate when used by online mental health tools. Online mental health tools that used such marketing practices were

criticised for wanting to make a profit rather than help people, or for employing intrusive advertising practices, insensitive towards the needs of users with mental health problems. This could put people off from using an online mental health tool. People's concerns about the reliability of the content of online mental health tools, the safety of their mental health, and the commercially exploitative nature of certain health related online resources are well justified. Many online mental health tools such as mental health and wellness apps are direct-to-consumer products developed by actors (e.g. technology makers, start-up companies) that may not understand the needs of people with mental health problems (Nebeker et al., 2019) or may have ulterior commercial interests such as promoting the services or products of a partner company (Lupton & Jutel, 2015). This raises the question of what are ethical business practices in the field of online mental health resources, and whether these should be better regulated by the ethics principles of non-maleficence and beneficence. The relevance of the intentions underlying an online mental health tool (genuine versus commercially orientated) indicate that there is a moral or ethical dimension to how users establish or lose trust in online mental health tools. The moral judgment call that participants made related to how such tools 'treated' them both as consumers of online mental health products and individuals with a mental health problem. With regard to the consumer side, participants wanted online mental health tools with transparent and non-aggressive marketing practices, such as providing adequate time to decide whether to pay for their use (e.g. a free trial period of at least one month), clarity about what their free and paid content included, and avoid encroaching the use of freely accessible content with constant membership upgrade adverts. With respect to the 'mental health' side, exploitative marketing practices were seen as creating an inhospitable environment for those seeking to use an online mental health tool to help with a mental health problem (e.g. pop-up adverts disrupting the quiet needed to engage in certain exercises on a mental health app). Thus, this study suggests that an ethical argument may be made to support the need for better regulation of the marketing practices employed by providers of commercial online mental health tools in terms of safety for users. The study also supports the need to further explore the impact that the marketing practices of

commercial online mental health tools have on the experiences of users who engage with such tools to manage a mental health problem.

Alongside concerns with the content reliability of online mental health tools and the intentions of providers in offering such tools, a few participants also raised concerns with the protection of personal data collected by online mental health tools. In particular, they expressed their discomfort and distrust of online mental health tools of unknown reputation that asked users for personal information, including about their health or mental health, as part of the sign up process. Not having the option to sign up anonymously and withhold personal information contributed to deciding against using such online mental health tools. Once again, concerns such as these are well justified. Health and mental health data are especially sensitive data because of the harmful impact that their unauthorised disclosure can have for individuals, e.g. on their employability or insurability (Gaebel et al., 2020). Legally binding rules regulating health data handling and privacy in digital health and digital mental health are lacking or have a narrow scope, with many online resources marketed for healthcare conditions or symptoms falling outside this remit and leaving users' health data unprotected from being sold to data brokers (Armontrout et al., 2016; Torous et al., 2018; Vayena et al., 2018). However, in this study concerns with data privacy came up a lot less than concerns with the content reliability and commercial agendas of online mental health tools. Participants were not explicitly asked about any of these areas; they spontaneously brought up content reliability issues and dubious marketing practices more often. Looking at what point in the interviews these issues were brought up, issues to do with content reliability tended to be spontaneously mentioned by participants when asked what they thought about sources of mental health support being available online. This was the only observable pattern. Given that content is an important determinant of how people choose online mental health tools, at least initially (Schueller et al., 2018), it may be that content reliability issues came up earlier in the process of finding a suitable online mental health tool, making people more aware of such issues. Additionally, the interviews mostly focused on the online mental health tools that the participants had used the most, which were also those they had found to be most helpful,

consistent with findings that perceived helpfulness is crucial to long-term use (*ibid.*). A positive experience might have reinforced a feeling of trust in the online mental health tool, and this might in turn have contributed to assuming that privacy and security were present (Schueller et al., 2018). Alternatively, a perceived absence of major data privacy issues might have contributed to a positive experience. The interviews' focus on mostly positive experiences may partly explain why data privacy issues were brought up less often than other reliability issues. This suggests the need for future studies to focus on a wider range of experiences in order to confirm or disconfirm this pattern.

8.6 Access to the necessary technology and implications for accessing online mental health tools

Being able to use an online mental health tool presupposes that one has access to the necessary hardware (computer devices, Internet connection), that said hardware is working well (e.g. stable broadband connection), and that it is fit for purpose (e.g. fast broadband, compatibility of the functionality and processing power of a computer device with the digital technology on which an online mental health tool is built). In this study there were high levels of access to modern technology among the participants. Participants used the Internet daily. The greatest majority of them owned or had personal access to at least two computer devices, mostly a smartphone and laptop, with virtually everyone owning a smartphone. The greatest majority of participants likewise had broadband / wi-fi at home (or the place where they lived most of the time). However, the widespread ownership of devices and broadband did not necessarily grant access to stable Internet connection and an adequate device whenever needed.

One problem that 13.8% of participants experienced regularly was poor Internet or mobile network signal while using an online mental health tool. Similar rates of Internet access problems have been reported during the pandemic among Internet users more broadly (Perrin, 2021). Additionally, 23.9% of participants lived in a rural area at the time of the

survey, and a similar proportion lived in a rural area during the time they had used an online mental health tool. In Ireland, disparities in access to stable high-speed broadband (both fixed and mobile) persist between urban and rural areas. Most higher-speed broadband services are not available in Irish rural areas, which predominantly rely on basic broadband services and are most affected by variability in the quality, stability, and coverage of mobile broadband services (Cullinan et al., 2021). During the COVID-19 pandemic, which saw increased reliance on the Internet for a multitude of daily activities (work, education, access to mental health services, etc), households in rural areas reported the lowest level of satisfaction with the adequacy of their home broadband connection in the midst of increased volumes of data traffic on networks (*ibid.*).

While less common, another barrier to accessing online mental health tools reported by a minority of participants related to barriers to accessing a computer device when needed. The qualitative findings highlight the relevance of having options as to what device to access an online mental health tool from. First, smartphone played a central role in on-demand use of online mental health tools because of their portability and in-the-moment accessibility. Second, while smartphones were generally the preferred point of access because of such characteristics (i.e. their greater convenience), some people found that they were not always the most user-friendly devices, particularly (but not limited to) when engaging in online mental health tools that required prolonged typing. A more comfortable engagement in this particular activity was achieved through accessing an online mental health tool from a larger device such as a laptop or desktop computer, in line with previous pre-pandemic research finding that a computer / laptop is a popular point of access among those who use discussion forums, social media, websites, and online programmes to support their mental health (Stawarz et al., 2019b). Additionally, participants who had access to both a smartphone and a laptop or computer sometimes used both to access their online mental health tools and capitalised on the advantages of both points of access. Notably, approximately one in ten participants only went online from one device, a smartphone in all cases but one. One question this raises is whether relying on a single device rather than multiple devices for online access may impact on chances to access or

engage with online mental health tools (e.g. in terms of range or types). In investigating this, one aspect that needs to be considered is whether there are differences in the use of online mental health tools between people who may deliberately rely on a single device for online access and people for whom this is a result of having no or limited options for online access other than that device. Among Internet users in the US some “smartphone-only Internet users” find that their smartphone lets them do everything they need to do online and cite this as the most important reason for not needing to have broadband service at home (Perrin, 2021). By contrast, other smartphone owners report having a limited number of ways to get online other than their mobile phone’s data plan, including no broadband internet access at home (Pew Research Center, 2015). Future research should explore users of online mental health tools who are smartphone-only Internet users, their reasons for relying on a smartphone for online access, and whether they experience this as limiting of their opportunities to access online mental health tools. For example, compared with smartphone owners who are less dependent on their smartphone, smartphone-only Internet users are less likely to own another computer device, and more likely to have their smartphone use inhibited by financial and technical constraints such as reaching the maximum data allowed on their smartphone data plan and having to cancel or suspend their smartphone service for a period of time due to financial constraints (Pew Research Center, 2015). Such issues affected a few participants in the present study, who had their use of online mental health tools regularly hindered by running out of their Internet data allowance. Similarly, smartphones with limited data plan and storage, such as cheaper smartphones, can be a barrier to downloading and using mental health apps (Carpenter-Song et al., 2018; Lattie, Cohen, et al., 2022). Additional technical constraints affecting when one could use an online mental health tool were experienced regularly by a few of the participants, and included having limited options to recharge the battery of their computer device, and having limited options to access the Internet or a computer device.³⁷ This study found that people find benefits in the expansion

³⁷ The study found even higher proportions of participants who experienced Internet connectivity and computer access issues occasionally, however the impact of perceived occasional occurrences on one’s use of an online mental health tool may be better tolerated than the impact of frequent occurrences.

and diversification of available support options facilitated by online mental health resources. Given that access to such resources depends on having unencumbered access to the necessary technology, this raises the question of who gets to benefit from this expansion and who is excluded (Lupton, 2016). People with limited Internet and computer access, especially when this occurs frequently or when having to rely on a single device for access, may be at a disadvantage compared to those who have a stable internet connection and can access online mental health tools from their device of choice.

In our study, although not necessarily affected by these issues themselves, the interviewees displayed awareness that poor familiarity with digital technology, not having a computer device, and lacking reliable access to the Internet or at all would disproportionately affect particular groups such as homeless people and people with financial difficulties, as long as access to good Internet connection and suitable devices depends on individual purchasing power. Developers and providers of online mental health resources need to be aware of the sociodemographic and socioeconomic groups that are affected by disparities in access to the Internet and computer devices. Smartphone-only Internet users are more likely to be from low-income households, have less formal education, and belong to a marginalised racial group (Perrin, 2021). People who don't have high-speed broadband at home (Perrin, 2021), people from areas with poor broadband coverage (Cullinan et al., 2021), and owners of low-budget smartphones (Carpenter-Song et al., 2018) are likewise more likely to be from a socioeconomically disadvantaged and marginalised group than people who have high-speed broadband at home, live in an area with good broadband coverage, and own a high-end smartphone. Researchers and developers of online mental health tools, as well as mental health professionals using digital technologies to support clinical care, need to be aware of such disparities, and avoid assuming that everyone can comfortably access the Internet and has a well-functioning, up to date computer device. Economically disadvantaged technology users have limited financial resource to buy and maintain digital technologies (Carpenter-Song et al., 2018). They may be unable to afford upgrading an outdated device to a more recent model, and may therefore have to rely on a low-budget device; this is more likely to have lower storage

capacity, and may have insufficient processing power and functionality to ensure optimal technical performance of an online mental health tool, compared to a higher-end device. Economically disadvantaged technology users are also less likely to have money to spend on a data plan to use mental health apps (Mata-Greve et al., 2021). Socioeconomically disadvantaged people are less likely to receive mental health care (WHO, 2013) and have limited access to technology. When continued, unhindered access to the necessary technology is foreclosed, be it by recurrent technical issues or financial barriers, inequalities in accessing mental health supports may not only be perpetuated but worsened, such as when online mental health tools are provided as an alternative to unavailable services.

The study also points to the importance of paying attention to the device preferences of users of online mental health tools. The study found that both the use of smartphones and of larger computer devices as points of access were linked to a desire for convenience, practicality, flexibility, and comfort of use, but for different reasons. The need for convenience and comfort of use intersected with additional underlying needs or the type of activity the user was undertaking such as quickly getting access to support to get relief in the moment or needing to engage in extensive typing, leading to a preference for a different device in each case (respectively, a smartphone and a laptop / desktop computer). Previous research has suggested that concerns with privacy and anonymity may also play a role in people's preference for using smartphones when searching for help online (Pretorius et al., 2019b) due to the highly personal nature of smartphones which may be particularly attractive to those who desire a more private and discreet way of engaging in online mental health resources (Huang & Bashir, 2017; Stawarz et al., 2018). The present study adds to the limited literature on the reasons underlying people's preference as to what device to access an online mental health tool from, and supports the need to further investigate people's device preferences and the reasons for them. The findings indicate that specific devices may suit people's needs for practicality, flexibility, and comfort of use better than others, and point to this being linked to the interplay between needs and what features of a device are perceived as suiting those needs. However, data on Internet users show differences in the devices they use to access the Internet, such as the previously

mentioned smartphone-only Internet users. In Ireland, Internet users from both affluent and disadvantaged areas use multiple devices to access the Internet, with relatively similar rates for each device, except for laptops, whose use to go online has been found to decrease as the affluence of the area where one resides decreases. While three quarters (75%) of Internet users in very affluent areas use a laptop to go online, only half (52%) of Internet users in very disadvantaged areas do so (CSO, 2023f). In light of differences such as these, this study's findings of different devices suiting access needs differently reiterates the need to examine whether the choice of devices available to users of online mental health tools (or its absence) may impact their experience of use of and opportunities to access these tools.

Lastly, while most participants experienced no or minimal disruption to accessing the Internet, computer devices, and online mental health tools themselves, the study found that their use of online mental health tools could still be hindered by usability problems that involved the interface or functions of such tools. People were affected by such issues to various degrees, including leading to non-use. Usability has been found to be highly important to users of online mental health tools, and while ease of use facilitates uptake and continue use, significant usability issues frustrate users' willingness to keep using an online resource even if helpful (Padalyia et al., 2022; Schueller et al., 2018). Insights gained from the present study suggest that the disruptive effect of usability issues may be linked to various factors such as the nature of the issue, how much it interferes with ease of use and using an online mental health tool in the desired way, and the user's capacity to solve the issue or to circumvent it in a way that is deemed satisfactory.

As discussed previously, a diverse ecosystem of mental health supports, inclusive of a variety of sources of support and modes of access, may support greater autonomy for people when seek support for a mental health problem. However, the mere existence of options does not, on its own, ensure that people actually have "power of choice" over those options (Davies et al., 2017, p. 873). The power to choose the desired source of support requires both that choices are available and that the conditions for people to avail of those

choices are present. Currently in Ireland not all people have equal opportunities to access online mental health tools. As discussed above, issues such as the geographical reach of broadband / mobile network coverage, individual ability to afford the costs associated with obtaining the necessary technology (broadband or mobile subscriptions, costs of devices), and level of familiarity with the technology are likely to strongly affect “the power” a person has to “exercise their choice” of seeking mental health support through online resources (*ibid.*).

8.7 Perceived overabundance of technology and impact on online and in-person help-seeking

Alongside technology-related accessibility issues, this study indicates that a different sort of technology-related issue can potentially affect the use of online mental health tools. It arises from an environment characterised by an overabundance of technology use. Digital technology is a pervasive presence in the everyday lives of many individuals, allowing them to easily access a suitable device and Internet connection whenever needed or wanted. This facilitates access to online mental health supports. On the downside, the pervasiveness of digital technology can become overwhelming. In this study, a few participants talked about how their perceived overuse of technology and technology-mediated interaction that characterised their everyday life had contributed to choosing in-person face-to-face support over online support. Another pre-pandemic study found similar concerns among adults who use digital resources to support their mental wellbeing, but only noticed that these concerns could cause nonuse or discontinued use of such resources (Stawarz et al., 2019b).

Perceived overuse of technology links to the problem of “digital overload” (Smith et al., 2021), the experience of feeling overburdened by digital technology use, which results from the interaction of context, aspects of the digital technologies being used (amount, complexity, etc.), and resources available to the individual to deal with the complexity of

such technologies and their demands on the user (Cao et al., 2020; Smith et al., 2021). The experience of technology overload has been found to contribute to feelings of stress, fatigue, anxiety, and other adverse outcomes such as work-life conflict and loss of productivity in workers (Rasool et al., 2022) and in heavy users of digital technology such as college students (James et al., 2022; Upadhyaya & Vrinda, 2021).

In the present study, when concerns with technology overuse contributed to deciding against using online support in favour of in-person face-to-face support, this happened alongside a perceived greater need or appreciation of the in-person face-to-face element compared with its absence in the online support option. Lattie et al. (2022) found that during the COVID-19 pandemic, college students who found the shift to online learning isolating and were overwhelmed by the associated increase in technology-based communication expressed a desire to spend time away from digital devices outside of class hours and felt disinterested in using a digital mental health tool to support their wellbeing. Thus future research should also investigate when and how technology overload or concerns with technology overuse may contribute to offline help seeking. Lattie et al. (2022) saw in this an opportunity for digital mental health tools to promote in-person support activities and social connections in order to “offset some of the challenges associated with feeling isolated in a remote learning environment”. Plausibly, the reopening of in-person activities by educational institutions, workplaces, venues, and day-to-day life in general, has contributed to counteracting these challenges. However, the COVID-19 pandemic times acted as a catalyst for the society-wide implementation of online and hybrid (combining online and offline) modes of working and delivering services. These changes have partly remained in place after the pandemic and are predicted to stay (Wind et al., 2020). Given that concerns with overusing technology already existed among users of online mental health tools before the pandemic, such as a desire to avoid using computers or online communication more, discussions of such concerns, the associated phenomenon of technology overload, and its effects on online help seeking remain extremely relevant and necessary “in the context of an increasingly online society” (Lattie, Cohen, et al., 2022) and of a post-COVID19 world with its increasing digitalisation of mental

health care. Future research should investigate the conditions under which a perceived overabundance of technology use in one's life may lead to different help-seeking outcomes and what other factors play a role in this process (e.g. changed care needs).

The perceived complexity of the features, design and functions of a technology is another element that can contribute to the experience of technology overload, leaving users feeling stressed and frustrated and leading to disengagement from a technology, particularly if resources to help individuals deal with unfamiliar technological complexity are not available (Cao et al., 2020; Rasool et al., 2022). Irrespective of whether it leads to experiencing technological overload, complexity can negatively impact the usability and, therefore, accessibility of a technology. The complexity of online mental health resources need to be commensurate with the capabilities and limitations of specific groups of end users (e.g. young people, older people, people with cognitive disabilities) (Mohr, Weingardt, et al., 2017), in order to avoid creating unduly complex and mentally demanding systems. In the present study, the fact that interviewees found their online mental health tools easy to use, including easy to download and sign up to, suggests that the degree of complexity and usability of the online mental health tools and people's level of comfort and familiarity with the technology were commensurate with one another. This study also found a preference for apps with few core straightforward functions and a simple design, while lots of additional or sophisticated functions were regarded to be unnecessary or a distraction. Other studies have instead found a preference for health and mental health apps with multiple functions (Stawarz et al., 2018) such as because of a desire to access different features (journal, guided meditations, etc.) through a single app rather than several single-purpose apps (Smith et al., 2021). It is understandable that different people can have different preferences as to the design and components of online mental health tools. Regardless of these preferences, when designing online mental health tools, and particularly more elaborate ones, developers should ensure that their interactivity does not diminish their usability and detract users' attention and mental effort from the task of engaging with a digital resource to support their mental health.

Lastly, the present study found that 26.6% of participants got frequently distracted by app notifications while using an online mental health tool. This deserves further attention. Interruptions from digital devices are another aspect of the use of digital technology that has been linked to experiencing digital overload (Rasool et al., 2022). One study of college students' reactions to app notifications found that reactions varied depending on the amount and nature of the notifications and the context in which they were received. Participants became irritated when notifications were perceived to disrupt their activities, and became overwhelmed by notifications when already stressed or anxious due to other commitments (Smith et al., 2021). Complicating things further, research on daily smartphone use indicates that the disruptiveness of smartphone use is largely linked to self-initiated interactions with the device rather than reacting to incoming notification alerts. Although people's attention is easily grabbed by the latter, self-initiated interactions are a lot more frequent, tend to happen automatically, and lead to longer use sessions (Heitmayer & Lahlou, 2021). Distractions coming in the form of app notifications and people's own behaviours around this and their computer devices point to another element of the complex digital environment within which individuals interact with online mental health tools. Together, the findings discussed in section 8.6 and the current section highlight that there is a broader technological environment within which people's engagement with online mental health tools takes place and which can affect it.

8.8 Comparison of findings with other high-income countries

This study has explored the use of online mental health tools by adults with a mental health problem in Ireland, a country which can be placed midway between countries with limited digital mental health knowledge and interest and countries with a high level of digital mental health engagement across multiple key areas and contexts of their mental health sector and society (Gaebel et al., 2021). At the time of the data collection for the present study (2018-2019), engagement with digital mental health in Ireland was still rather limited, mostly existing as pockets of interest outside of public mental health services (see section

2.5). Nonetheless, the present study's findings may suggest that a demand for digitally accessible supports was emerging among people with mental health conditions. In particular, similarities were noted between findings about the use of digital mental health resources in countries with advanced digital mental health systems such as Australia, the UK, and the US, and some of the present study's findings. These similarities include the higher use of online mental health tools in the evening, the use of online mental health tools by people who are on a waiting list for other care, and the use of online mental health tools by an appreciable amount of people with high levels of distress. This suggests an emerging common picture across high-income countries, including Ireland, relating to online mental health tools being used by people to potentially fill gaps that are not being met by traditional mental health services, such as the dearth of out-of-hour services and of supports for people who are waiting for care.

8.9 Limitations and strengths of the study

As in all research, this study's findings need to be considered in light of the study's limitations. These are as follows:

Size of the samples. Although efforts were made to ensure that the size of each sample and quality of each data set were commensurate to achieving the goal of the study phase the sample pertained to as well as the goals of the integration, the samples are not large. This was due to the recruitment challenges described in section 4.5.3. In particular, a larger quantitative sample might have resulted in larger subgroups and stronger effect size for the analyses of association, which only had a small to medium effect size (small in many cases). Additionally, a few subgroups could not be included in these analyses due to being too small, therefore associations between these subgroups or between them and other subgroups could not be tested.

Over-representation of particular groups. Another limit of the study is the fact that within the quantitative sample certain groups and experiences were over-represented relative to others. In particular, virtually all participants were White, and participants who were female, heterosexual and living in an urban area were especially over-represented compared with participants who were male, non-heterosexual, or living in a rural area. Participants in the younger age groups (18 – 34 years old) were also over-represented compared to older age groups. Similarly, the study mostly attracted individuals who had used online mental health tools to get support for feeling low / sad / depressed, feeling stressed, and / or feeling anxious, and was much less effective in attracting people with other experiences, for example eating issues and self-harm. This study is like previous mental health and digital mental health studies in attracting a majority of these demographic groups and having gender- and racially-diverse groups being largely underrepresented and even virtually non-existent. It will be important that future studies explicitly focus on under-represented groups of users of online mental health tools, which will be important to deepen understanding of who uses such tools and why and to develop online resources that meet the specific needs of particular user groups.

Recruitment related biases. The recruitment strategy introduced the possibility of particular sources of bias. The study was primarily advertised via online sources and the questionnaire was administered online. This was appropriate given that the target population consisted of Internet users, but it might also have attracted individuals with greater levels of comfort and familiarity with using the Internet and computer devices. Additionally, as the samples were self-selected, the individuals who put themselves forward for participation may have been motivated by particular reasons. For example, people with a more extensive or positive experience with using online resources to help with a mental health problem might have felt greater motivation to participate.

Role of the conceptualisation of the research topic in creating recruitment bias. At the beginning of the recruitment process the focus of the study was informed by an understanding of online mental health tools as specific types of resources, particularly

mental health / wellbeing apps and self-help online programmes for common mental health problems.³⁸ The language of the early recruitment adverts reflected this. The researcher's understanding of online mental health tools widened after the first few interviews as these showed that the online resources people used to support their mental health were a lot more varied than originally assumed, and even included some unrelated to mental health. This led to the decision to expand what counted as an online mental health tool for the purpose of participating in the study, now including a greater variety of such tools (as explained in section 1.6 of the Introduction Chapter).

While the information documents provided to prospective participants were updated to reflect this (see Appendices B, C, and D), the specific examples of online mental health tools they included might have had the unintended effect of highlighting particular ones, namely apps and online programmes, over others that were not explicitly listed. Apps were the single most reported type of online mental health tool among the questionnaire participants, followed at some distance by online programmes. On the one hand, confidence in this finding was enhanced by its consistency with findings from earlier research. On the other hand, the questionnaire data may be skewed towards apps and online programmes if people who use online resources other than those two types were less confident about their eligibility. This may have deterred such individuals from participating or led them to limit their responses to their experience with apps and online programmes. It should also be kept in mind that when grouping up by type the online mental health tools reported by the participants, approximately 20% of these data could not be categorised.

³⁸ This was largely due to the researcher being new to this area of research. Engagement with the then dominant literature, whose focal point was the use of a restricted number of online technologies for clinical purposes, played a large role in the researcher's initial understanding of the phenomenon of using online tools to help with a mental health problem and what online tools to focus on in the study.

Self-reported data. The data for the study was self-reported and might therefore have been affected by memory bias, particularly when participants' responses related to past use of online mental health resources.

Multiple responses (questionnaire). Although a manual check of the questionnaires found that no two questionnaires were the same, it cannot be guaranteed that each participant only completed the questionnaire once. The survey was anonymous and no identifiers were collected through the survey software (e.g. IP address) nor were cookie settings activated on the survey software, a strategy that may be used to deter participants from taking the questionnaire more than once.

Temporal correspondence of variables. The finding that the majority of participants had used an online mental health tool because free of charge or because of its perceived affordability was discussed in the context of the income and occupation data from the questionnaire (section 8.3 of the Discussion chapter). This then provided the ground to claim that future studies should investigate whether unequal opportunities to access online mental health resources may arise between people with limited financial means and those who are financially more comfortable. There is a potential limit to the income and occupation data this study collected due to the fact that approximately half of the participants reported they were not using online mental health tools at the time of their participation in the questionnaire. Therefore, it cannot be assumed that the employment and income status of these participants when they took part in the questionnaire were still the same as when they had used online mental health tools. It will be important for future research to ensure greater temporal correspondence between the demographic information being collected about users of online mental health tools (e.g. employment, income, setting in which they live (urban vs rural)) and information about their usage of such tools.

Similarly, it is acknowledged that the questionnaire collected data expansively at the expense of specificity. For example, participants were asked to indicate all the issues for

which they had sought support through online mental health tools (e.g. feeling stressed, problem eating, etc.) as well as all of their reasons for deciding to use such tools (e.g. affordability, get help while on a wait-list for treatment, etc.). However this information was not collected in a way that connected one variable (issues) to the other (reasons) (for example, by explicitly asking those who use an online mental health tool for a specific issue what reasons apply). The analyses of association based on these data face a limitation as a result of this.

Positioning this study in the continuum of mental health difficulties. The study's findings also need to be considered in the context of the population the research focused on. Because there was a need to make participation open to those without a mental health diagnosis, it was left to people to identify if their mental health difficulties counted as a mental health problem. This made the target population broad, and it was expected it would range from people experiencing poor mental health without a diagnosable mental health problem to people with a diagnosable mental health problem, whether common (e.g. anxiety, depression) or enduring (e.g. psychosis).

Information about whether people had a diagnosis was not collected, but four in ten questionnaire participants self-reported using online mental health tools to seek support for feeling suicidal and one in five for self-harm, suggesting a potentially clinically relevant mental health difficulty. Additionally, between 18% - 30% of the questionnaire participants had received mental health services such as hospitalisation / inpatient care, mental health nurse visits, and day hospital / outpatient care for their mental health difficulties, indicating that their mental health difficulties had been evaluated as clinically relevant. In the interviews, most participants self-reported anxiety, depression, major depression, schizophrenia, bipolar disorder, or an eating disorder. Their narratives clearly conveyed a sense of the significant impact their mental health difficulties had had on their mental wellbeing and aspects of their lives in the past, such as struggling with these difficulties recurrently or for many years before starting to get better, and, for a few, being hospitalised or having had periods where they were unable to carry out their everyday

activities or did so with difficulty due to their mental health difficulties. The latter suggests these individuals may have had severe mental health difficulties. All interviewees described doing better at the time of the interview, but some reported that their mental health difficulties could still have an impact on their everyday living. Online mental health tools had been used in the past or at present in the context of these mental health difficulties.

Outside of these questionnaire and interview data suggesting that many people had likely had clinically relevant, and sometimes significant, mental health care needs, it is not possible to know what level of mental health difficulties the rest of the participants had experienced, especially in the questionnaire, and how many of them might have been “worried-well”. Worried-well is a contested concept (Bobevski et al., 2017; Pereira Grey et al., 2020), but according to international data approximately 16% of people that receive formal mental health care belong to this group, based on a definition on worried-well as people who receive mental health care but have neither a current mental health problem based on diagnostic criteria nor other apparent clinical indicators of needing mental health care (Bobevski et al., 2017; Bruffaerts et al., 2015). It is acknowledged that some of the data may have come from individuals belonging to this group, given that no restrictions to participation were made in terms of the severity or type of mental health difficulty being experienced. For example, the use of online mental health tools to get support for feeling stressed or for bereavement, reported in the questionnaire, may or may not have been as a result of ongoing everyday problems of living (e.g. the loss of a loved one, work or study related stress) that caused intense emotions rather than part of a diagnosable mental health problem. Given the time commitment required to participate in each of study phase, the in-person nature of the interviews, and the fact that no compensation was offered for participating, this researcher believes it is unlikely that participants faked having mental health difficulties or deliberately overstated their emotions as mental health problems. This researcher believes that the individuals who took part in this study were people who, at the very least, had experienced emotional distress or certain intense emotions that had impacted their mental wellbeing enough for them to decide to seek support for it (which the greatest majority had done via in-person services as well), but it is acknowledged that

not all may have experienced poor mental health to the level of a diagnosable mental health problem.

The above discussed limitations should be taken into account when interpreting the findings of this study and comparing them with those obtained by other studies. Despite these limitations, confidence in the significance of the study's findings is enhanced by the mixed methods design. As a mixed methods study, the present study was informed by a conceptualisation of the issues specified in the research aims as presenting both a quantitative and qualitative side and by the intent of looking at these two sides together. The goal of this study was to investigate an as yet underexplored phenomenon within the field of digital mental health in order to identify areas or particular issues of significance that future research can address to enhance knowledge and understanding of this phenomenon. The study has achieved this. The strength of utilising a mixed methods approach is evident in the study's achievement of its goal as the significance of its key findings arose from the integration of the quantitative and qualitative results. Integration enhanced the significance of key findings as patterns identified in the quantitative data provided quantitative support to key themes generated from the qualitative data, while the nuanced nature of the qualitative results complemented quantitatively identified patterns by helping to explain them, elucidate the contributing role of particular aspects, or pinpoint multiple facets. The joint interpretation of the quantitative and qualitative results enhanced the significance of the findings by highlighting different but related aspects that taken together provided a deeper and more comprehensive picture of particular issues than either data set alone.

Additionally, although the self-reported nature of the data posed a limitation due to possible recollection bias, the focus on real-life use of online mental health tools was a strength of the study. The findings have painted a complex and dynamic picture which highlights that both opportunities and challenges exist and that the meaningfulness online

mental health resources have for people need to be understood in the context of the broader help-seeking process and lived experience of people with mental health problems.

This study cannot claim to have given ‘voice’ to people with a mental health problem because it was not designed to include them as “active co-researchers in the process” such as in Participatory Action Research (MacGabhann et al., 2010, p. 15). Nonetheless, it has sought to investigate and give visibility to the needs and preferences that inform people’s decisions to use mental health resources to help with a mental health problem, and may therefore be useful to a social agenda that challenges a top-down mental health care culture.

8.10 Recommendations

Having discussed the study’s findings and considered its limitations and strengths, the recommendations for policy, practice, and research that arise from the findings are now set forth. This section concludes the chapter.

8.10.1 Policy recommendations

- This study recommends that mental health systems remain aware of the importance of personalisation in the choice of care path and adopt a holistic and pluralistic approach to providing mental health supports that takes into account people’s multiple and diverse needs, including the need for different forms of support and modes of access. This approach should also take into account that people’s needs can change over time, and that their need or preference for particular forms of support and modes of access can change accordingly. Considering the benefits people find in the flexibility and immediacy of access of online mental health tools and the opportunities for greater anonymity in help-seeking than allowed for by in-person

services, this study recommends that online technology should be leveraged not only to increase availability and accessibility of traditional mental health treatment, but also to expand and diversify available options for support and modes of access relative to traditional in-person treatments and services. Including online mental health resources within mental health systems to increase choices between alternative forms of support and modes of access may help ensure that a greater diversity of needs is met than allowed by in-person services alone. It may also help mental health systems be better resourced to meet people where they are at in their help seeking journey, as not all help-seekers desire getting help through traditional in-person pathways.

- Not everyone wishes to use online resources to support their mental health; likewise, people may wish to use online resources to help them with some aspects of their lives and offline resources to help them with other aspects, or they may desire in-person support at some stage and find online support more suitable at a different stage. A significant challenge for mental health systems is to ensure that sources of support, both online and in person, are available to people in a timely manner when they need them. Specifically, when investing in and promoting digital mental health, the study recommends that mental health systems and governments do not take for granted that all people have access to the associated technology (e.g. stable Internet connection, a well-functioning smartphone). Rather, the study recommends that addressing the conditions that can limit access to internet connection and computer devices, such as socioeconomic deprivation and distribution of internet infrastructure, is made integral to digital mental health policy. To this end, it will be important for mental health policy to operate within a framework that puts institutional responsibility firmly on the agenda, such as the recovery-oriented framework.
- Greater safety for people who use online mental health tools for mental health support is needed. Better visibility of and signposting to online mental health resources for which there is evidence of their safety and effectiveness is needed (Morrison, 2020). This study recommends that efforts should also be directed at better regulating the

digital mental health landscape and holding other stakeholders responsible, in particular providers of commercial online mental health resources. These need to be transparent about what their free and paid content include and need to offer adequately long free-trial periods (e.g. one month or longer). They also need to communicate clearly why they may collect especially sensitive personal data such as mental health data and how they handle this data. The development of ethical and quality standards and best-practice guidelines, and the protection of users' data, have all been identified as a key priority for the digital mental health field (Gaebel et al., 2020; Roland, Lawrance, et al., 2020). These should include clear regulations for developers of commercial online mental health resources to prevent the use of exploitative sales practices and ensure greater sensitivity and respect for the needs of people with mental health problems who use online mental health tools to support their mental health.

8.10.2 Practice recommendations

- The recognition of the importance of the experience-based knowledge of people with mental health problems (e.g. recovery-oriented paradigm) should be extended to include the insights into online mental health tools that people develop as they explore and research available options, actively manage the risks posed by the vastly unregulated realm of online mental health resources, and engage with such resources to support their mental health. Users of online mental health tools and their experience-based knowledge of such tools should be included in the co-production of online mental health resources and of guidelines to help people orient themselves to online mental health resources as safely as possible. Co-production of online mental health resources which includes people with mental health problems who use online mental health tools will benefit bodies hoping to integrate online mental health resources within their services and support clients who would like to use them.

Ultimately this will be of benefit to people with mental health problems who want to use or already use online mental health tools.

- This study recommends that developers of online mental health resources co-produce these tools together with people with mental health problems who use them and mental health professionals to ensure online mental health resources are both safe and reliable and informed by the needs of their users. This will be of benefit to anyone interested in using online mental health tools to help with their mental health, and in particular to those who choose to look for and use online mental health tools on their own without the guidance or involvement of a healthcare professional.
- The study also support the following recommendations for developers: ensure that online mental health resources are user-friendly, free from technical issues (e.g. glitches), and properly optimised for use on multiple devices (e.g. laptop, smartphone); include customisable features to help users achieve a better fit with their usage needs and preferences; design self-tracking functions with enough flexibility to facilitate adapting their use to changes in one's ability to engage with them.
- For mental health professionals, the study recommends acknowledging the efforts autonomously undertaken by their clients to support their mental health via online mental health resources. Mental health professionals should also listen to what their clients have to say about their experience of and reasons for using online mental health resources for mental health support. This may help clinicians better understand and connect with their clients' support needs and healing goals.

8.10.3 Research recommendations

- Future research is needed that focuses on older users of online mental health tools, particularly middle aged individuals. Research is needed to investigate the specific

support needs, preferences, and goals that motivate this population to use online mental health resources. This will aid in the development of online mental health resources that are tailored to this cohort.

- Future research is needed that focuses on non-heterosexual users of online mental health tools to investigate the particular reasons and potentially unmet needs for support that drive their use of such tools, and to aid in the development of online resources that are tailored to the needs of this population.
- Future research is needed into the unmet needs for support that people may be trying to fill by using online mental health tools while they are on a waiting list for treatment. This may help design online resources that can best support the needs of these individuals during such time. The study also recommends that particular attention should be given to users of such tools who are in this situation and experiencing the kind of intense psychological distress that can lead to feeling depressed, suicidal, or self-harming.
- There is a need for research to focus on and better understand people's use of online mental health resources as motivated by the perceived immediacy and flexibility of access of such resources. The role of immediacy and flexibility of access in people's engagement with online mental health resources was highlighted by the saliency of a reactive / responsive mode of use of such resources (e.g. to get support and relief in the moment), particularly apps and other resources accessed from a smartphone. Although a few other studies have reported a similar finding, this mode of engaging with online mental health tools has not been formally explored and deserves further attention.
- The study found not only that online mental health tools were more frequently accessed in the evening to night-time period (i.e. after work hours), but also that access at this time was significantly associated with reasons to do with the immediacy and

flexibility of access of online mental health tools, further highlighting the role of these two aspects in people's patterns of engagement with such tools. Considering the scarcity of after-hours mental health services other than Emergency Departments in Ireland and that most participants were working or in third level education, the study recommends that future research further investigates these patterns to establish whether they might be linked to unmet needs in the absence of mental health services that can accommodate seeing clients outside of traditional weekday business hours.

- Future research should investigate the reasons for people's preference as to what computer device to use to access an online mental health tool from, paying attention to the interplay between the user's needs and what features of a device are perceived to suit those needs. Additionally, research is needed to investigate whether being able to choose what type of computer device to access an online mental health tool from (e.g. having various devices at one's disposal) contributes to a better experience for users of such tools. Reliance on a single device for access, whether this is deliberate or out of lack of other options, and whether it affects opportunities to access online mental health tools, also need to be considered.

Concerning people who use (or are interested in using) digital technologies for mental health support and who rely on their smartphone for Internet use, future research should also focus on generations growing up with digital technology, such as Millennials (Stawarz et al., 2019b) and even more so younger generations (e.g. Generation Z), who have been found to be more likely than older generations to be smartphone-only Internet users (Perrin, 2021) and have a greater preference for accessing online mental health resources through a smartphone or as an app compared with other devices (Pretorius et al., 2019b) and older individuals (Smail-Crevier et al., 2019).

- Future research is needed into how a perceived overload or overabundance of technology and technology-mediated communication in one's daily life may impact

individuals' help-seeking choices, such as contribute to or reinforce a decision for in-person help-seeking. For people who are disinclined to seek support through traditional in-person pathways but may be willing to seek support online, research needs to investigate whether experiencing technology overload or concerns with technology overuse may further limit their help-seeking.

- Research is needed to explore how the marketing practices of commercial online mental health tools impact the experiences of users who engage with such tools to manage a mental health problem. This research may help inform best practice guidelines and regulations for commercial online mental health tools – for instance, highlight the need for developers and providers to consider whether their marketing practices may adversely affect users, and better align the choice of such practices with users' need for online mental health tools to offer a hospitable and undisturbed environment. These considerations may also inform criteria for the assessment of user experience in online mental health tools.
- In light of the study's findings on anonymity as a reason for using online mental health tools, and considering the Irish population's widespread perception that mental health problems are stigmatised in Irish society, it is recommended that future research on the use of online mental health resources in Ireland investigates whether and to what extent fear of exposure to stigmatisation contributes to an interest in online help-seeking as a more anonymous and private option than in-person help-seeking.
- Future research into the everyday use of online mental health tools should aim to include a broader range of experiences than the present study (i.e. both positive, negative, and mixed ones), as the predominance of one type of experience may result in particular issues being under- or over-represented in the data.
- Future research should consider employing interpretive approaches (e.g. narrative inquiry, interpretive phenomenology) to investigate the personal meaningfulness of

particular help-seeking choices and of different help-seeking choices that are made over time (e.g. anonymous online help-seeking at first followed by in-person help-seeking with services at a later stage).

CHAPTER 9 – CONCLUSION

9.1 Introduction

In-the-wild use of online mental health tools by people with a mental health problem has been underresearched within digital mental health research. The purpose of this exploratory study was to generate ideas and insights that may act as pointers for advancing research and practice in this area. Specifically, the aims of the study were to explore how adults with a self-identified mental health problem who live in the Republic of Ireland use online mental health tools for mental health support in their everyday lives, and what place technology has in this experience. The study followed a parallel mixed-methods design to generate richer, more meaningful interpretations of the research problem.

The present chapter concludes this dissertation by elucidating its contributions and offering some final thoughts.

9.2 Contributions of the study

This study makes several contributions to the literature on the use of online mental health tools by people with a mental health problem. It also makes contributions relevant to practice and policy in the area of mental health systems.

The first contribution is based on an important point of contrast between the study's findings and the literature on digital mental health tools. As discussed in the literature review, medical research on online mental health tools for people with mental health problems has for the most part been guided by the service delivery agenda of governments and statutory mental health services. The urgent need to find solutions to the unrelenting gap between the demand for and availability of mental health services and treatments,

coupled with the supposed pervasiveness of the internet and digital technology in society and people's lives, have led to an interest in harnessing online / digital technology in the hope of developing large-scale cost-effective solutions. This study's findings partially support this view but also highlight and problematise its narrow focus. The findings that online mental health tools were used because of a desire for greater anonymity than in-person services, a desire to get help without in-person contact with a healthcare professional, or as an alternative to unavailable traditional services all support the view that online mental health tools may help lower help-seeking barriers for some people. At the same time, this study makes it abundantly clear that there is greater complexity at play in people's real-life use of online mental health tools. A salient finding of the study was that people often used online mental health tools to enhance or complement traditional treatments. Traditional treatment such as in-person talking therapy remained important, but people did not rely on traditional treatment alone, rather many searched for additional things that they could do to enhance their mental wellbeing. Many people ended up combining support from diverse sources and modalities, both formal and informal, online and offline, and to satisfy their need for both ongoing and in-the-moment support. People also moved between online mental health tools and traditional treatment over the course of their help-seeking or recovery journey as their needs for support changed. These key findings of the study support the importance of and need to think holistically about the provision of support for people with a mental health problem (Ó Féich et al., 2019). This is rarely discussed within the literature on digital mental health technologies. The study's findings challenge mental health systems' reliance on single-solution treatments, which the literature on digital mental health interventions equally embraces in its search for scalable ways of disseminating evidence-based psychological treatments. Related to this, the study highlights a discrepancy between people's intentional use of online mental health tools as part of a diverse collection of help strategies and eMH literature's concern with technology (Internet, Internet-connected devices) as a solution to barriers to the availability and accessibility of psychological treatments. This is an important contribution of the study as it shows that, by itself, the literature's focus on technology as a solution to treatment barriers is restrictive. The study supports the need for both the digital mental health field

and mental health systems to reevaluate their digital mental health agenda and widen their perspective about the use of online mental health resources in mental health care, so that both in-person and online options for mental health support are integrated within the mental health ecosystem (Gaebel et al., 2020; Mohr, Riper, et al., 2017; Mohr, Weingardt, et al., 2017; Stawarz et al., 2019b).

The second contribution this study makes is by shedding light on the role that online mental health tools may play in the provision of mental health support. The findings that people use online mental health tools to complement traditional treatments, increase and diversify the sources of support at their disposal, and access support in a manner and format better suited to their needs and preferences than in-person alternatives, provided the ground to assert that online mental health tools may contribute to expanding and diversifying options for support relative to traditional in-person treatments and services. The study highlights the importance of both traditional treatments and alternatives such as online mental health tools being made available to people who seek help for a mental health problem. The study provides two key insights into this: first, those for whom traditional treatment was an important source of help often found that including additional sources of support (e.g. online mental health tools) further enhanced their well-being and overall recovery experience or even added a uniquely helpful element to it; second, as their help needs changed over time, people could desire different types of help at different moments in time, such as those who, feeling reluctant about seeking in-person treatment, found a preferable alternative in an online mental health tool and desired in-person professional support at a later stage. Overall, the findings suggest that the value of online mental health tools is linked to their key differences from traditional in-person treatments, namely their flexibility and immediacy of access and the opportunity to access support that does not involve a mental health professional or that involves a more anonymous form of interaction with one than in-person services. The study makes a contribution by suggesting that expanding mental health systems to include forms of support and modes of access that move away from those of traditional in-person treatments may help mental health systems better meet people's diverse and changing needs for support. The flexibility and

immediacy of access of online mental health tools are better suited to specific care needs that are not easily met by traditional in-person services, such as the desire to access support in one's own time and at one's own pace and the need for quickly accessible support for in-the-moment relief from stress or anxiety. Offering both online mental health tools and traditional in-person treatments may help mental health systems accommodate greater diversity of care needs than traditional in-person services alone. Likewise, having options for support on offer that do not involve a mental health professional or that involve a more anonymous form of interaction than in in-person treatment may help mental health systems better meet people where they are at in their help seeking journey by supporting greater inclusivity of those who desire help but feel doubtful about seeking it through traditional in-person pathways.

Another important finding of the study was that the expansion of existing sources of support facilitated by online mental health tools could be seen as supporting greater autonomy for people seeking support compared with lack of treatment choices within traditional mental health services. Autonomous choice was a significant characteristic of people's engagement with online mental health tools. Another finding that stood out was the role of learning in the experience of using online mental health tools. The desire to understand one's distress better and learn how to manage it was a salient reason for engaging with online mental health tools. The study aligns with previous studies in suggesting that online mental health tools could be regarded as providing opportunities for people to exercise their autonomy in help-seeking and develop personal resourcefulness, two key components of personal recovery according to the recovery-oriented model. The third contribution this study makes is by drawing on the recovery-oriented framework to contextualise the opportunities for autonomous choice and self-learning provided by online mental health tools within a socially-oriented critical perspective. Critical appraisals of this kind are lacking in the medical literature on digital mental health. There is a need for them in order to unpack and counteract the individualist concepts of health that often inform the development and promotion of digital health / mental health tools and that lack awareness of the broader contextual determinants of health and healthcare access

(Lupton, 2013, 2016). The recovery-oriented perspective acknowledges the role of the person's autonomy, active choice, and identification and development of personal strengths and capacities in their own recovery, while also acknowledging the role of the wider interpersonal, social, and economic context in supporting or impeding those personal processes. With respect to access to mental health support, adopting a critical, recovery-oriented perspective within a technologically expanded mental health ecosystem highlights the responsibility of public bodies to support autonomy in help-seeking and recovery by providing choices between alternative sources of support and modes of accessing them, ensuring equality of access to needed or desired mental health supports, both traditional and online, and addressing factors that may impede this, lest opportunities for access become dependent on individual means and unequal opportunities are further exacerbated.

Linked to the above, the fourth contribution this study makes is to highlight that as people desire access to both traditional and online sources of support, and as they move between the two, new challenges and complexities emerge for mental health systems in ensuring access to both forms of mental health support, once again in contrast to the literature's main interest in digital mental health as a way to streamline the accessibility of mental health treatment. The study's findings point out two crucial challenges that the digital expansion of mental health supports face governments and mental health systems with: the need to address the conditions that affect opportunities to access online mental health tools, such as economic barriers, differences in access to the necessary technology, and their causes (e.g. uneven distribution of technical infrastructures); and the need to ensure timely access to both traditional in-person supports and online alternatives so that continuity of care is ensured when an individual wishes to change from one mode of support to the other, particularly when shifting from online to traditional in-person support.

Another significant implication of this study is to show that there is a clear opportunity for partnership, i.e. co-production, between people with mental health problems who use

online mental health tools and mental health professionals / services in the development of online mental health resources. The fifth contribution this study makes relates to the knowledge that users of online mental health tools and mental health professionals can bring to the co-production of such tools. Co-production in mental health care is an approach through which “service users, family members and service providers become active participants and equal partners at all levels within service design and delivery at an organisational level and also at an individual level” (HSE Mental Health Services, 2018, p. 8). Co-production recognises and values the different forms of knowledge and expertise (e.g. by experience, by profession) that each stakeholder group brings to the table. At an organisational level, co-production is recognised within Irish mental health services as “a valuable element of quality and service improvement” (*ibid.*, p. 7). Co-production across every stage of the creation and implementation of services, both traditional and online, ensures that services are designed and created for the people who will use them (Mohr, Weingardt, et al., 2017; Pretorius et al., 2020). Co-production of online mental health tools has been limited so far (Gaebel et al., 2020). This study provides insight into the knowledge that people with lived experience of a mental health problem who use online mental health tools can bring to the co-production of such tools. The study’s findings highlight the role of people’s direct experience with online mental health tools in how they developed this knowledge. The findings paint a picture of users of online mental health tools as a discerning audience: they actively research, screen and try out online mental health tools in order to find a suitable one; develop clear views about what makes online mental health tools helpful to them as well as their limits; are alert to the risks posed by unreliable online mental health tools, and develop strategies to avoid them and identify trustworthy ones; have strong views about acceptable and unacceptable sales and paywall practices in paid online mental health tools; demand that these practices are informed by respect for the sensitivities of users with a mental health problem; and have concerns about the protection of personal data (although this area of concern came up a lot less than others). In addition, the study’s findings show that users of online mental health tools trust that online mental health content provided or endorsed by formal sources (e.g. health / mental health organisations) is safe and reliable. This was a salient strategy people relied upon to identify

reliable online mental health resources and avoid unsafe ones. The trustworthiness and safety of online mental health tools are key concerns to their users. The study's findings point to this as an important and potentially fruitful area of dialogue and collaboration between users of online mental health tools and mental health professionals in the co-production of such tools.

In addition to the contributions presented so far, the study makes a set of contributions relating to the broader technological context within which people's engagement with online mental health tools takes place. Device preference in the use of online mental health tools is one component of this context that was highlighted by the findings. The sixth contribution made by this study is to expand our limited knowledge of device preferences among users of online mental health tools and the reasons for such preferences. In addition to corroborating existing knowledge of the predominance of smartphone preference as point of access due to its easy portability and in-the-moment accessibility, the study's findings provide new insight into variations in device preference. A novel feature of these findings was that people who had both a smartphone and a laptop / desktop computer at their disposal could switch fluidly between the two devices in order to engage with online mental health tools, choosing the device that allowed them to most comfortably engage with a particular online mental health tool or associated activity (e.g. guided meditation practice versus extensive typing). An important implication of this finding is the question it raises about whether users who have a choice of devices from which to access their online mental health tools are facilitated in their choice of, access to and engagement with such tools compared with users who rely on a single type of device to go online, particularly when this happens out of necessity rather than preference.

From a technology-related point of view, unencumbered access to the Internet occurs within a technological milieu where multiple factors need to be working together simultaneously: in the first place, having access to stable Internet connection and a fit for purpose device, but also, for example, having an adequately large data allowance as part of one's Internet subscription plan, or having options to re-charge one's device when

needed. The present study found that most participants enjoyed good Internet connection and had access to an adequate computer device and data plan, resulting in no or minimal disruption to their use of online mental health tools, but some participants had their use of such tools regularly hindered by poor Internet or mobile network signal, or, although less often, events such as running out of their Internet data allowance, limited options to recharge the battery of their computer device, and limited options to access the Internet or a computer device in the first place. Other events that potentially hindered engaging with an online mental health tool included usability problems (e.g. features of an online mental health tool malfunctioning) and being distracted by app notifications during use. Attention to the technological milieu that makes it possible for people to access and use online mental health tools, and how it impacts their access and use of such tools, has been sparse in the literature on digital mental health, but so far points to events such as those reported above as hindering or discouraging the use of online mental health tools. In addition to corroborating this, this study's findings offer evidence for the need to not take for granted that all people have access to well-functioning technology. This further problematises the promissory narrative of technology as a solution to service availability issues and provides the basis for the seventh contribution of the study, making a case that digital mental health research and policy should attend to what technology people have access to, lest technology becomes an additional source of unequal opportunities for help seekers. Linked to this, socioeconomic barriers and facilitators to accessing technology and online mental health tools need to be looked at. This has yet to be systematically addressed (Gaebel et al., 2020). The present study highlights the need for this. It is noteworthy that most participants reported living at or below the annual living wage, and that this was largely accounted for by third level students, people working part-time, people being unemployed / job seekers, and people living on a disability / illness pension, all occupation groups that are more likely to face financial stressors or hardship. This raised the question of whether limited financial means might have contributed to the widespread uptake of free and low cost online mental health resources.

The last aspect of the broader technological context the study draws attention to, and representing the eighth contribution, is the novel finding that a perceived overabundance of technology and technology-mediated communication in one's daily life can reinforce appreciation for in-person support and contribute to a preference for in-person mental health support over support accessed online. The study shows that perceived daily overuse of technology is a relevant element of the broader technological context within which people's engagement with online mental health tools takes place, yet this phenomenon and its impact on the choice of help-seeking pathway are rarely discussed within the digital mental health literature.

The ninth contribution of the study arises from the survey results and relates to users of online mental health tools. Like other studies employing users of online mental health tools self-selected from the general adult population, this study attracted a primarily female, white, well educated, urban, heterosexual, and young (18 – 34 years old) sample. The study differs from those other studies in that it attracted higher proportions of two underrepresented demographic groups, non-heterosexual and middle to older aged individuals (45 years old or older). Both groups have been given limited attention in the literature on online mental health tools. When considered in the context of the existing literature, the study's survey results call attention to these two groups. In particular, for non-heterosexual users this was further supported by points of contrast with heterosexual users, namely the greater likelihood of the former to decide to use online mental health tools to get help while on a waiting list for treatment or without needing to leave the house. In light of the fact that non-heterosexual people's needs for mental health support differ from those of heterosexual people due to the former group facing additional challenges to both their mental health and accessing mental health treatment, the contribution made by this study's findings is to highlight the importance of non-heterosexual people as an audience to online mental health resources and the need to further explore the particular needs and reasons that may drive their engagement with online mental health tools.

The last contribution made by this study stems from the finding that the experience of increased distress was a salient reason for seeking out online mental health tools. This emphasises the role played by increased emotional distress in the use of online mental health tools. This finding aligns with existing knowledge that the use of online mental health resources is higher among people with greater distress. The saliency of the role of increased stress in turning to online mental health resources was further reinforced by the study's finding that people who were seeking help for feeling suicidal or for self-harm had a higher incidence of both individuals who used online mental health tools out of desperation for help and individuals who used such tools to get support while on a waiting list for treatment. Additionally, this study found that some people, particularly those experiencing psychological pain such as feeling suicidal or feeling low / sad / depressed, seek online mental health tools for anonymity reasons, such as due to a desire for greater anonymity than offered by traditional (in-person) help-seeking pathways. Taken together, these findings paint a picture of people with intense psychological pain facing multiple challenges to seeking or getting help. These findings make a contribution by drawing attention to this particular group of users of online mental health tools and the unmet needs for support that may contribute to their decision to seek help online.

9.5 Final thoughts

In conclusion, this study makes a case for online mental health tools as a way for the mental health system in Ireland to expand and diversify available options for support beyond traditional in-person treatment / services, so as to more effectively accommodate people's diverse and changing support needs, better support their autonomy in helping their mental health and choosing between types of support and modes of access, and be inclusive of those whose help-seeking needs and preferences are better met by non-in-person or anonymous modalities. This will also bring new challenges and complexities to the table that have significant implications for digital mental health policy and practice. It will be important to ensure the trustworthiness of online mental health tools and demanding

greater accountability on the part of the creators and promoters of commercial online mental health tools need to be high on the digital mental health agenda. Additionally, with people moving between traditional in-person treatments and online mental health resources, it is crucial that barriers to both forms of support are addressed by mental health systems and policy in order to ensure continuity of care when people move from one form to the other. Specifically for online mental health resources, there is a whole technological milieu that makes access to them possible. The extent to which individuals can or cannot afford the technology needed to access online mental health resources will affect the extent to which they will be included or excluded from benefiting from the expansion and diversification of mental health supports to which online mental health resources can contribute.

Finally, this study has focused on online mental health tools and supports their potential to help expand and diversify available options for support relative to traditional in-person mental health services and help-seeking pathways. However, it does not mean to imply that online mental health tools are the only way to achieve this nor that their implementation should be given priority over other known ways to expand and diversify available sources of support. These include, for instance, alternative therapeutic services (e.g. art and music therapy), recreational activities (e.g. outdoor / physical activities), peer support services, Recovery Colleges, and other non-statutory community groups that provide a range of supports for people with mental health problems (Ó Féich et al., 2019). The helpfulness of these psychosocially oriented services and activities is established but their availability in the community can be limited (*ibid.*). While funding is being attracted by continually rising trends in digital mental health research (Timakum et al., 2022) and visions of digitalised health services as the future (Department of Health, 2024; European Commission, 2012), adequate research and funding should also be allocated to those other types of services and supports. Ultimately, the challenge for mental health systems is to ensure a pluralistic ecosystem of mental health supports where individuals have access to a range of treatments and additional supports, with both in-person options and alternative

modes of access such as online, and where people can access the sources of support they need when they need them.

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Appendix A – Ethical approval letter

Ollscoil Chathair Bhaile Átha Cliath
Dublin City University



Ms Manuela Ascari

School of Nursing and Human Sciences

19th May 2017

REC Reference: DCUREC/2017/073

Proposal Title: An exploration of the utilisation of online mental health self-help programmes and associated technology by people with mental health problems in their everyday lives: A mixed-methods study

Applicant(s): Ms Manuela Ascari, Dr Mary Farrelly & Dr Liam MacGabhann

Dear Manuela,

Further to expedited review, the DCU Research Ethics Committee approves this research proposal.

Materials used to recruit participants should note that ethical approval for this project has been obtained from the Dublin City University Research Ethics Committee.

Should substantial modifications to the research protocol be required at a later stage, a further amendment submission should be made to the REC.

Yours sincerely,


Dr Dónal O’Gorman
Chairperson
DCU Research Ethics Committee



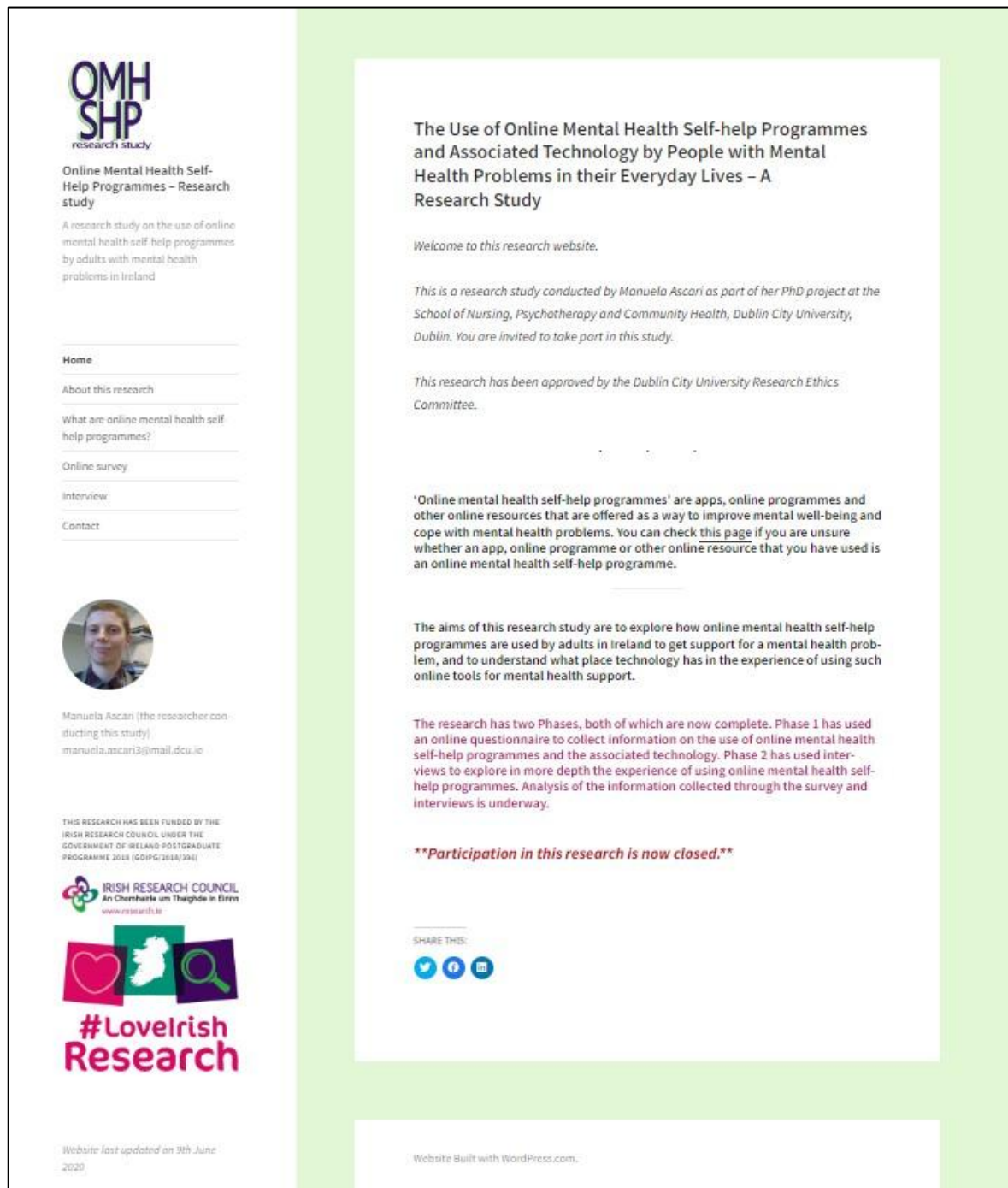
Taighde & Nuálaíocht Tacaíocht
Ollscoil Chathair Bhaile Átha Cliath,
Baile Átha Cliath, Éire

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E research@dcu.ie
www.dcu.ie

Appendix B – Study website

Figure 17 - Screenshot of study website homepage



The study website is accessible at this link <https://omhshp.wordpress.com/>

Appendix C – Research flyers

Figure 18 - Example of recruitment flyer for online questionnaire

Example of questionnaire recruitment flyer with research logo (OMHSHP research study), QR code, and #LoveIrishREsearch logo acknowledging receipt of research funding from the Irish Research Council. The website link on the digital copy of the flyer was interactive.



The flyer has a green background with a yellow border. At the top left is the OMHSHP research study logo. To its right are two speech bubbles, one green with a question mark and one yellow with three dots. The main text is in bold black font, asking if the respondent is 18+ and has used a mental health app or online programme. Below this, it says 'Contribute to research on the use of Online Mental Health Self-Help Programmes in Ireland'. A blue rounded rectangle contains the text 'Access the 20-min online survey' and the URL 'https://omhshp-research-study.com'. Below this, it says 'Info at the same link'. At the bottom left is a QR code. At the bottom right is the #LoveIrishResearch logo. At the very bottom, contact information for Manuela Ascari is provided.

**OMH
SHP**
research study

Are you age 18+?

**Have you used a
mental health app or online
programme to get help for
a mental health problem?**

Contribute to research on the use of
Online Mental Health Self-Help
Programmes in Ireland

Access the 20-min online survey
<https://omhshp-research-study.com>

Info at the same link





Contact:
Manuela Ascari
manuela.ascari3@mail.dcu.ie | +353 1 700 8926
School of Nursing and Human Sciences, Dublin City University

Figure 19 - Example of interview recruitment flyer

The flyer is a vertical rectangle with a blue background. A dark blue speech bubble shape is centered on the page, containing the main text. The text is in white and yellow. At the bottom of the speech bubble, there is a logo and a URL. Below the speech bubble, there is a small logo and a URL.

Online Mental Health Self-Help Programmes -
Research study

PARTICIPANTS NEEDED

Are you aged 18+?
Living in Ireland?
Have you used apps, online programmes or other
online resources to get support for a mental health
problem?

We would like to hear about your experience.
This involves taking part in a confidential interview of
about 1 hour, in person or by Skype phone call.

To find out more, please visit
<https://omhshp-research-study.com>
or email us at manuela.ascari3@mail.dcu.ie

*This is a research study conducted by Manuela Ascari as part of a PhD
project at the School of Nursing, Psychotherapy & Community Health at
Dublin City University.*

**OMH
SHP**
research study

<https://omhshp-research-study.com>

Appendix D – Phase 1 recruitment channels

Examples of recruitment ads used on social media

Figure 20 - Twitter recruitment ad

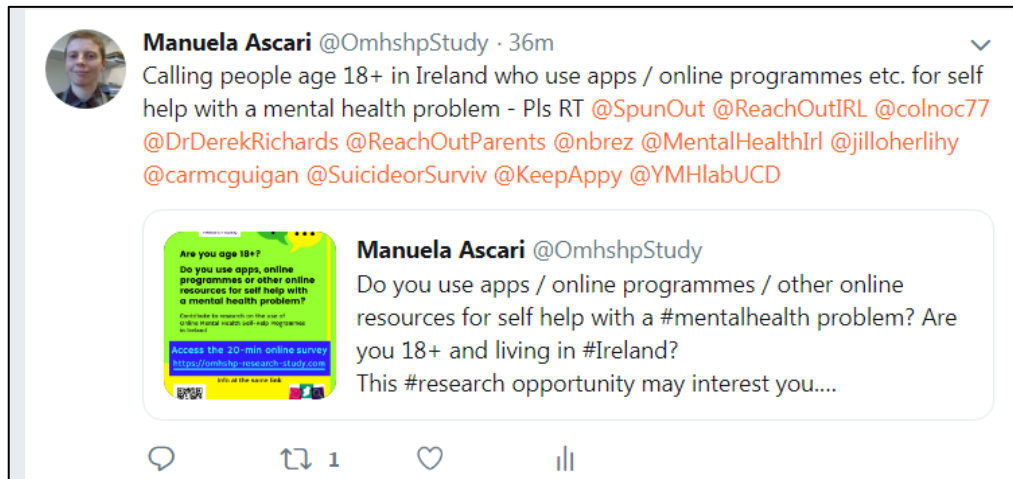


Figure 21 - Twitter recruitment ad



Figure 22 - Twitter recruitment ad

Smartphone screenshot

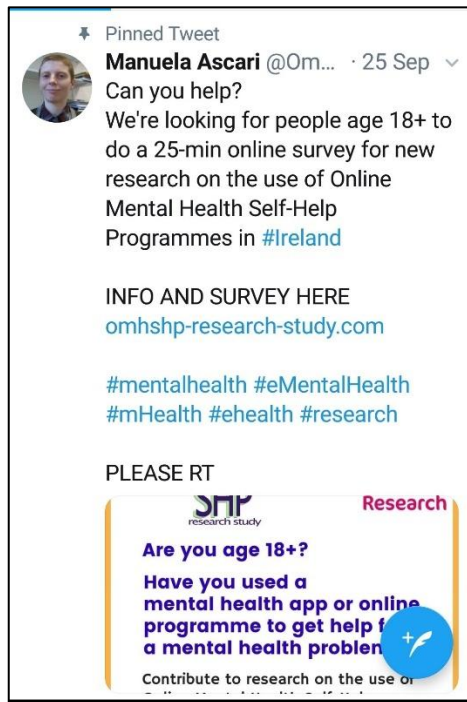


Figure 23 - Facebook recruitment ad

View of recruitment ad from the researcher's Facebook page



Figure 24 - Facebook recruitment ad

 **Manuela Ascari**
Just now · 🌐 · ▼

Can you help? We are looking for people to do a 25-min online survey for research on the use of Online Mental Health Self-Help Programmes in #Ireland. Survey link <https://omhshp-research-study.com/> More info in the poster below.

**CONTRIBUTE TO RESEARCH THAT
WILL HELP UNDERSTAND THE
USE AND VALUE OF ONLINE
MENTAL HEALTH SELF-HELP
PROGRAMMES FOR PEOPLE WITH
MENTAL HEALTH PROBLEMS**

- ✓ Are you aged 18 or older?
- ✓ Do you currently live in the Republic of Ireland?
- ✓ Do you identify yourself as having / having had a mental health problem (a clinical diagnosis is not needed)?
- ✓ Have you used a website-based or app-based self-help programme to improve your mental well-being and cope with a mental health problem?

YOUR CONTRIBUTION IS NEEDED!

Complete a 20-25 minute online survey about your use of online mental health self-help programmes.

Follow the link or scan the QR code for more details and to access the survey:

<https://omhshp-research-study.com/>

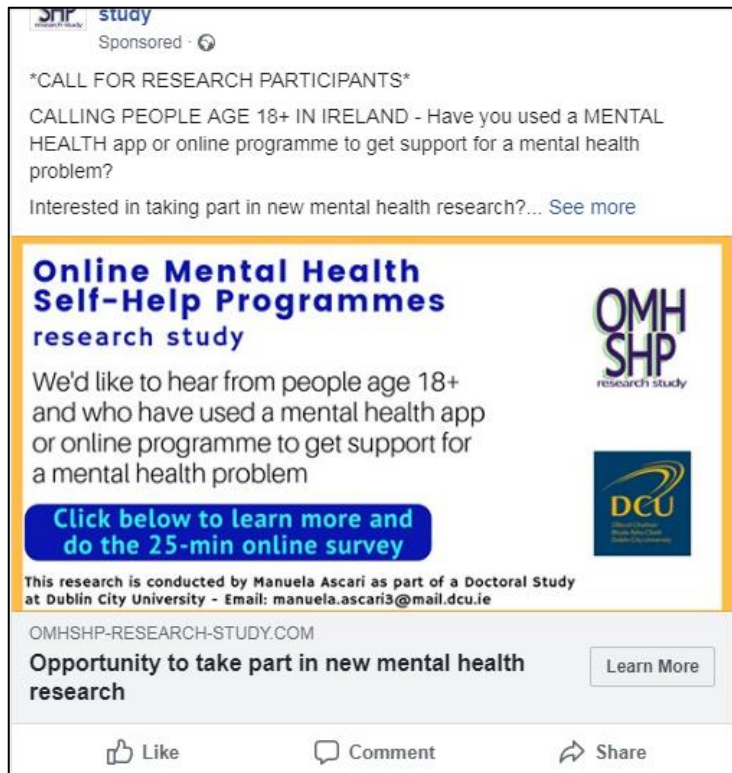
Would you like to share more about your experience with online mental health self-help programmes? You can also take part in an interview with the researcher. Details are available at the above link.

Facebook Ad Campaign - performance and redesign of the Ad Campaign

The Facebook Ad Campaign ran for 11 days.

The Ad Campaign initially looked like this:

Figure 25 - Facebook Ad Campaign

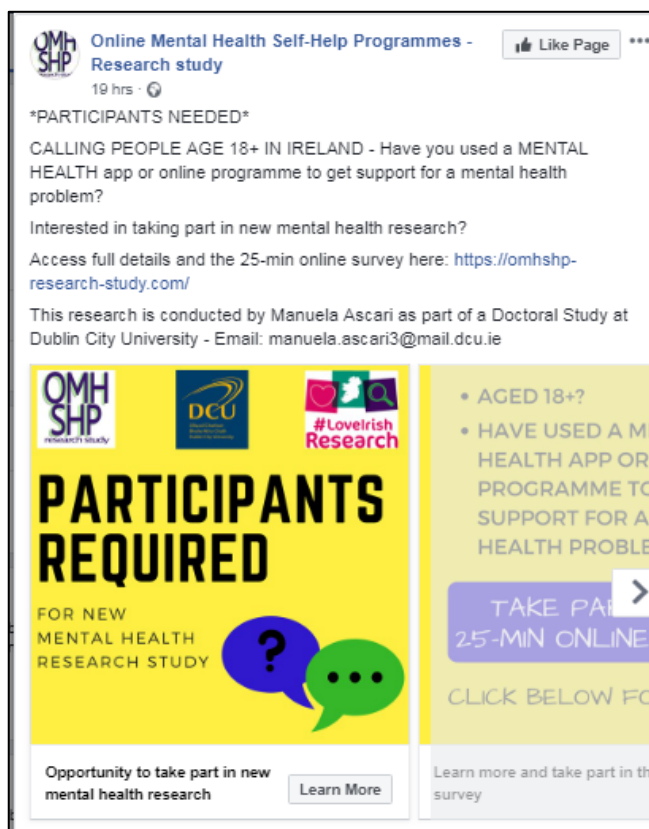


Facebook generates data that allows a user to monitor the performance of an Ad Campaign. Five and a half days after its launch, the performance data showed that the Ad had appeared on the News Feed of over 34,000 individual Facebook users, but had only been clicked on 31 times and resulted in no survey responses. The performance data also showed that the Ad had appeared over 33,000 times in Mobile News Feed and less than 1,000 times in Desktop News Feed. In other words, when the Ad appeared in people's news feed on Facebook, almost all were accessing Facebook from a mobile device such as

Smartphone or tablet (this remained unchanged throughout the entire Ad Campaign life).³⁹ As a result of this, the image for the Ad Campaign was completely redesigned to make it stand out more and better suit it to Smartphone and tablet consumption (e.g. bold colours and less text). The redesigned Ad Campaign ran for five and a half more days and had a higher rate of interaction than the original Ad Campaign, but once again resulted in no new complete questionnaire responses.

The redesigned Ad Campaign looked as follows:

Figure 26 - Redesigned Facebook Ad Campaign



³⁹ Facebook Ads appear in desktop News Feed for people accessing the Facebook website on their laptops or desktop computers, and in the mobile News Feed for people using the Facebook app on mobile devices or accessing the Facebook website through a mobile browser (<https://en-gb.facebook.com/business/help/407108559393196>).

The table below offers a comparison of the Ad Campaign performance before and after being redesigning. Link clicks, click-through rates, and all clicks data may suggest that the redesigned Campaign performed better. However, as it consisted of two images, each of which could be clicked on, it cannot be excluded that this contributed to the higher number of link clicks, all clicks, and click-through rates.

Table 30 - Performance data of the Facebook Ad Campaign

	Duration	Impressions ¹	Reach ²	Link clicks ³	Click-through rate (link clicks) ⁴	All clicks ⁵	Click-through rate (all clicks) ⁶
Original Ad	19 th -24 th September	35,337	35,337	31	0.09%	91	0.26%
Redesigned Ad	24 th -29 th September	31,272	31,079	38	0.12%	119	0.38%

Organisations and Facebook groups that were contacted as part of the recruitment strategy

Search strategy for the Facebook groups and pages

The strategy to recruit from Facebook groups and pages is based on Valdez et al. (2014) who tested this strategy to recruit Filipino-Americans for an online survey on the perception and use of consumer health information technology in this ethnic group. The first step was to conduct a keyword search on Facebook to identify groups and pages through which Ireland-based adults using online mental health tools for mental health support may be reached and hear of the study. The keywords included 'mental health Ireland', 'depression Ireland', 'anxiety Ireland', 'stress reduction Ireland', 'meditation Ireland', 'mental health self-help Ireland', 'mental health self-help online'. Groups and pages were excluded if they appeared to be inactive (0 posts in the last 30 days), were based outside of Ireland, and if there was no clear information that linked the group or

page to Ireland. The second step was to contact the administrators of the identified groups and pages so that the researcher could introduce herself and her research, and request permission to post the recruitment notice on the group or page.

Table 31 - Organisations and groups that agreed to disseminate the online questionnaire recruitment ad

ORGANISATION / GROUP NAME	DISSEMINATION CHANNEL
Aware	Website Facebook Twitter
Bodywhys	website online newsletter Facebook Twitter
Critical Voices Network Ireland	Facebook
DCU Age Friendly University	Emails
DCU Faculty of Science and Health – postgraduate mailing list	Emails
DCU Student Counselling Service	Flyers
DCU School of Applied Language and Intercultural Studies	Emails
DCU School of Law and Government	Twitter
DCU School of Mechanical and Manufacturing Engineering	Emails
DCU School of Nursing and Human Sciences	Emails undergraduate courses Visits to undergrad and postgrad classes
DCU Postgrad Group	Facebook
Dual Diagnosis Ireland	Facebook Twitter

Dublin North, North East Recovery College	Emails
Galway County Council Healthy Galway Programme	Twitter
Hearing Voices Network Ireland	Facebook
Men's Health Forum in Ireland (MHFI)	Website Facebook (MHFI Page + Men's Health Week in Ireland Page) Twitter online newsletter
Mental Health Hour	Twitter
My Mind Centre	Twitter
Psychological Society of Ireland Early Graduate Group	Twitter
ReachOut Ireland	Twitter
SpunOut	website Facebook Twitter
Suicide or Survive	Twitter
Support and health groups on Facebook (gave permission to post the recruitment notice on their page / group or had a public page): Anxiety & Depression Support Ireland Holistic Health Ireland and UK Ireland Health & Wellbeing Events Mental Health Support Group Ireland Mental Health & Wellbeing Summit Mental Illness Is Real. Suicide Should not be an option.. Padraig O'Morain Mindfulness Recovery Method for Anxiety, Depression, Bipolar, OCD and Panic	Facebook

DIT Counselling Service	Twitter
UCD School of Nursing, Midwifery and Health Systems	Twitter
UL Department of Physical Education and Sport Sciences	Twitter Facebook
Walk in My Shoes	Twitter

Organisations and groups that were asked to contribute to disseminating the recruitment notice for the online survey, but declined or did not answer:

Grow (5 regional branches) (one declined, no response from the other branches)

Helplink Support Services (declined)

Jigsaw (declined)

Turn2Me (declined)

Movember Foundation Ireland (no response)

NUIG Student Counselling Service (no response)

Shine (no response)

National Youth Council of Ireland (NYCI) (no response)

Step Out Ireland (no response)

TCD Student Counselling Services (initially responded, no follow up)

AIT Department of Hospitality, Tourism & Leisure Studies (no response)

AIT Department of Accounting & Business Computing (error message)

AIT Department of Business & Management (declined, advised alternative contact which I didn't try)

AIT Department of Mechanical / Polymer Engineering (no response)

AIT Department of Electronics & Informatics (no response)

AIT Department of Civil, Construction & Mineral (no response)

AIT Department of Nursing & Healthcare (no response)

AIT Department of Sport & Health Sciences (no response)

AIT Department of Life & Physical Sciences (no response)
 AIT Department of Social Science & Design (declined, advised alternative contact which I didn't try)
 AIT Department of Lifelong Learning (no response)
 DCU Fiontar (no response)
 DCU School of Arts Education (no response)
 DCU School of Human Development (declined)
 DCU School of Inclusive and Special Education (no response)
 DCU School of Language, Literacy & Early Childhood Education (no response)
 DCU School of Policy and Practice (no response)
 DCU School of STEM Education, Innovation and Global Studies (no response)
 DCU School of Physical Sciences (no response)
 DCU Business School (no response)
 DIT School of Creative Arts (no response)
 DIT School of Languages, Law and Social Sciences (no response)
 DIT School of Culinary Arts and Food technology (no response)
 DIT School of Media (no response)
 DIT School of Hospitality Management and Tourism (no response)
 DIT Conservatory and Music and Drama (no response)
 Galway-Mayo Institute of Technology - Galway International Hotel School (no response)
 Galway-Mayo Institute of Technology - School of Design and Creative Arts (no response)
 Limerick Institute of Technology - School of Applied Science, Engineering and Technology (no response)
 Mallow College of Further Education (no response from any of the below)

- Animal care
- Applied science courses
- Business and administration courses
- Childcare
- Carpentry and joinery (apprenticeship)
- Education and welfare courses

Hair, beauty and complementary
 Sports studies
 Information technology
 Security studies
 NUIG School of Psychology (no response)
 NUIG School of Medicine (no response)
 NUIG School of Nursing and Midwifery (no response)
 NUIG School of Business and Economics (no response)
 NUIG School of Law (no response)
 NUIG School of Civil Engineering (no response)
 NUIG School of Energy Systems Engineering (no response)
 NUIG School of Information Technology (no response)
 NUIG School of Mechanical Engineering (no response)
 NUIM Department of Ancient Classics (no response)
 NUIM Department of English (no response)
 NUIM Department of History (no response)
 NUIM Department of Media Studies (no response)
 NUIM Department of Music (no response)
 NUIM Department of Philosophy (no response)
 NUIM Department of Chinese (no response)
 NUIM Department of French Studies (no response)
 NUIM Department of Spanish and Latin American Studies (no response)
 NUIM Department of Adult and Community Education (no response)
 NUIM Department of Anthropology (no response)
 NUIM Department of Applied Social Studies (no response)
 NUIM Department of Design Innovation (no response)
 NUIM Department of Education (no response)
 NUIM Department of Primary and Early Childhood Education (no response)
 NUIM Department of Geography (no response)
 NUIM Department of International Development (no response)

NUIM Department of Law (no response)
 NUIM Department of School of business (no response)
 NUIM Department of Sociology (no response)
 NUIM Department of Biology (no response)
 NUIM Department of Chemistry (no response)
 NUIM Department of Computer Science (no response)
 NUIM Department of Electronic engineering (no response)
 NUIM Department of Experimental Physics (no response)
 NUIM Department of Mathematics and Statistics (no response)
 NUIM Department of Psychology (no response)
 TCD Faculty of Arts, Humanities and Social Sciences (no response)
 TCD Faculty of Engineering, Mathematics and Science (no response)
 TCD Faculty of Health Sciences (no response)
 UL Department of History (no response)
 UL Irish World Academy of Music and Dance (no response)
 UL School of Law (no response)
 UL School of Modern Languages and Applied Linguistics (no response)
 UL Department of Nursing and Midwifery (no response)
 UL Physical Education and Sport Sciences (no response)
 UL School of Allied Health (no response)
 UL Department of Electronic and Computer Engineering (no response)
 UL School of Design (no response)

Facebook groups and pages:

mental health parent support. (group)
 Irish Volunteers Mental Health, Suicide and Cancer Support (group)
 Chronic Pain, Fibromyalgia, M.e, Mental Health, Forum UK & IRELAND ONLY.
 (group)
 LGBTQT Support Group For Mental Health (group)
 Anxiety and depression support group for the UK & Ireland (group)
 Anxiety And Depression Support Group UK and Ireland GB (group)

Social Anxiety & Depression – Ireland (group)
Anxiety And Depression Support UK And Ireland (group)
Anxiety & Depression Support UK & Ireland (group)
Mental Health & Wellness Longford / Westmeath (page)
The Beautifully Broken Project (page)
Anxiety support Ireland (page)
Social Anxiety Ireland (page)

Appendix E – Survey instruments consulted to develop the online questionnaire

Survey instruments:

Supporting LGBT Lives (Mayock et al., 2009)

2016 Irish Census (CSO, 2017a, 2017b)

Cultures of the Internet: The Internet in Britain (Dutton et al., 2013)

Adults' Media Use and Attitudes (Ofcom, 2016)

Who's Not Online and Why (Zickuhr, 2013)

U.S. Smartphone Use in 2015 (Pew Research Center, 2015)

Information Society Statistics 2016 (CSO, 2016a)

Structured interview instrument:

Hear my voice: The experience of discrimination of people with mental health problems in Ireland (Mac Gabhann et al., 2010)

Appendix F – Online questionnaire

'The Use of Online Mental Health Self-Help Programmes and Associated Technology by People with Mental Health Problems in their Everyday Lives'

Principal Investigator: *Manuela Ascari, School of Nursing and Human Sciences, Dublin City University*

Email: manuela.ascari3@mail.dcu.ie

Phone: 01-7008926

Thank you for your interest in this research study.

Please read the following instructions before proceeding.

- This survey will take approximately 15-20 minutes to complete.
- To answer the questions select your answer(s) from the response categories provided. Some questions include an 'Other - please specify' option which allows you to write your own answer if you don't see a response category that describes your personal experience or circumstances.
- You can move back through the survey by using the 'Back' button at the bottom of each page.
- You can withdraw your participation by simply closing the survey web page, at any point up until the moment before submitting your survey. You will not be able to withdraw after you have submitted the survey because of its anonymity (it won't be possible to know which survey is yours).

Please answer the Consent Questions below to proceed to the survey. If you do not wish to proceed, simply close this web page.

Consent questions

Please indicate 'Yes' or 'No' in response to the following statements:

	Yes	No
1. I am 18 years or older	☐	☐
2. I currently live in the Republic of Ireland	☐	☐
3. I identify myself as having / having had a mental health problem (a clinical diagnosis is not required)	☐	☐
4. I have used an online mental health self-help programme to get support for a mental health problem	☐	☐
5. I have read the Survey Information Sheet and understand the information provided	☐	☐
6. I have had an opportunity to ask questions about this study	☐	☐
7. I understand that my participation is entirely voluntary	☐	☐
8. I am aware that the information in my survey will be treated confidentially unless disclosure is required by law	☐	☐
9. I am aware that I can withdraw at any point up until the moment before submitting the survey	☐	☐
10. I consent to participate in this research survey	☐	☐

First, some questions about you.

Q01. What age are you?

[participant selects age]

Q02. Which of the following best describes your gender?

- ☐ Female
- ☐ Male
- ☐ Other gender identity - please specify:

Q03. Which of the following best describes your sexual orientation?

- ☐ Bisexual
- ☐ Gay / Homosexual
- ☐ Lesbian
- ☐ Straight / Heterosexual
- ☐ Other - please specify:

Q04. What is the highest level of education that you have completed (or equivalent)?

- ☐ Primary school
- ☐ Junior certificate
- ☐ Leaving certificate
- ☐ Diploma or certificate (post leaving certificate)
- ☐ Bachelors degree
- ☐ Postgraduate degree
- ☐ Doctoral degree
- ☐ Other - please specify:

Q05. Which of the following best describes your current employment status?

- ☐ Employed full time
- ☐ Employed part-time
- ☐ Self-employed
- ☐ Carer for a family member
- ☐ Looking after family / home
- ☐ On long-term sickness / disability benefit
- ☐ Retired
- ☐ Unemployed / Job seeker
- ☐ Student or in training (e.g. apprentice, internship)
- ☐ Unable to access paid work because of asylum seeker status
- ☐ Other - please specify:

Q06. What is your current relationship status?

- ☐ Single, never married or in a civil partnership
- ☐ In a relationship (not cohabitating)
- ☐ Married / in a civil partnership / cohabitating
- ☐ Separated or divorced from spouse / civil partner
- ☐ Widowed / surviving civil partner
- ☐ Other - please specify:

Q07. Which of the following best describes your current living situation?

- ☐ Private rental, room
- ☐ Private rental, house / apartment
- ☐ Own house / apartment
- ☐ Local authority housing
- ☐ Living with parents
- ☐ Group home or hostel
- ☐ Out of home / homeless / in emergency accommodation
- ☐ Direct Provision accommodation
- ☐ Other - please specify:

Q08. Who do you live with? Select all that apply.

- ☐ Alone (with children)
 - ☐ Alone (without children)
 - ☐ With partner / spouse (with children)
 - ☐ With partner / spouse (without children)
 - ☐ With parent(s)
 - ☐ With family member(s)
 - ☐ With friend(s) or housemates
 - ☐ With others in a group home / hostel
 - ☐ Other - please specify:
-

Q09. In what County do you live most of the time?

- ☐ Carlow
- ☐ Cavan
- ☐ Clare
- ☐ Cork
- ☐ Donegal
- ☐ Dublin
- ☐ Galway
- ☐ Kerry
- ☐ Kildare
- ☐ Kilkenny
- ☐ Laois
- ☐ Leitrim
- ☐ Limerick
- ☐ Longford
- ☐ Louth
- ☐ Mayo
- ☐ Meath
- ☐ Monaghan
- ☐ Offaly
- ☐ Roscommon
- ☐ Sligo
- ☐ Tipperary
- ☐ Waterford
- ☐ Westmeath
- ☐ Wexford
- ☐ Wicklow

Q10. In what setting do you live most of the time?

- ☐ In the country / rural area
- ☐ Town / urban area

Q11. Which of the following best describes your ethnic or cultural background?

- ☐ White Irish
- ☐ White Irish Traveller
- ☐ Any other White background
- ☐ Black or Black Irish – African
- ☐ Black or Black Irish – Any other Black background
- ☐ Asian or Asian Irish – Chinese
- ☐ Asian or Asian Irish – Any other Asian background
- ☐ Other, including mixed background - please specify:

Q12. What is your personal annual income after tax (or your annual household income if you share income with someone else, e.g. a spouse/partner)? If you don't have an income, what money do you have to live on each year?

- ☐ Under €12,000
- ☐ €12,001 - €25,000
- ☐ €25,001 - €40,000
- ☐ €40,001 - €55,000
- ☐ €55,001 - €70,000
- ☐ Over €70,000

In the following section, you will be asked a number of questions about the online mental health self-help programmes (OMHSHPs) that you have used to get support for a mental health problem.

Note on abbreviations

Please take note of the following abbreviations used in this survey:

OMHSHP = Online mental health self-help programme

OMHSHPs = Online mental health self-help programmes

Q13. Please write the names of the OMHSHPs (online mental health self-help programmes) that you have used. If you don't remember their names you can provide short descriptions instead (for example 'online self-help programme for depression', 'stress-management meditation programme'). Write only one name / short description in each box.

☐	OMHSHP name _____
☐	OMHSHP name _____
☐	OMHSHP name _____
☐	OMHSHP name _____
☐	OMHSHP name _____
☐	OMHSHP name _____
☐	OMHSHP name _____
☐	OMHSHP name _____
☐	OMHSHP name _____
☐	OMHSHP name _____
☐	OMHSHP name _____
☐	OMHSHP name _____

Q14. Please now rate how useful each OMHSHP has been for you overall. Select the rating that most closely matches your experience.

	Extremely useful	Very useful	Somewhat useful	Not very useful	Not at all useful
OMHSHP name	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐

Q15. Engaging in an OMHSHP can involve contact with a 'supporter' such as a healthcare professional (e.g. GP, mental health professional) or a facilitator (e.g. trained volunteer). Their role is to provide assistance and encouragement with working through an OMHSHP; a healthcare professional also monitors progress.

Please select which OMHSHPs you have done with the help of a supporter.

- ☐ None of the above [SKIPS TO Q 16]
- ☐ OMHSHP name
- ☐ OMHSHP name
- ☐ OMHSHP name
- ☐ OMHSHP name
- ☐ OMHSHP name
- ☐ OMHSHP name
- ☐ OMHSHP name
- ☐ OMHSHP name
- ☐ OMHSHP name
- ☐ OMHSHP name
- ☐ OMHSHP name

Q15-A. Listed below are the OMHSHPs that you said you have done with the help of a supporter. Please indicate who your supporter was in each OMHSHP.

	Facilitator (e.g. trained volunteer)	GP	Mental health professional	Other healthcare professional	Other
None of the above	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐

Q15-B. How often were you in contact with the supporter in each OMHSHP?

	At least once a week	At least once a month (but not every week)	Less than once a month
None of the above	☐	☐	☐
OMHSHP name	☐	☐	☐
OMHSHP name	☐	☐	☐
OMHSHP name	☐	☐	☐
OMHSHP name	☐	☐	☐
OMHSHP name	☐	☐	☐
OMHSHP name	☐	☐	☐
OMHSHP name	☐	☐	☐
OMHSHP name	☐	☐	☐
OMHSHP name	☐	☐	☐
OMHSHP name	☐	☐	☐
OMHSHP name	☐	☐	☐
OMHSHP name	☐	☐	☐

Q15-C. How did contact with the supporter in each OMHSHP take place? Select all that apply.

	Email	In-person appointments	Instant messaging	Telephone	Text messaging	Video- calls	Other
None of the above	☐	☐	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐	☐	☐
OMHSHP name	☐	☐	☐	☐	☐	☐	☐

Q16. Why have you used an OMHSHP? Select all that apply.

- ☐ Curiosity (e.g. about a particular OMHSHP; wanted to try something new / online)
- ☐ Boredom
- ☐ Loneliness
- ☐ Desperation for help
- ☐ Affordability / free of cost
- ☐ Previous negative experience with in-person talking therapy
- ☐ Possibility of starting the OMHSHP immediately
- ☐ Possibility of doing the OMHSHP in my own time
- ☐ Possibility of working through the OMHSHP at my own pace
- ☐ Possibility of getting help without needing to travel
- ☐ Possibility of getting help without needing to leave the house
- ☐ Anonymity (e.g. no need to see/talk to a therapist in person)
- ☐ Privacy (e.g. no one else needs to know about it)
- ☐ To gain insights into how to better manage a certain issue or experience
- ☐ To find out how a certain approach (e.g. cognitive behavioral therapy) worked / whether it would work for me
- ☐ To get some help while I was on a waiting list to see a mental health specialist / receive treatment
- ☐ To participate in the research study of an OMHSHP
- ☐ I felt I had an issue and wanted to solve it myself
- ☐ I was recommended / prescribed an OMHSHP by a healthcare professional

☐ I have a disability or condition that prohibits me from accessing other mental health services - please specify your disability or condition:

☐ Other - please specify:

Q17. How did you hear about the OMHSHPs that you have used? Select all that apply.

- ☐ Friend or family member
- ☐ Healthcare professional
- ☐ Newspaper / magazine article
- ☐ Mental health charity
- ☐ College/university
- ☐ Health insurance company
- ☐ Research article
- ☐ Research study advertisement
- ☐ Search engine (e.g. Google, Bing, Yahoo)
- ☐ Social media site
- ☐ TV / Radio
- ☐ Don't remember
- ☐ Other - please specify:

Q18. Where were you living when you used those OMHSHPs? Select all that apply.

- ☐ In the country / rural area, Republic of Ireland
- ☐ Town / urban area, Republic of Ireland
- ☐ In the country / rural area, anywhere else
- ☐ Town / urban area, anywhere else

Q19. What are the main issues or experiences for which you have sought support through an OMHSHP? Select all that apply.

- ☐ Bereavement
- ☐ Eating issues
- ☐ Feeling anxious
- ☐ Feeling low / sad / depressed
- ☐ Feeling stressed
- ☐ Feeling suicidal
- ☐ Hearing voices
- ☐ Problem sleeping
- ☐ Relationship issues
- ☐ Self-harm
- ☐ Other - please specify:

Q20. What are the languages of the OMHSHPs that you have used? Select all that apply.

- ☐ Arabic
- ☐ Chinese
- ☐ English
- ☐ French
- ☐ German
- ☐ Irish
- ☐ Italian
- ☐ Latvian
- ☐ Lithuanian
- ☐ Polish
- ☐ Portuguese
- ☐ Romanian
- ☐ Russian
- ☐ Spanish
- ☐ Other - please specify:

Q21. In total, how much have you paid for the OMHSHPs that you have used (in Euro or equivalent)?

- ☐ 0 Euro
- ☐ 1 - 60 Euro
- ☐ 61 - 120 Euro
- ☐ 121 - 180 Euro
- ☐ 181 - 240 Euro
- ☐ 241 - 300 Euro
- ☐ 300+ Euro
- ☐ Don't remember

Q22. When did you first use an OMHSHP?

- ☐ In the last year
- ☐ 2 years ago
- ☐ 3-4 years ago
- ☐ 5-9 years ago
- ☐ 10 years ago or more
- ☐ Don't remember

Q23. Are you currently using an OMHSHP?

- ☐ Yes
- ☐ No

Q24. Overall, how often have you accessed OMHSHPs from the locations listed below?
Select the options that most closely match your experience.

	Always	Frequently	Occasionally	Rarely	Never
At home / place where you live(d) most of the time (including if housed in emergency accommodation)	☐	☐	☐	☐	☐
Any other place (work, college, public library, coffee shop, another person's home, homeless shelter, etc.)	☐	☐	☐	☐	☐
On the move (e.g. while commuting or travelling)	☐	☐	☐	☐	☐

Q25. Overall, how often have you accessed OMHSHPs from the computer devices listed below? Select the options that most closely match your experience.

	Always	Frequently	Occasionally	Rarely	Never
Desktop computer (PC, Mac)	☐	☐	☐	☐	☐
Laptop computer	☐	☐	☐	☐	☐
Smartphone	☐	☐	☐	☐	☐
Smart TV (TV with Internet)	☐	☐	☐	☐	☐
Tablet	☐	☐	☐	☐	☐

Q26. Overall, how often have you accessed OMHSHPs during the four times listed below? Select the options that most closely match your experience.

	Always	Frequently	Occasionally	Rarely	Never
6 am - 12 noon	☐	☐	☐	☐	☐
12 noon - 6 pm	☐	☐	☐	☐	☐
6 pm - 12 pm	☐	☐	☐	☐	☐
12 pm - 6 am	☐	☐	☐	☐	☐

Q27. How often have you experienced the following events? Select the options that most closely match your experience.

	Always	Frequently	Occasionally	Rarely	Never
Features of an OMHSHP not working properly	☐	☐	☐	☐	☐
Not having enough privacy while using an OMHSHP	☐	☐	☐	☐	☐
Having poor Internet signal while using an OMHSHP	☐	☐	☐	☐	☐
Having poor mobile network signal (3G/4G) while using an OMHSHP	☐	☐	☐	☐	☐
Being distracted by notifications from apps (e.g. text messages, emails, instant messages, social media) while using an OMHSHP	☐	☐	☐	☐	☐

Reaching the maximum amount of data allowed on your Internet plan affected when you could use an OMHSHP



Limited options to charge the battery of your computer device affected when you could use an OMHSHP



Limited options for Internet access affected when you could use an OMHSHP



Limited options to access a computer device affected when you could use an OMHSHP



Other
technical
difficulties
encountered
while using an
OMHSHP



In the next section you will be asked what interventions (if any) you have received so far for your mental health problem(s), and when in relation to using OMHSHPs.

Q28. Have you received any of the following interventions for your mental health problem(s)? Select all that apply.

- ☐ Community mental health nurse visit
- ☐ Day hospital / outpatient care
- ☐ ECT (electro-convulsive therapy)
- ☐ Holistic / alternative therapy
- ☐ Hospitalisation/ inpatient care
- ☐ Medication
- ☐ Peer support / self-help group, in-person
- ☐ Peer support / self-help group, online
- ☐ Talking therapy, in-person (individual or group)
- ☐ Talking therapy, online (therapy delivered via email, instant messaging, or Skype video-calls; individual or group)
- ☐ Other - please specify:

- ☐ None of the above [SKIPS TO Q29]

Q28-A. Listed below are the mental health interventions you said you have received for your mental health problem(s). For each intervention, please indicate if you have received it before you started to use any OMHSHPs.

	I have received this intervention before I started to use any OMHSHPs	I did not receive this intervention before I started to use any OMHSHPs
Community mental health nurse visit	☐	☐
Day hospital / outpatient care	☐	☐
ECT (electro-convulsive therapy)	☐	☐
Holistic / alternative therapy	☐	☐
Hospitalisation/ inpatient care	☐	☐
Medication	☐	☐
Peer support / self-help group, in-person	☐	☐
Peer support / self-help group, online	☐	☐
Talking therapy, in-person (individual or group)	☐	☐
Talking therapy, online (therapy delivered via email, instant messaging, or Skype video-calls; individual or group)	☐	☐
Other - please specify:	☐	☐
None of the above	☐	☐

Q28-B. Consider again the mental health interventions you have received for your mental health problem(s). Please indicate if you have used an OMHSHP at the same time as you were receiving any of the interventions.

	I have used an OMHSHP at the same time as I was receiving this intervention	I have never used an OMHSHP at the same time as I was receiving this intervention
Community mental health nurse visit	☐	☐
Day hospital / outpatient care	☐	☐
ECT (electro-convulsive therapy)	☐	☐
Holistic / alternative therapy	☐	☐
Hospitalisation/ inpatient care	☐	☐
Medication	☐	☐
Peer support / self-help group, in-person	☐	☐
Peer support / self-help group, online	☐	☐
Talking therapy, in-person (individual or group)	☐	☐
Talking therapy, online (therapy delivered via email, instant messaging, or Skype video-calls; individual or group)	☐	☐
Other - please specify:	☐	☐
None of the above	☐	☐

Next, some questions about your use of the Internet in general and in relation to mental health / mental health problems.

Q29. When, approximately, did you start using the Internet?

- ☐ In the last year
- ☐ 2 years ago
- ☐ 3-4 years ago
- ☐ 5-9 years ago
- ☐ 10 years ago or more
- ☐ Don't remember

Q30. Overall, how often do you go online?

(Please bear in mind that you are online every time you use a computer or other device to do an activity that requires that device to be connected to the Internet. For example: using social media apps on your Smartphone or tablet, downloading an e-book to an e-book reader, watching Internet-streamed TV on a Smart TV, etc.)

- ☐ Every day or almost every day
- ☐ At least once a week (but not every day)
- ☐ At least once a month (but not every week)
- ☐ Less than once a month

Q31. Which of the following computer devices do you use to go online? Select all that apply.

- ☐ Desktop computer (Mac, PC)
- ☐ Laptop computer
- ☐ Smartphone
- ☐ Smart TV (TV with Internet)
- ☐ Tablet

Q32. Which of the following computer devices do you own or have personal access to? Select all that apply.

- ☐ Desktop computer (Mac, PC)
- ☐ Laptop computer
- ☐ Smartphone
- ☐ Smart TV (TV with Internet)
- ☐ Tablet
- ☐ None of the above

Q33. Do you go online at home / place where you live most of the time (including if you are currently housed in emergency accommodation)?

- ☐ Yes
- ☐ No [SKIPS TP Q34]
- ☐ Not applicable (e.g. if out of home / homeless and not housed) [SKIPS TP Q34]

Q33-A. What Internet connections do you use to go online at home / place where you live most of the time (including if you are currently housed in emergency accommodation)?

Select all that apply.

- ☐ Broadband / wi-fi
- ☐ Data plan on Smartphone
- ☐ Dongle / mobile wi-fi hotspot
- ☐ Other - please specify:

Q33-A. What are the main reasons you do not go online at home / place where you live most of the time (including if you are currently housed in emergency accommodation)?

Select all that apply.

- ☐ Access costs too high (e.g. cost of mobile data plans, cost of home broadband)
- ☐ Equipment costs too high (e.g. cost of router or of computer devices)
- ☐ I have access to the Internet elsewhere
- ☐ I don't need to go online at home very much / at all
- ☐ I don't know how to set up Internet access at home
- ☐ Internet service is poor / not available in my area
- ☐ Mobile network (3G/4G) is poor in my area
- ☐ Not interested
- ☐ Privacy / security concerns
- ☐ Too busy / no time
- ☐ Waste of time
- ☐ Other - please specify:

Q34. Do you go online from any of the following locations? Select all that apply.

- ☐ Another person's home
- ☐ Coffee shop
- ☐ College/university
- ☐ Community center
- ☐ Homeless shelter
- ☐ Internet café
- ☐ On the move (e.g. while commuting or travelling)
- ☐ Public library
- ☐ Workplace
- ☐ Other - please specify:

- ☐ None of the above [SKIPS TP Q35]

Q34-A. Listed below are the locations from which you said you go online. How do you go online from each location? Select all that apply.

	I use my mobile data plan (e.g. on Smartphone, dongle)	I connect my computer device to the wi-fi available at the location	I use a computer device available at the location and already connected to the Internet there
Another person's home	☐	☐	☐
Coffee shop	☐	☐	☐
College/university	☐	☐	☐
Community center	☐	☐	☐
Homeless shelter	☐	☐	☐
Internet café	☐	☐	☐
On the move (e.g. while commuting or travelling)	☐	☐	☐
Public library	☐	☐	☐
Workplace	☐	☐	☐
Other - please specify:	☐	☐	☐
None of the above	☐	☐	☐

Q35. How often do you send/receive emails, use Instant Messaging, and use Internet voice/video calls? Select the options that most closely match your experience.

	Every day or almost every day	At least once a week (but not every day)	At least once a month (but not every week)	Less than once a month	Never
Send/receive emails	☐	☐	☐	☐	☐
Use Instant Messaging (e.g. Facebook Messenger, WhatsApp, Snapchat, Instagram)	☐	☐	☐	☐	☐
Use Internet voice/video calls (e.g. Skype, WhatsApp)	☐	☐	☐	☐	☐

Q36. How often do you do the following online activities? Select the options that most closely match your experience.

	Every day or almost every day	At least once a week (but not every day)	At least once a month (but not every week)	Less than once a month	Never
Search information online for your work or studies	☐	☐	☐	☐	☐
Search information online about leisure activities or local events	☐	☐	☐	☐	☐
Search information online about products or services	☐	☐	☐	☐	☐
Do a course online	☐	☐	☐	☐	☐
Look at news websites / apps	☐	☐	☐	☐	☐
Look at job opportunities or fill in a job application online	☐	☐	☐	☐	☐
Buy things online (e.g. products, tickets for events)	☐	☐	☐	☐	☐
Sell things online	☐	☐	☐	☐	☐
Make travel plans online	☐	☐	☐	☐	☐
Bank or pay bills online	☐	☐	☐	☐	☐
Use government services online (e.g. Revenue Online Service, Motor Tax Online)	☐	☐	☐	☐	☐

Q37. Listed below are more activities that people can do online. How often do you do each of them? Select the options that most closely match your experience.

	Every day or almost every day	At least once a week (but not every day)	At least once a month (but not every week)	Less than once a month	Never
Watch videos online (e.g. on YouTube, Vimeo)	☐	☐	☐	☐	☐
Post comments to videos you watch online	☐	☐	☐	☐	☐
Watch films / TV programmes online	☐	☐	☐	☐	☐
Listen to radio / music / podcasts online	☐	☐	☐	☐	☐
Download films / TV programmes / music	☐	☐	☐	☐	☐
Play games online	☐	☐	☐	☐	☐
Download softwares or games	☐	☐	☐	☐	☐
Download apps	☐	☐	☐	☐	☐

Q38. Thinking about your use of social media sites, online discussion forums, blogs, and chat rooms, how often do you...

	Every day or almost every day	At least once a week (but not every day)	At least once a month (but not every week)	Less than once a month	Never
Look at social media sites	☐	☐	☐	☐	☐
Post on social media sites	☐	☐	☐	☐	☐
Look at online discussion forums	☐	☐	☐	☐	☐
Post on online discussion forums	☐	☐	☐	☐	☐
Look at blogs	☐	☐	☐	☐	☐
Post on blogs	☐	☐	☐	☐	☐
Look at chat rooms	☐	☐	☐	☐	☐
Post in chat rooms	☐	☐	☐	☐	☐
Look at vlogs (video-blogs)	☐	☐	☐	☐	☐
Post a vlog (video- blog) you made	☐	☐	☐	☐	☐
Maintain a personal blog, website, or channel	☐	☐	☐	☐	☐

Q39. How often do you search online for health related information (e.g. injury, disease, nutrition, treatments, sexual health, improving health)? Select the option that most closely matches your experience.

- ☐ Every day or almost every day
- ☐ At least once a week (but not every day)
- ☐ At least once a month (but not every week)
- ☐ Less than once a month
- ☐ Never

Q40. How often do you search online for information about mental health / mental health problems? Select the option that most closely matches your experience.

- ☐ Every day or almost every day
- ☐ At least once a week (but not every day)
- ☐ At least once a month (but not every week)
- ☐ Less than once a month
- ☐ Never [SKIPS TO Q41]

Q40-A. When you search online for information about mental health / mental health problems, how do you begin searching? Select all that apply.

- ☐ Blog
- ☐ Chat room
- ☐ Mental health related website
- ☐ Online discussion forum
- ☐ Search engine (e.g. Google, Bing, Yahoo)
- ☐ Social media site
- ☐ Wikipedia
- ☐ Other - please specify:

Q41. Have you posted comments, questions or information online about mental health / mental health problems, or shared online your own personal experience with mental health / mental health problems?

- ☐ Yes
- ☐ No [SKIPS TO Q42]

Q41-A. What is it that you have posted or shared? Select all that apply.

- ☐ Specific questions about mental health / mental health problems
- ☐ Comments or information in response to others' posts or questions about mental health / mental health problems
- ☐ Comments or stories about your personal experience with mental health / mental health problems
- ☐ Other - please specify:

Q41-B. When you have posted comments, questions, information or your own personal experience about mental health / mental health problems, where have you posted that content? Select all that apply.

- ☐ Somewhere specifically to get feedback from a health / mental health professional
- ☐ Somewhere it would be seen by an audience of people with mental health problems similar to yours
- ☐ Somewhere it would be seen by a more general audience of friends or other internet users
- ☐ Other - please specify:

Q41-C. On what types of sites have you posted comments, questions, information or your own personal experience about mental health / mental health problems? Select all that apply.

- ☐ Blog
- ☐ Chat room
- ☐ Online discussion forum
- ☐ Social media site
- ☐ Website that allows comments
- ☐ Your personal blog, website, or channel
- ☐ Other - please specify:

Q42. How often do you...

	Every day or almost every day	At least once a week (but not every day)	At least once a month (but not every week)	Less than once a month	Never
Receive email updates or alerts about issues related to mental health / mental health problems	☐	☐	☐	☐	☐
Follow someone else's personal mental health experiences / updates on social media	☐	☐	☐	☐	☐
Look at someone else's commentary or personal experience about mental health / mental health problems on an online discussion forum, blog, chat room or website	☐	☐	☐	☐	☐

To conclude...

Q43. Please use this space to make any additional comments on your use of OMHSHPs and the Internet.

Q44. How did you hear about this study?

- ☐ Through a mental health organisation / group
- ☐ Though a non-mental health organisation / group
- ☐ On the Activelink website
- ☐ Message posted to the Association of Internet Researchers (AoIR) mailing list
- ☐ Facebook Ad
- ☐ Twitter
- ☐ Flyer
- ☐ Through a friend
- ☐ Other - please specify:

Q45. From what device are you accessing this survey?

- ☐ Desktop computer (PC, Mac)
- ☐ Laptop computer
- ☐ Smartphone
- ☐ Smart TV (TV with Internet)
- ☐ Tablet
- ☐ Other - please specify:

Q46. And from what location?

- ☐ Home / place where you live most of the time (including if housed in emergency accommodation)
- ☐ Any other place (work, college, public library, coffee shop, another person's home, homeless shelter, etc.)
- ☐ On the move (e.g. while travelling or commuting)

Please click on the 'Next' button to submit your survey.

Thank you for your time in answering this survey!

Your response has been recorded.

This research study will also use interviews to explore in more depth the experience of using an online mental health self-help programme for mental health support. Participation in the interview is voluntary and open to anyone who has completed the survey. For more information and how to take part, please follow the link to return to the study website <https://omhshp-research-study.com/interview/> or contact Manuela Ascari, the Principal Investigator, at 01-7008926 or manuela.ascari3@mail.dcu.ie

Appendix G – Interview consent forms

Consent form for in-person and Skype interviews

Project Title: The use of Online Mental Health Self-Help Programmes and Associated Technology by People with Mental Health Problems in their Everyday Lives.

Principal Investigator: Manuela Ascari, School of Nursing, Psychotherapy and Community Health, Dublin City University.

The purpose of this study is to explore how people with mental health problems use online mental health self-help programmes in their everyday lives for mental health support.

By signing this form you are consenting to take part in an individual interview with the Principal Investigator. Your participation is voluntary and you can withdraw at any time.

The interview will resemble a conversation in which you will be asked about your experience with using online mental health self-help programmes.

The interview will be audio-recorded. You can pause or end it at any time.

Anonymity and confidentiality

To protect your identity, any information that may lead to your identification will be changed in the interview transcript and in publications of the research.

Your personal information and interview material will be kept confidential. Only the Principal Investigator, her research supervisors and her thesis examiners will have access to your interview material. This material will be securely stored on the Principal Investigator's password-protected computer.

Participant – please complete the following (Select Yes or No for each question)

I have read the Information Sheet or had it read to me	Yes	No
I understand the information provided	Yes	No
I have had an opportunity to ask questions and discuss this study	Yes	No
I have received satisfactory answers to all my questions	Yes	No
I understand that the interview will be audio recorded	Yes	No

I understand that my participation in this interview is entirely voluntary.

I understand that I can withdraw my participation at any time, including after the interview has been completed, without explanation or negative consequences.

I understand that my identity and all information from this interview will be protected and securely kept to ensure confidentiality.

I have read and understood the information in this form. My questions and concerns have been answered, and I have a copy of this form. Therefore, I consent to take part in this study.

Participant Name:

Participant Signature:

Principal Investigator Name:

Principal Investigator Signature:

Date:

Consent form for Zoom interviews

Project Title: The use of Online Mental Health Self-Help Programmes and Associated Technology by People with Mental Health Problems in their Everyday Lives.

Principal Investigator: Manuela Ascari, School of Nursing, Psychotherapy and Community Health, Dublin City University.

The purpose of this study is to explore how people with mental health problems use online mental health self-help programmes in their everyday lives for mental health support.

By signing this form you are consenting to take part in an individual interview with the Principal Investigator. Your participation is voluntary and you can withdraw at any time.

The interview will resemble a conversation in which you will be asked about your experience with using online mental health self-help programmes.

The interview will be audio-recorded. You can pause or end it at any time.

The interview will take place online using the Zoom application. Security limitations exist with using Zoom because of the absence of end-to-end encryption.

Anonymity and confidentiality

To protect your identity, any information that may lead to your identification will be changed in the interview transcript and in publications of the research.

Your personal information and interview material will be kept confidential. Only the Principal Investigator, her research supervisors and her thesis examiners will have access to your interview material. This material will be securely stored on the Principal Investigator's password-protected computer.

Participant – please complete the following (Select Yes or No for each question)

I have read the Information Sheet or had it read to me	Yes	No
I understand the information provided	Yes	No
I have had an opportunity to ask questions and discuss this study	Yes	No
I have received satisfactory answers to all my questions	Yes	No
I understand that the interview will be audio recorded	Yes	No
I understand that Zoom has security limitations because of the absence of end-to-end encryption	Yes	No

I understand that my participation in this interview is entirely voluntary.

I understand that I can withdraw my participation at any time, including after the interview has been completed, without explanation or negative consequences.

I understand that my identity and all information from this interview will be protected and securely kept to ensure confidentiality.

I have read and understood the information in this form. My questions and concerns have been answered, and I have a copy of this form. Therefore, I consent to take part in this study.

Participant Name:	
Participant Signature:	
Principal Investigator Name:	Manuela Ascari
Principal Investigator Signature:	
Date:	

Appendix H – Interview guide

	Question	Notes
1.	Can you tell me what are the online mental health self-help programmes that you have you used?	If participant has used more than one OMHSHPs, get them to name the individual OMHSHPs and write them down
2.	Can you go through them and describe them?	What are they for? App or website? How do they work? Do any of these programmes require that you keep in touch with someone from the programme?
3.	Can you tell me about your experience with the online mental health self-help programmes that you have used? Have you found them useful? All of them? Which ones?	Name what aspects of their experience the participant talks about, e.g.: Usefulness? What they liked / disliked?

	In what ways have they been useful? In what ways were they not useful?	What the programmes look like? User-friendliness? Reasons for using the programmes? Etc.
4.	What were your expectations about the programmes when you started to use them? Did they change after that? How? What happened that made them change?	
	<u>How are you finding the interview so far?</u> <u>Is it going okay for you?</u>	
5.	What was going on for you that made you decide to use an online mental health self-help programme? / How did you get to use an online mental health self-help programme?	Answer to the previous question might partly address this question. Pay attention to <u>key words</u> and <u>key phrases</u> participant uses.
6.	How did you hear about the online mental health self-help programmes that you have used?	

7.	How did you choose which OMHSHP to use?	This might overlap with previous question
8.	If participant has used more than one OMHSHP: Did you use them at the same time? Can you tell me more about that?	This might have been mentioned earlier in the interview, if also already probed in more depth skip to next question
9.	If participant is currently using OMHSHPs - Are you getting support in other ways as well? For example face to face forms of support? And what are they? Phrase in past tense if participant is not using OMHSHPs any more Activities that you do because you find them beneficial to your wellbeing? If yes – Do you find it helpful to be using these different forms of support at the same time? Can you explain a bit or can you give me an example?	Again this might have come up earlier in the interview, probe here if needed

	Do other people know that you are using the OMHSHPs, for example close ones, your doctor, etc., and what is their response to that? Phrase in past tense if participant is not using OMHSHPs any more	Close ones Friends Doctor, therapist Peers from support groups Etc.
10.	How often do you use each OMHSHP?	They don't have to remember exactly. Probe: Regularly? Did you use some more than others? What's the reason for this? Etc.
11.	How easy or difficult has it been to find the time to use each OMHSHP? Can you give me an example?	Do they use different OMHSHPs in different ways?
12.	Is there a place where you prefer to be when you want to use the OMHSHPs? Why do you like that place? If no to above – From what place do you usually access the OMHSHPs that you use?	

	How does that work for you? Any other places? Do you need piece and quite when you want to use an OMHSHP? Do you get that?	
13.	I'd like to keep focusing on the OMHSHPs that you're familiar with. What do you think about the way they look? Do you have any views or thoughts on how they look? Is this something that matters to you all? E.g. layout, visual aspects	
14.	I'd like to ask you the same question about other components of the OMHSHPs that you have used. Do they have recordings, podcasts, things to listen to? Do you have any views or thoughts on them? Do you use them?	
15.	Do they have videos or things to watch? Again, do you have any thoughts on them? Do you use them?	
16.	Do you find the programmes easy to use?	
17.	Any technical issues?	

18.	What computer devices do you use for the online mental health self-help programmes? Do you have a preference over what computer device to use? Why is that?	
19.	Have you had to pay to use any of the OMHSHPs that you have used? Were you okay with that? Do you have any views on this (the cost of the programme)?	
	<u>5 more questions left</u>	
20.	How important is it to you that you can access mental health support through / on the Internet? In what way?	
21.	Beside using (the programme), are there other ways in which you have used the Internet for mental health support?	
22.	Based on your experience, what do you think of the Internet as a source of support for mental health problems?	

23.	Is there anything else you would like to say? (e.g. about the programme you have used, something we didn't cover in the interview so far, etc.)	
24.	I have one last question that I'd like to ask you and it's about your use of the Internet and of computers in your everyday life. How much do you use the Internet in your everyday life? Do you like using the Internet?	Internet Smartphone Computer
	<u>Are there any questions that you would like to ask me?</u>	

Appendix I – Interview distress protocol

From Dempsey et al. (2016, p. 486)

The interview will be terminated if:	The participant decides to terminate the interview.
	The participant decides to participate in the interview at another time or place.
The researcher will intervene if the participant is:	Experiencing anxiety or distress during the interview. The participant should be asked if they would like to take a break and if they wish for the audio-recorder to be switched off.
	Continuing to show signs of upset. The participant will be asked if they would like the interview to end and if they would like the researcher to call someone to spend time with them, such as a family member or friend.
	Unduly distressed. The researcher will remain with the participant until they are calm and composed. The participant may then decide to continue with the interview or not.
The researcher will, with the participant's consent:	Refer to others if they request.
	Gain permission to call them later in the day or the following day to ensure they are no longer distressed. Alternatively, the researcher may ask if they would like a family member or someone from the local community to call them to offer support.
	Contact details of useful numbers and support groups will be offered to the participant if they require them.

Appendix J – Phase 1 recruitment sources

Table 32 - Detailed breakdown of the sources through which Phase 1 participants heard about the study

	Participants
	N=109 n (%)
On the Activelink website	39 (35.8)
Through a mental health organisation / group	14 (12.8)
Through a friend	10 (9.2)
Twitter	11 (10.1)
Facebook Ad	6 (5.5)
Through a non-mental health organisation / group	6 (5.5)
Flyer	3 (2.8)
Other - please specify:	20 (18.3)
College	1 (0.9)
During one of my lectures, principal investigator spoke about and gave out flyers re study	1 (0.9)
Email	1 (0.9)
Email	3 (2.8)
Email from a staff member at NUIG	1 (0.9)
Email through my College	1 (0.9)
Email to DCU postgrads	1 (0.9)
Internal Departmental Email	1 (0.9)
LinkedIn	1 (0.9)
My dad (a mental health nurse) told me	1 (0.9)
Poster in trinity	1 (0.9)
recommended by college lecturer	1 (0.9)
Shared on depression/anxiety group on Facebook	1 (0.9)
Spun out	1 (0.9)
Spun Out	1 (0.9)
Spunout	1 (0.9)
spunout.ie	1 (0.9)
Spunout.ie	1 (0.9)

Table 33 - Computer devices and locations from which participants accessed the online questionnaire

	Participants
Computer devices from which participants accessed the survey	N=109 n (%)
Smartphone	62 (56.9)
Desktop computer (PC, Mac)	22 (20.2)
Laptop computer	21 (19.3)
Tablet	4 (3.7)
Smart TV	0
Locations from which participants accessed the survey	N=109 n (%)
Home / place where you live most of the time (including if housed in emergency accommodation)	72 (66.1)
Any other place (work, college, public library, coffee shop, another person's home, homeless shelter, etc.)	34 (31.2)
On the move (e.g. while travelling or commuting)	3 (2.8)

Appendix K – Descriptive statistics – Additional tables

Table 34 - Usefulness rating of online mental health tools used, by number of online mental health tools

Usefulness rating	Number of online mental health tools that were given each rating
	N=302 n (%)
Extremely / very useful	157 (52)
Somewhat useful	93 (30.8)
Not very useful / not at all useful	51 (16.9)
Missing	1 (0.3)

Table 35 - County where the participants lived at the time of the questionnaire

Demographics	Participants
County of living	N=109 n (%)
Dublin	48 (44.0)
Galway	12 (11.0)
Louth	7 (6.4)
Cork	5 (4.6)
Kildare	4 (3.7)
Meath	4 (3.7)
Kerry	3 (2.8)
Offaly	3 (2.8)
Tipperary	3 (2.8)
Waterford	3 (2.8)
Wicklow	3 (2.8)
Donegal	2 (1.8)
Kilkenny	2 (1.8)
Limerick	2 (1.8)
Westmeath	2 (1.8)
Laois	1 (0.9)
Cavan	1 (0.9)
Clare	1 (0.9)
Mayo	1 (0.9)

Roscommon	1 (0.9)
Sligo	1 (0.9)

Table 36 - Use of online mental health tools with supporter help

Use of online mental health tools with supporter help	Participants
	N=109 n (%)
No	58 (53.2)
Yes	49 (45.0)
Missing	2 (1.8)
Type of supporter*	N=49 n (%)
Mental health professional	21 (42.9)
Facilitator (e.g. trained volunteer)	20 (40.9)
Other healthcare professional	7 (14.3)
Other	7 (14.3)
GP	4 (8.2)
Frequency of contact with supporter*	N=49 n (%)
At least once a week	23 (47.0)
At least once a month (but not every week)	20 (40.9)
Less than once a month	12 (24.5)
Means of contact with supporter*	N=49 n (%)
Email	21 (42.9)
In-person appointments	19 (38.8)
Instant messaging	12 (24.5)
Other	9 (18.4)
Telephone	6 (12.2)
Video-calls	4 (8.2)
Text messaging	2 (4.1)

* Participants had multiple responses.

Table 37 - Total amount of money paid to use online mental health tools, setting (urban / rural) at time of use, first time using an online mental health tool, and current use

	Participants
Total amount of money paid to use online mental health tools	N=109 n (%)
0 Euro	73 (67.0)
1 - 60 Euro	25 (22.9)
61 - 120 Euro	6 (5.5)
121 - 180 Euro	1 (0.9)
181 - 240 Euro	1 (0.9)
241 - 300 Euro	0
300+ Euro	2 (1.8)
Don't remember	1 (0.9)
Where participants were living during the time they used online mental health tools*	N=109 n (%)
Town / urban area, Republic of Ireland	83 (76.1)
In the country / rural area, Republic of Ireland	27 (24.8)
Town / urban area, anywhere else	7 (6.4)
In the country / rural area, anywhere else	3 (2.8)
When participants started to use online mental health tools	N=109 n (%)
In the last year	31 (28.4)
2 years ago	27 (24.8)
3-4 years ago	38 (34.9)
5-9 years ago	10 (9.2)
10 years ago or more	3 (2.8)
Current use of online mental health tools	N=109 n (%)
Yes	59 (54.1)
No	50 (45.9)

* Participants had multiple responses.

Table 38 - Frequency of using email, instant messaging, and Internet voice / video calling

	<i>Every day or almost every day</i>	<i>At least once a week (but not every day)</i>	<i>At least once a month (but not every week)</i>	<i>Less than once a month</i>	<i>Never</i>
Online activity	n (%)	n (%)	n (%)	n (%)	n (%)
Send/receive emails N=109	96 (88.1)	11 (10.1)	1 (0.9)	0	1 (0.9)
Use Instant Messaging (e.g. Facebook Messenger, WhatsApp, Snapchat, Instagram) N=109	98 (89.9)	6 (5.5)	0	4 (3.7)	1 (0.9)
Use Internet voice/video calls (e.g. Skype, WhatsApp) N=109	35 (32.1)	28 (25.7)	16 (14.7)	19 (17.4)	11 (10.1)

Table 39 - Frequency of searching for information online and using online services

	<i>Every day or almost every day</i>	<i>At least once a week (but not every day)</i>	<i>At least once a month (but not every week)</i>	<i>Less than once a month</i>	<i>Never</i>
Online activity	n (%)	n (%)	n (%)	n (%)	n (%)
Search information online for work/studies N=109	85 (78.0)	15 (13.8)	3 (2.8)	3 (2.8)	3 (2.8)
Search information online about leisure activities or local events N=109	41 (37.6)	40 (36.7)	21 (19.3)	7 (6.4)	0
Search information online about products or services N=109	51 (46.8)	36 (33.0)	15 (13.8)	7 (6.4)	0
Do a course online N=109	6 (5.5)	8 (7.3)	18 (16.5)	49 (45.0)	28 (25.7)
Look at news websites/apps N=109	70 (64.2)	20 (18.3)	8 (7.3)	6 (5.5)	5 (4.6)
Look at job opportunities or fill in job application online N=109	22 (20.2)	30 (27.5)	13 (11.9)	29 (26.6)	15 (13.8)
Buy things online (e.g. products, tickets) N=109	8 (7.3)	24 (22.0)	49 (45.0)	26 (23.9)	2 (1.8)
Sell things online N=109	5 (4.6)	1 (0.9)	5 (4.6)	28 (25.7)	70 (64.2)
Make travel plans online N=109	7 (6.4)	7 (6.4)	23 (21.1)	60 (55.0)	12 (11.0)
Bank or pay bills online N=109	16 (14.7)	31 (28.4)	38 (34.9)	13 (11.9)	11 (10.1)
Use government services online (e.g. Revenue, Motor Tax) N=109	9 (8.3)	5 (4.6)	23 (21.1)	50 (45.9)	22 (20.2)

Table 40 - Frequency of engaging online with audio and video content, games, software and apps

Online activity	<i>Every day or almost every day</i>	<i>At least once a week (but not every day)</i>	<i>At least once a month (but not every week)</i>	<i>Less than once a month</i>	<i>Never</i>	<i>Missing</i>
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Watch videos online (e.g. on YouTube, Vimeo) N=109	65 (59.6)	30 (27.5)	9 (8.3)	3 (2.8)	2 (1.8)	/
Post comments to videos you watch online N=109	11 (10.1)	9 (8.3)	10 (9.2)	18 (16.5)	61 (56.0)	/
Watch films / TV programmes online N=109	48 (44.0)	30 (27.5)	12 (11.0)	12 (11.0)	7 (6.4)	/
Listen to radio / music / podcasts online N=109	63 (57.8)	22 (20.2)	15 (13.8)	5 (4.6)	4 (3.7)	/
Download films / TV programmes / music N=109	21 (19.3)	17 (15.6)	14 (12.8)	30 (27.5)	27 (24.8)	/
Play games online N=109	12 (11.0)	6 (5.5)	8 (7.3)	25 (22.9)	58 (53.2)	/
Download software or games N=109	7 (6.5)	8 (7.4)	14 (13.0)	28 (25.9)	51 (47.2)	1 (0.9)
Download apps N=109	9 (8.3)	9 (8.3)	39 (35.8)	46 (42.2)	6 (5.5)	/

Table 41 - Frequency of engaging with social media, online forums, blogs, chatrooms, and personal websites

	<i>Every day or almost every day</i>	<i>At least once a week (but not every day)</i>	<i>At least once a month (but not every week)</i>	<i>Less than once a month</i>	<i>Never</i>
Online activity	n (%)	n (%)	n (%)	n (%)	n (%)
Look at social media sites N=109	86 (78.9)	14 (12.8)	3 (2.8)	3 (2.8)	3 (2.8)
Post on social media sites N=109	33 (30.3)	29 (26.6)	17 (15.6)	17 (15.6)	13 (11.9)
Look at online discussion forums N=109	21 (19.3)	26 (23.9)	23 (21.1)	22 (20.2)	17 (15.6)
Post on online discussion forums N=109	10 (9.2)	9 (8.3)	14 (12.8)	27 (24.8)	49 (45.0)
Look at blogs N=109	11 (10.1)	18 (16.5)	16 (14.7)	32 (29.4)	32 (29.4)
Post on blogs N=109	5 (4.6)	8 (7.3)	9 (8.3)	20 (18.3)	67 (61.5)
Look at chat rooms N=109	4 (3.7)	4 (3.7)	3 (2.8)	22 (20.2)	76 (69.7)
Post in chat rooms N=109	3 (2.8)	1 (0.9)	4 (3.7)	15 (13.8)	86 (78.9)
Look at vlogs (video-blogs) N=109	9 (8.3)	15 (13.8)	19 (17.4)	22 (20.2)	44 (40.4)
Post a vlog (video-blog) you made N=109	1 (0.9)	2 (1.8)	3 (2.8)	3 (2.8)	100 (91.7)
Maintain a personal blog, website, or channel N=109	3 (2.8)	6 (5.5)	5 (4.6)	16 (14.7)	79 (72.5)

Appendix L – Results of the qualitative analysis of the questionnaire open-ended data

Theme 1

Theme title: Helpful aspects of online mental health tools	<i>Subtheme 1:</i> online mental health tools as accessible / available when needed	Can be accessed at any time and as needed
		Can be used when in-person support is unavailable
	<i>Subtheme 2:</i> online mental health tools as a tool to help oneself / be active in one's own recovery	/
	<i>Subtheme 3:</i> Using online mental health tools can help one feel better	Helps relax / ease feelings of anxiety / sleep
		Helps feel better about oneself / improves mood
		Helps motivation about recovery
		Helps feeling less lonely
		Having use of the Internet is of comfort
	<i>Subtheme 4:</i> online mental health tools as a source of access to help or helpful information	Findings useful ways of dealing with issues
		Learning about oneself
		Help with understanding one's problem
		Generic comments about the usefulness of information and support found online
	<i>Miscellaneous</i>	Trust relationship with supporter
		Experiences of others
		Other

Theme 2

Theme title: Unhelpful aspects of online mental health tools	<i>Subtheme 1:</i> Issues with the design and content of online mental health tools	Terms of use clash with one's preferences or needs
		Limited scope of content
		Free versions limited, paid versions expensive
		apps offer the same thing
		apps are not interactive enough
	<i>Subtheme 2:</i> Unsupportive online environments and online activities that can harm your mental health	Unsupportive online environments
		Social media
		Reading / searching too much about health or mental health
	<i>Subtheme 3:</i> Problems with supporter	Impersonal / generic responses
		Change of supporter
	<i>Miscellaneous</i>	General comments about finding self-help or online mental health tools not helpful
		Issues with finding reliable and relevant resources online in a timely manner
		Issues with online therapist

Theme 3

<i>Theme title:</i> Scope of online mental health tools	<i>Subtheme 1:</i> Role of online mental health tools alongside traditional treatments	online mental health tools helpful alongside / as a complement to traditional treatment
		online mental health tools helpful to fill gaps left by traditional treatments
		online mental health tools as an option in its own right
		online mental health tools as unsatisfactory / inferior alternative to (unavailable) in-person support
	<i>Subtheme 2:</i> Using online mental health tools at different stages of recovery	Using online mental health tools while in crisis
		Using online mental health tools when outside of crisis
		Using online mental health tools for maintenance / after stopping other treatment
		Using online mental health tools as a first port of call

Appendix M – List of the online mental health tools named by the questionnaire participants

Participants were asked to name or provide a short description of the online mental health tools they had used. They produced 301 responses which were grouped into six types. Self-help apps (including two apps designed to be used as an accessory to treatment) were the largest group with 38.3% (116/301) responses. There followed online programmes and courses (15.3%, 46/301), information / education websites and other online searches for mental health related information (12.3%, 37/301), supports involving contact with others (helplines, online counselling, support groups, online communities) (9%, 27/301), video and audio resources (5.3%, 16/301) and personality / assessment tests (1.7%, 5/301). A total of 17.9% (54/301) responses could not be categorised because of insufficient information.

Table 42 to Table 48 below list the online mental health tools used by the participants, presented by type. The responses that could not be categorised were collated into three tables, included in the last part of this Appendix and sorting the responses in the following way: responses that were generic references to support tools or activities (e.g. 'meditation', 'lgbt support') (Table 49); responses that only mentioned the issue for which an online mental health tool was used (e.g. 'loneliness', 'stress management') (Table 50); responses naming online tools that could not be identified (Table 51).

Information / educational websites and other online searches for mental health related information

This group includes responses naming a website that provides mental health information (e.g. 'Aware website'), responses naming an organisation or resource that the participant looked up online (e.g. 'Aware'), and responses containing other kind of information suggesting an online search for mental health related information (e.g. 'Autism overview and available interventions').

Mentioned by 21/109 participants.

Table 42 - Online mental health tools used by questionnaire participants – Information / educational websites and other online searches for mental health related information

	Name	No. participants who mentioned it	Description	URL
1	Aware or Aware website	6	Irish mental health charity that supports people with depression or bipolar disorder. It provides both face-to-face and online supports.	https://www.aware.ie/
2	Bodywhys	3	Irish charity for people with eating disorders and their families. It provides both face-to-face and online supports.	https://www.bodywhys.ie/
3	Shine or Shine website	3	Irish mental health charity that provides supports for people with mental health problems. Supports include face-to-face as well as email support and some online self-help resources.	https://www.shine.ie/
4	SpunOut or SpunOut website	3	Irish information website for people aged 16-25, including but not limited to mental health topics.	https://spunout.ie/

5	"Lust for life" / "Lust for Life Facebook Blog"	2	Irish mental health charity, movement and information website for your people.	https://www.alustforlife.com/ https://www.facebook.com/ALustForLife/
6	"3 T's"	1	Irish charity supporting those who self-harm and with suicidal feelings. The website has education and information resources such as self-help guides on a number of mental health issues.	https://www.3ts.ie/
7	"Alcoholics anonymous.ie"	1	Website of the Irish Alcoholics Anonymous. Alcoholics Anonymous is mutual support fellowship for people with drinking problems.	https://www.alcoholicsanonymous.ie/
8	"HSE"	1	Health Service Executive, Ireland's national health service. The website has a dedicated section with information and advice around mental health problems.	https://www.hse.ie/eng/
9	"Irish childhood bereavement network"	1	Irish Charity for those working with bereaved children, young people and their families.	https://www.childhoodbereavement.ie/
10	"Irish hospice foundation"	1	Irish charity for issues related to dying, death and bereavement. The website has educational resources on bereavement and loss.	https://hospicefoundation.ie/
11	"mentalhealthireland.ie"	1	Irish mental health charity that provides training, education and campaigning. The website has information on where to find supports and a blog.	https://www.mentalhealthireland.ie/
12	"Mind your head"	1	Irish website to help young people understand and cope with mental health problems.	http://myh.ie/

13	"Mood Juice"	1	Website with mental health self-help guides and information, run by the NHS (UK National Health Service).	https://www.moodjuice.scot.nhs.uk/
14	"Quit.ie"	1	HSE website and programme to help to quit smoking.	https://www2.hse.ie/quit-smoking/
15	"Reach Out"	1	Mental health information website and online forum for young people.	https://au.reachout.com/ (Irish website not found)
16	"Suicide or survive"	1	Irish mental health charity that offers a number of mental health and wellness programmes, including an online programme.	https://suicideorsurvive.ie/
17	"walk in my shoes on twitter"	1	Awareness-raising and education campaign of St Patrick's Mental Health Services (Dublin).	https://www.walkinmyshoes.ie/
18	"webmd.com"	1	Health information website.	https://www.webmd.com/
19	"Autism overview and available interventions"	1	/	/
20	"Depression and anxiety overview and available treatments"	1	/	/
21	"Disorders explained"	1	/	/
22	"Research"	1	/	/
23	"Self help guides"	1	/	/
24	"self help gurus"	1	/	/
25	"Treatment advice"	1	/	/

Online supports that involve contact with others: Helplines, counselling, support groups, online communities

Mentioned by 23/109 participants.

Table 43 - Online mental health tools used by questionnaire participants - Online supports that involve contact with others

	Name	No. participants who mentioned it	Description	URL
1	Turn2Me	4	Irish mental health charity providing online (live text chat) counselling and online (live text chat) support groups.	https://turn2me.ie/
2	Betterhelp.com	3	Online counselling website and directory	https://www.betterhelp.com/
3	"Recovery International Online Meeting" / "Abraham Low Self-Help Systems"	2	Peer-led support meetings and organisation that continues the work of the original Recovery organisation founded by Abraham Low. The meetings take place both offline and online.	https://recoveryinternational.org/
4	"7cups"	1	Online therapy; emotional support over online chat (with a 'listener'); self-help guides	https://www.7cups.com/
5	"Bodywhys online support group"	1	Online support group by the eating disorder charity Bodywhys	https://www.bodywhys.ie/
6	"Childline"	1	Children helpline (phone, text and live text chat)	https://www.childline.ie/
7	"Depression Online Support Group"	1	/	/
8	"Gay Switchboard Ireland"	1	Charity and helpline for the lgbt community and their families and friends	/
9	"MyMind Online counselling"	1	Counselling and psychotherapy service, face-to-face or online (video-call or telephone).	https://mymind.org/

10	"Laya Healthcare Online"	1	Health insurance company	https://www.layahealthcare.ie/
11	"Niteline"	1	Student helpline	https://niteline.ie/
12	"One in 4 website plus chat room"	1	Counselling and advocacy for adult survivors of childhood sexual abuse	https://www.oneinfour.ie/
13	"other online forums and chats"	1	/	/
14	"Pieta house"	1	Charity providing a 24 hour helpline and text service for people who feel suicidal, self-harm or have been bereaved by suicide. The calls and texts are answered by therapists. Also offer free counselling.	https://www.pieta.ie/
15	"Recovery speakers (AA)"	1	Online community for people recovering from alcoholism and drug addiction.	https://www.recoveryspeakers.com/
16	"SMART recovery"	1	SMART stands for Self-Management And Recovery Training. SMART Recovery is a support programme to help people abstain from addictive behaviours, based on peer led mutual support meetings. The meetings can be face-to-face or online.	https://www.hse.ie/eng/about/who/primarycare/socialinclusion/homelessness-and-addiction/smart-recovery/ https://smartrecovery.ie/
17	"Soberistas"	1	Online community for help with stopping drinking and staying sober.	https://soberistas.com/
18	"The Poetry School"	1	An arts organisation providing writing and poetry courses and workshops, both face-to-face and online.	https://poetryschool.com/
19	"Anxiety and Depression Facebook support page"	1	/	/
20	"Binge eating disorder support group on Facebook"	1	/	/
21	"Talklife"	1	App for mental health peer support.	https://www.talklife.co/

Self-help and wellbeing apps, and apps designed for use as an accessory to treatment

Mentioned by 59/109 participants.

Table 44 - Online mental health tools used by questionnaire participants - Apps for self-help, wellbeing, and as an accessory to treatment

	Name	No. participants who mentioned it	Description	URL
1	Headspace	36	App and website for mindfulness meditation.	https://www.headspace.com/
2	Calm	20	Website and app for sleep, meditation and relaxation.	https://www.calm.com/
3	Insight timer	5	App and online community for meditation.	https://insighttimer.com/
4	Generic references to meditation apps	5	/	/
5	Pacifica	4	Self-help app for stress, anxiety and depression.	Seems the app is now called Sanvello for Stress & Anxiety
6	Youper	3	App and chatbot for mental health support.	https://www.youper.ai/
7	Daylio	2	App for mood and habits tracking.	https://daylio.webflow.io/
8	Happify	2	Website and app with mental health tools and programmes.	https://www.happify.com/health/
9	MindShift	2	Self-help app for anxiety.	https://www.anxietycanada.com/resources/mindshift-cbt/
10	Wysa: Your Happiness Friend	2	App and chatbot for mental health support.	https://www.wysa.io/
11	Recovery Record	2	An app and web client for people getting treatment for an eating disorder and their treatment team, to help manage treatment / recovery.	https://www.recoveryrecord.eu/
12	"Action for Happiness App"	1	App with positive affirmations and prompts.	https://www.actionforhappiness.org/

13	"AiMei (Android App)"	1	An app with mood tracker, personality tests and goal setting to enhance Emotional Intelligence.	/
14	"Alive (Android App)"	1	App for positivity, resilience and mood tracking.	/
15	"Cognitive Behavioural Therapy: Anxiety and Depression (Android App)"	1	/	/
16	"DBT 112 (app for DBT skills and crisis help)"	1	Self-help app based on the principles of Dialectical Behavioural Therapy.	/
17	"DBT Companion (Android App)"	1	Self-help app based on the principles of Dialectical Behavioural Therapy.	/
18	"DBT Selfhelp and Diary Card app (for help with DBT skills and crisis)"	1	Self-help app based on the principles of Dialectical Behavioural Therapy.	/
19	"Fear Tools"	1	Self-help app for anxiety.	https://www.feartools.com/
20	"Goal meter"	1	Goals and habits tracker app.	https://goalmeter.kr/
21	"HADS (Android App)"	1	App for the Hospital Anxiety and Depression Scale (HADS)	/
22	"Koru Mindfulness"	1	App for Koru mindfulness	https://korumindfulness.org/guided-meditations/resources/
23	"Mood Mission: Cope with Stress, Moods & Anxiety (Android App)"	1	Self-help app for depression and anxiety.	http://moodmission.com/
24	"Mood Tools"	1	Self-help app for feeling sad or depressed.	https://www.moodtools.org/
25	"My Affirmations"	1	App for affirmations and positive thoughts.	/
26	"Panic Attacks? (Android App)"	1	<i>Unable to identify</i>	/
27	"Panic Shield"	1	Self-help app for panic attacks.	https://www.panicshield.org/
28	"Resilient (Android App)"	1	<i>Unable to identify</i>	/
29	"Simple Habit (mindfulness)"	1	Meditation app.	https://www.simplehabit.com/

30	"SPARX (Android App)"	1	App for depression for people aged 12-19, which uses a fantasy game environment.	https://www.sparx.org.nz/
31	"Steps App"	1	Step counter app.	/
32	"STOPP"	1	Self-help app to stop the cycles of depression, anxiety and repetitive unhelpful behaviours.	/
33	"Welzen (Mindfulness Meditation)(Android App)"	1	App for mindfulness meditation.	https://welzen.app/
34	"What's up"	1	App for the self-management of depression, anxiety, anger, stress.	/
35	"Woebot"	1	App and chatbot for mental health support.	https://woebot.io/
36	"Zazen Meditation Timer"	1	App for Zazen meditation.	/
37	"Virtual Hope Box"	1	App for use by people with depression. It can also be used in collaboration with a mental health provider as an accessory to treatment.	/
38	"Anxiety attack apps"	1	/	/
39	"App to help me get exercise"	1	/	/
40	"App to make sure I ate food"	1	/	/
41	"Mood monitor apps"	1	/	/
42	"Online app suggesting activities to relax you"	1	/	/
43	"Online app using sounds to relieve stress"	1	/	/
44	"Self-help anxiety management app"	1	/	/

Online programmes and courses

Mentioned by 30/109 participants

Table 45 - Online mental health tools used by questionnaire participants - Online programmes and courses

	Name	No. participants who mentioned it	Description	URL
1	Aware Online Life Skills Programme	9	Online self-help programme offered by the mental health charity Aware.	https://www.aware.ie/
2	Silvercloud	5	An Irish born company that develops online / digital solutions for health conditions and mental health programmes.	https://www.silvercloudhealth.com/
3	Generic references to stress-reduction programmes	3	/	/
4	Online programmes provided by NUIG (Silvercloud, Participate)	3	Online programmes for the students at National University Ireland Galway.	http://www.nuigalway.ie/counsellors/self-help/online-self-help/ https://nuig.participateonline.net/
5	Generic references to meditation or mindfulness programmes	2	/	/
6	Generic references to self-help programmes for depression	2	/	/
7	Moodgym	2	Online self-help programme for depression and anxiety	https://moodgym.com.au/
8	Padraig O'Morain online mindfulness courses	2	Online mindfulness courses by Padraig O'Morain.	https://www.padraigomorain.com/
9	"A Lust for Life online CBT"	1	Self-help CBT course online in the form of articles on the Lust For Life website.	https://www.alustforlife.com/tools/mental-health/a-lust-for-life-online-cbt-course-week-1
10	"charles linden programme for anxiety"	1	/	https://www.charleslinden.com/
11	"Living life to the full"	1	A set of wellbeing and life-skills courses online.	https://littf.com/

12	"Mel Robbins - MindSet Reset"	1	Habits training programme.	https://melrobbins.com/mindsetreset/
13	"Oprah and Deepak's 21-Day Meditation Experience"	1	Website and app for meditation.	https://chopracentermeditation.com/
14	"SOS Wellness Workshop"	1	Wellness Workshop by the charity Suicide or Survive.	https://suicideorsurvive.ie/
15	"SOS WRAP"	1	Wellness Recovery Action Plan (WRAP) workshop by the charity Suicide or Survive.	https://suicideorsurvive.ie/
16	"Sounds True"	1	Website for spiritual teachings, with online courses.	https://www.soundstrue.com/
17	"Terri Coles - Real Love Revolution"	1	Online coaching programme.	https://www.terricole.com/rlr2019/
18	"Wanderlust 21-Day Yoga Challenge"	1	Yoga programme delivered online here you commit to doing 21 straight days of yoga/	https://wanderlust.com/
19	"From TCD to do with ageing. It was advertised as "lifelong learning" though had a very high mental health component"	1	/	/
20	"Alcohol dependency programme"	1	/	/
21	"Eating disorder programme"	1	/	/
22	"Program for anxiety"	1	/	/
23	"Suicide prevention programme"	1	/	/
24	"Hypnosis course for relationships"	1	/	/
25	"Hypnosis course for smoking"	1	/	/

Video and audio resources

Mentioned by 10/109 participants.

Table 46 - Online mental health tools used by questionnaire participants - Video and audio resources

	Name	No. participants who mentioned it	Description	URL
1	Generic references to meditation videos / channels and mindfulness exercises on YouTube	5	/	/
2	Michael Sealey's hypnosis and meditations	1	The YouTube channel of hypnotherapist Michael Sealey.	https://www.youtube.com/channel/UC9GoqHypa-SDrGPMYeBkjKw
3	"Affirmations on YouTube and Spotify"	1	/	https://www.youtube.com/ https://www.spotify.com/ie/
4	"Various YouTube (inc the mindful movement"	1	The Mindful Movement is a YouTube channel with guided meditations, guided hypnosis and mindful movement practices.	https://www.youtube.com/ The Mindful Movement: https://www.youtube.com/channel/UCu_mPIZbo mAgNzfAUEIRL7w
5	"Meditation playlists on Spotify"	1		https://www.spotify.com/ie/
6	"Soundcloud for meditation music"	1		https://soundcloud.com/
7	"The Savvy Psychologist"	1	A mental health podcast by psychologist Jade Wu.	https://www.quickanddirtytips.com/savvy-psychologist
8	"college mindfulness audio"	1	/	/
9	"Beaumont hospital meditation"	1	Presumably this refers to the mindfulness and relaxation exercises on the webpage of the Mindfulness and Relaxation Centre of Beaumont Hospital, Dublin.	http://www.beaumont.ie/index.jsp?p=528&n=532&a=0

Online personality and assessment tests

Mentioned by 2/109 participants.

Table 47 - Online mental health tools used by questionnaire participants - Online personality and assessment tests

	Name	No. participants who mentioned it	Description	URL
1	"16Personalities.com"	1	Website with personality type tests	https://www.16personalities.com/
2	"Cognitive Style CBT test"	1	/	/
3	"Myers-Briggs"	1	Personality assessment tests	https://www.myersbriggs.org/
4	"Truity.com"	1	Website with personality type tests.	https://www.truity.com/
5	"Understandmyself.com"	1	Personality assessment questionnaire	https://www.understandmyself.com/

Social media

Among the participants' responses there were occasional mentions of online mental health tools being accessed on social media. A total of 9/109 participants did so. The table below provides a breakdown of the social media platforms that were mentioned by these participants.

Table 48 - Online mental health tools used by questionnaire participants - Social media

	Social media	No. participants who mentioned it
1	YouTube	6
2	Facebook	2
3	Twitter	1

Unspecified online support tools and resources

Table 49 - Online mental health tools used by questionnaire participants - Unspecified online resources

	Name	No. participants who mentioned it
1	Generic reference to meditation / mindfulness	5
2	Breathing	2
3	Affirmations	2
4	"angles"	1
5	"blogs"	1
6	"Cognitive Diary"	1
7	"color therapy"	1
8	"LGBT support"	1
9	"nutrition for good mental health"	1
10	"Services"	1
11	"Sleep hypnosis"	1
12	"Testimony"	1
13	"various short one session things"	1
14	"yoga"	1

Issues

Responses where participants only mentioned the issue for which they sought support online.

Table 50 - Online mental health tools used by questionnaire participants - Issues for which support was sought

	Name	No. participants who mentioned it
1	Depression	6
2	Anxiety	4
3	Stress management	3
4	Rape / abuse	2
5	"BPD"	1
6	"High Awareness"	1
7	"Maladaptive Perfectionism"	1
8	"Loneliness"	1

9	"For self esteem"	1
10	"Panic attacks"	1
11	"self harm"	1
12	"Self loathing"	1
13	"Sleep"	1
14	"sucidal thoughts"	1
15	"side effects to medications"	1

Uncertain or unidentifiable resources

Table 51 - Online mental health tools used by questionnaire participants - Unidentifiable resources

	Name	No. participants who mentioned it	Description	URL
1	"Mind your mental health"	1	Nothing found	/
2	"Psychology Ireland"	1	Nothing found	/
3	"Dare"	1	There seems to be a self-help app for anxiety identified, called <i>Dare</i> .	https://dareresponse.com/dareresponse-app/
4	"Dayby day"	1	There seems to be a time management app identified called <i>Day by Day Organizer</i> .	/
5	"Head Space - daily meditation tasks"	1	Unclear whether this is the Headspace mediation app	/
6	"Nuture online support"	1	One website called <i>Nuture Health</i> was identified. It is a counselling service and training support around pregnancy, childbirth, miscarriages, etc. They offer face-to-face, phone or Skype counselling; also support groups.	https://nuturehealth.ie/
7	"Mindspace"	1	There seems to be a meditation website and app identified called Mindspace.	https://www.mindspace.org.uk/app/
8	"WRAP"	1	There is an app called <i>Wellness Recovery Action Plan</i> app.	https://mentalhealthrecovery.com/wrapapp/

Appendix N – Association analyses – Additional tables

Table 52 - Mann-Whitney U tests for reasons for using an online mental health tool and frequency of access at four different times

		6am - 12noon	12noon - 6pm	6pm - 12am	12am - 6am
Possibility of starting the OMHSHP immediately ¹	Mann-Whitney U	1291.000	1031.000	964.500	1359.500
	Z	-.662	-2.240	-3.081	-.214
	Sig. (2-tailed)	.508	.025*	.002**	.830
Possibility of doing the OMHSHP in my own time	Mann-Whitney U	1358.500	1139.000	983.000	1344.000
	Z	-.287	-1.577	-3.007	-.384
	Sig. (2-tailed)	.774	.115	.003**	.701
Possibility of working through the OMHSHP at my own pace	Mann-Whitney U	1247.500	1004.500	1000.500	1200.500
	Z	-.569	-2.153	-2.510	-.890
	Sig. (2-tailed)	.569	.031*	.012*	.373
Possibility of getting help without needing to travel	Mann-Whitney U	892.500	845.000	822.000	905.500
	Z	-1.476	-1.745	-2.173	-1.389
	Sig. (2-tailed)	.140	.081	.030*	.165
Possibility of getting help without needing to leave the house	Mann-Whitney U	982.500	1060.500	1241.500	1168.500
	Z	-2.192	-1.464	-.590	-.940
	Sig. (2-tailed)	.028*	.143	.555	.347
Privacy	Mann-Whitney U	1241.000	1118.000	1103.500	1124.500
	Z	-.131	-.865	-1.242	-.939
	Sig. (2-tailed)	.896	.387	.214	.347

* Significant at the .05 level.

** Significant at the .01 level.

¹ Reasons for using an online mental health tool taken verbatim from the online questionnaire, where the term OMHSHP (online mental health self-help programme) was used. Please see explanation provided in section 4.4 of the Methodology Chapter.

Table 53 - Mann-Whitney U tests for demographics and frequency of looking for health and mental health information online

		Searching online for health related information	Searching online for mental health related information
Age – under 35 / 35 and above	Mann-Whitney U	1406.500	1394.000
	Z	-.128	-.209
	Sig. (2-tailed)	.898	.835
Gender – female / male	Mann-Whitney U	917.500	876.500
	Z	-.053	-.383
	Sig. (2-tailed)	.958	.702
Sexual orientation – heterosexual / non- heterosexual	Mann-Whitney U	1093.500	1235.000
	Z	-1.114	-.131
	Sig. (2-tailed)	.265	.896
Education – third level education / no third level education	Mann-Whitney U	1367.500	1289.000
	Z	-.620	-1.120
	Sig. (2-tailed)	.535	.263
Employment status – working / not working	Mann-Whitney U	1417.000	1350.000
	Z	-.302	-.729
	Sig. (2-tailed)	.763	.466
Relationship status – in a relationship / not in a relationship	Mann-Whitney U	1140.500	1188.000
	Z	-2.038	-1.725
	Sig. (2-tailed)	.042*	.085
County – County Dublin / any other county	Mann-Whitney U	1356.000	1197.500
	Z	-.694	-1.705
	Sig. (2-tailed)	.488	.088
Income – Up to 25,000E a year / above 25,000E a year	Mann-Whitney U	1388.000	1146.500
	Z	-.202	-1.771
	Sig. (2-tailed)	.840	.077
Setting – rural / urban	Mann-Whitney U	1053.500	1038.000
	Z	-.191	-.306
	Sig. (2-tailed)	.849	.760

*. Significant at the .05 level.

Table 54 - Chi-Square tests of independence between demographics and posting mental health content online

	Posting mental health related content online	
Setting (rural vs urban)	Chi-square	1.230
	df	1
	Sig. (2-tailed)	.267
Age - under 35 / 35 and above	Chi-square	.916
	df	1
	Sig. (2-tailed)	.338
Gender – female / male	Chi-square	.015
	df	1
	Sig. (2-tailed)	.904
Sexual orientation – heterosexual / non-heterosexual	Chi-square	2.121
	df	1
	Sig. (2-tailed)	.145
Education – third level education / no third level education	Chi-square	.112
	df	1
	Sig. (2-tailed)	.737
Employment status – working / not working	Chi-square	.112
	df	1
	Sig. (2-tailed)	.737
Relationship status – in a relationship / not in a relationship	Chi-square	.014
	df	1
	Sig. (2-tailed)	.906
County – County Dublin / any other county	Chi-square	.524
	df	1
	Sig. (2-tailed)	.469
Income – Up to 25,000E a year / above 25,000E a year	Chi-square	1.343
	df	1
	Sig. (2-tailed)	.246

Appendix O – Transcription conventions

Transcription symbols used as part of transcribing the interviews.

Symbol	Explanation	Example
[	Beginning of overlapping speech	I Okay. And these [are- P [And that's it.
]	End of overlapping speech	P [it's just been so] yeah I [Headspace yeah]
word-	Cut-off speech or sound	I And do- do you have a preference?
(word)	Uncertain transcription	P It was fine (it was-) it looked okay.
()	Inaudible part of recording	P I had like a course and () it included ten downloads.
((word))	Comment on the text or description of a nonverbal phenomenon	I Okay emm ((<i>long audible inbreath</i>)) let me see
{word ((word))}	The comment (in italics between double round brackets) applies to the portion of speech enclosed by the curly brackets.	P If you want to do it over six years or {sixteen ((<i>laughing</i>))} years you can.
<u>word</u>	Underlining indicates emphasis	P Actually I feel like I don't <u>need</u> to be in as much control .
/N: word/	Interjection on a speaker's flow of talk by another speaker. The capital letter (in italics) is the initial of the speaker interjecting. As used in Malson and Ussher (1996).	I Sorry if you- if I go silent at some point it's just I'm taking notes (.) /P: yeah/ emm If I go quiet
(.)	A short pause or silence of one second or shorter.*	I This is it (.) for the first part.
(..)	A longer pause or silence.*	I Could tell me in general about your experience with using these programmes? (..) P Yeah, absolutely.
=	Placed at the end of a line and at the start of the next line by the same speaker to indicate continued flow of	P It's a different way of you know (.) it's doing something to your brain that you're not entirely aware of, so [it's a different way =

	talk by that speaker. Used when a speaker's flow of talk continues on non-consecutive lines in the transcript.	I [A-ha he-he-he P = of coping, you know?
Punctuation (e.g. commas, full stops, question marks)	Punctuation is used to improve the readability of the transcript. Care is taken to use punctuation in a way which is true to the original data (Braun & Clarke, 2006, p. 88), for example a question mark at the end of a question.	

I = interviewer

P = participant

* A pause or silence indicates that neither speaker is speaking at that moment.

Appendix P – Coding matrix

This Appendix presents an extract of the matrix that was used to facilitate the process of coding the interviews line by line. The first two columns contain the data divided up into paragraphs with each paragraph given a numeric identifier. The third and fourth columns housed the codes and any comments, respectively.

I = interviewer

P = participant

	Data	Codes	Comments
1	I [...] so if you're happy with it we'll just get started then, [yeah?		
2	P [Yeah, no problem		
3	I Okay so the first question that I wanted to ask was if you could tell me the kind of mental health apps that you have used, their names or just if you want to go through them and tell me what they- what they are or what they were		
4	P Yeah. I looked at a number of different ones originally ehm I looked at Calm erm erm I looked at some ehm apps which were just based around- free apps that were based around, you know, background music and stuff like that and some of the free meditation apps ehm just to see what ehm (.) how much of a help they were, you know? Ehm what I settled down then was the	Originally looked at different MH apps to see how much of a help they were Looked at the Calm app Looked at free apps based around background music Looked at free meditation apps Chose Headspace app after having looked at a variety of apps for meditation / relaxation	

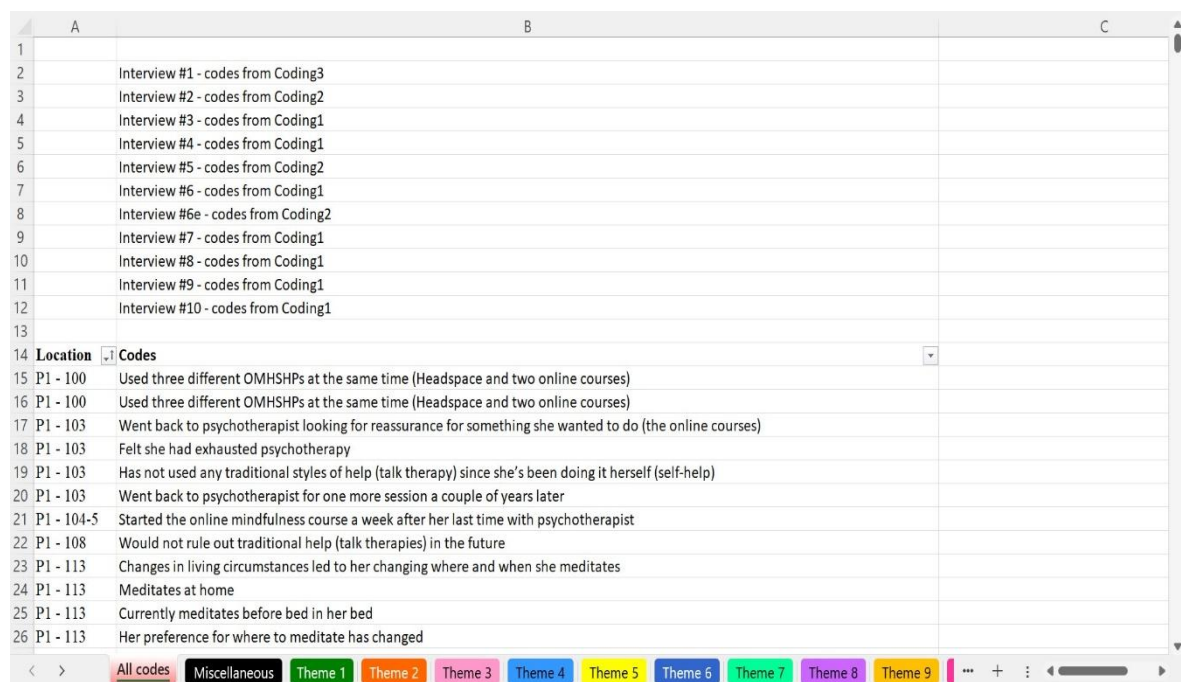
	Headspace app, (.) to- and I use that (..) daily, you know, I'd use it maybe two to three times a day, but ehm yeah I was mainly looking, as I said, at the free apps initially, music background, music-calming, just for relaxing, and then I wanted to get a- more of a (.) ehm an app that was- (.) ehm (a compost-) you know a whole programme of-around meditation and relaxation, stuff like that, so that's (settling) on Headspace	Uses Headspace app daily Was initially looking mainly at free apps with background music for calming / relaxation Wanted an app that had a whole programme around meditation and relaxation	Something a bit more structured than the apps he was looking at initially?

Appendix Q – Excel Workbook for the thematic analysis of the interviews

The use of an Excel Workbook helped with the process of analysing the codes and developing themes. The Workbook included the codes masterlist worksheet (containing all the individual codes generated during the coding stage), individual worksheets for each emerging pattern of meaning / theme, and a 'Miscellaneous' worksheet. The below screenshots are from the final iteration of the Workbook (final themes). The individual worksheet tabs, each in a different colour, can be seen at the bottom of each screenshot.

Figure 27 - Thematic analysis - Excel Workbook – Codes masterlist

Screenshot of the worksheet containing all the codes generated during the coding stage



	A	B	C
1			
2		Interview #1 - codes from Coding3	
3		Interview #2 - codes from Coding2	
4		Interview #3 - codes from Coding1	
5		Interview #4 - codes from Coding1	
6		Interview #5 - codes from Coding2	
7		Interview #6 - codes from Coding1	
8		Interview #6e - codes from Coding2	
9		Interview #7 - codes from Coding1	
10		Interview #8 - codes from Coding1	
11		Interview #9 - codes from Coding1	
12		Interview #10 - codes from Coding1	
13			
14	Location	Codes	
15	P1 - 100	Used three different OMHSHPs at the same time (Headspace and two online courses)	
16	P1 - 100	Used three different OMHSHPs at the same time (Headspace and two online courses)	
17	P1 - 103	Went back to psychotherapist looking for reassurance for something she wanted to do (the online courses)	
18	P1 - 103	Felt she had exhausted psychotherapy	
19	P1 - 103	Has not used any traditional styles of help (talk therapy) since she's been doing it herself (self-help)	
20	P1 - 103	Went back to psychotherapist for one more session a couple of years later	
21	P1 - 104-5	Started the online mindfulness course a week after her last time with psychotherapist	
22	P1 - 108	Would not rule out traditional help (talk therapies) in the future	
23	P1 - 113	Changes in living circumstances led to her changing where and when she meditates	
24	P1 - 113	Meditates at home	
25	P1 - 113	Currently meditates before bed in her bed	
26	P1 - 113	Her preference for where to meditate has changed	

At the bottom of the screenshot, the following tabs are visible: All codes, Miscellaneous, Theme 1, Theme 2, Theme 3, Theme 4, Theme 5, Theme 6, Theme 7, Theme 8, Theme 9.

Figure 28 - Thematic analysis - Excel Workbook – Theme 1 worksheet

	A	B	C	D	E
1					
2	Theme 1 - Online mental health tools expanding options for support				
3					
4					
5	Location	Codes	Comment	Comment	Comment
6	P1 - 108	Would not rule out traditional help (talk therapies) in the future	A direct source of mental health support alongside traditional treatments and other activities	<i>Useful at different times or for different people</i>	
7	P1 - 173	Has strong opinions about the pitfalls of the Internet as a source of help for MH problems	Online MH tools not the same as traditional treatments	<i>Lack of expert, active guidance from MH professional</i>	
8	P1 - 173	If you look online for help / answers for your anxiety you may make yourself worse: if you're in a heightened state of anxiety / if your hormones or cortisol are out of kilter; if you want answers / help and you haven't thought it through; if you self-diagnose; if you get "insane" information and apply it to yourself	Online MH tools not the same as traditional treatments	<i>Lack of expert, active guidance from MH professional</i>	
9	P1 - 173	Need to exercise caution when "you're doing it all yourself" online because you're not under the supervision of a medical practitioner	Online MH tools not the same as traditional treatments	<i>Lack of expert, active guidance from MH professional</i>	
10	P1 - 53	Liked the element of independence of self-help = you're helping yourself and don't need somebody else to help you	More suitable than traditional face-to-face forms of support		
11	P1 - 53	Self-help has produced more lasting change for her than getting help from somebody (psychotherapy)	More suitable than traditional face-to-face forms of support		
12	P10 - 307	(implied) Looked into a digital counselling app as an affordable alternative to (traditional) counselling	Alternative to unavailable services		
13	P10 - 307	"I need a person" = a counsellor to talk to face-to-face ("person" and "face to face" are conflated)	Online MH tools not the same as traditional treatments	<i>Dis/embodiment</i>	
	P10 - 307	Might have used digital counselling if it had had "the human element" (possibility of talking to counsellor face-to-face ("human element" and	Online MH tools not the same as traditional treatments	<i>Dis/embodiment</i>	

Appendix R – Online mental health tools used by the interview participants

Participant	Main online mental health tools used	Other online mental health tools ⁴⁰
P1	- Headspace - Online mindfulness course - Online self-compassion course - Hypnosis downloads	/
P2	- Meditation timer app	- Guided meditations on YouTube
P3	- Poetry sharing on various sites - Poetry groups on Facebook and Twitter - Facebook author's page	/
P4	- Online courses on mental health and psychology topics delivered by colleges on the Coursera and FutureLearn platforms - Information on mental health from healthcare and lay (Wikipedia) websites	/
P5	- Calm	- Online counselling service
P6	- Aware online CBT programme - Plum Village - Evernote - Google Excel - Google Drive - YouTube for information searches	- MoodSpace - Silvercloud - Daylio - ACT Companion
P7	- Turn2Me email counselling - Insight Timer - 2 Facebook support groups for eating disorders / body image - Information on mental health medication, counsellor searches	- Bodywhys chat-based online support group - Calm
P8	- Headspace - Information around mental health from official MH websites	- Calm - Apps with music for relaxation - Various free meditation apps
P9	- TED talks (on Facebook) - Big Think (on Facebook) - Facebook groups with memes - Collection of images and links on Facebook - Tracking app for walking	/

⁴⁰ These online mental health tools were short-lived or looked at but never used.

P10	- Organisational app - Exercise tracking app - Gif for relaxation - Instagram - Sticky Notes - Google Drive	- App for counselling - Calm

Appendix S – Integration matrix

Sample from the 21-pages long integration matrix document.

Quantitative results	Qualitative results	Integration	Comments
Issues / experiences for which help was sought through an online MH tool A total of 43.1% of the participants had sought help through an online mental health tool for feeling suicidal. People who used online mental health tools for support with feeling suicidal and self-harm were significantly more likely to have used an online mental health tool out of desperation for help (see analyses of associations). A total of 56% of the participants had sought help through an	<i>Theme 2:</i> Use of online mental health tools increasing support in time of need, especially while in crisis. <i>Theme 1:</i> One way in which interview participants used meditation /	Statically significant associations between using online mental health tools out of desperation for help and issues for which help was sought (feeling suicidal, self-harm) complement results from Theme 2 that increased need for support when experiencing a mental health crisis was a common circumstance under which participants took up online mental health tools. Over half (56%) of the questionnaire participants reported seeking	Objective c – Role of technology in how people use online mental health tools

online mental health tool for problem sleeping.	relaxation apps was to help with sleeping problems. <i>Theme 7:</i> For these participants, having this form of support in the form of an app on their smartphone meant having the flexibility and convenience of using the app in bed.	support through an online mental health tool for problem sleeping. The interviews provided complementary information on this. Problem sleeping was mentioned by some interview participants, specifically when they talked about their use of meditation / relaxation apps. One use these participants made of meditation / relaxation apps was to help them get to sleep. Additionally, having this form of support in the form of an app on their smartphone made it flexible and convenient for them to use the app in bed (Theme 7).	
Cost of online MH tools used Affordability or free-of-cost nature of online mental health tools was the most popular reason for using an online mental health tool (66.1%). 67% of questionnaire participants did	<i>Theme 10:</i> - Standard rates of traditional therapy (including in its online version) and limited options for affordable mental health supports were identified as a barrier to	Concerning how much participants had paid to use online mental health tools, the majority of questionnaire participants had, up to that point, used online mental health tools at no cost (67%) or had cumulatively paid up to 60 Euro (22.9%).	Affordable / free of cost a popular reason for using an online mental health tool – Why? And what are the implications of online mental health tools being free or affordable? - Affordable / free of cost online mental health

not pay to use online mental health tools. 22.9% of questionnaire participants had cumulatively paid up to 60 Euro (up to then) to use online mental health tools. 60.6% had annual income / amount of money they lived on yearly of up to 25.000 Euro. Additionally, 25.7% were students or in training and 14.6% were unemployed or on long-term sickness / disability pension.	accessing mental health supports, especially for people with limited financial means. <i>Theme 1:</i> A few participants talked about using online mental health tools as affordable alternative to unaffordable treatments. <i>Theme 5:</i> - Participants paid attention to the price of online mental health tools and appreciated reasonably priced ones. - Participants were willing to pay for an online mental health tool but did not buy blindly. They took into account a number of aspects that they weighted against one another.	Information made available during the interviews about whether the interviewees had used free or paid online mental health tools also collated. This information was consistent with the data from the questionnaire in that interview participants had used both free and paid online mental health tools. The questionnaire also showed that the most popular reason for using online mental health tools, selected by 66.1% of the participants, was their being affordable or free of cost. This complemented the result that most questionnaire participants had not paid to use online mental health tools or had cumulatively spent no more than 60 Euro. Questionnaire data on income and employment status may help explain why affordability / free of cost was a popular reason for using an online mental health tool.	tools lower / eliminate the financial barrier to accessing such tools – interesting from the point of view of the issue of social inequality in the ability to access mental health supports. C.f. 60.6% of questionnaire respondents reported an annual income of up to €25,000. - An affordable alternative to unaffordable treatments. - People like free / cheaper stuff?

		Interview results further complemented these results. Complementary information was provided by the qualitative results. In the interviews, the rates of traditional therapy (including therapy delivered online) and the scarcity of more affordable mental health supports were identified as barriers to accessing mental health treatments, especially for people with limited financial means (Theme 10). A few interviewees openly referred to situations in which people may look at free or affordable online mental health tools as an alternative to unaffordable treatments (Theme 1). Further complementary results came from interviewees' stated views on paying for the use of online mental health tools. The results highlighted that interview participants did pay	

		attention to the price of an online mental health tool but not on its own. Cost was weighed against other factors such as helpfulness, quality, content and features on offer, the amount of use to be got out of an online mental health tool, and the transparency and honesty of its sales practices (Theme 5).	