Submitted in partial fulfilment of the Lancaster University Doctorate in Clinical Psychology

Doctoral Thesis:

Exploring the experiences and perspectives of using mental health apps

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Word Count

Section	Main Text	Appendices, References, Figures and Tables	Total
Abstract	279	0	279
Literature Review	7914	10081	17995
Research Paper	7906	4243	12149
Critical Appraisal	4000	1023	5023
Ethics Section	3836	4888	8724
Total	23935	20235	44170

Thesis Abstract

This thesis presents three papers relating to the qualitative exploration of using mental health smartphone applications (MH apps) through the perspectives of 1) young people, 2) people living with Obsessive Compulsive Disorder (OCD), and 3) a critical appraisal of the research study.

Section one presents a literature review of 12 qualitative research papers exploring the experiences and perspectives of young people who have used MH apps. These were analysed through a thematic synthesis approach and three themes were developed: 1) Readily available bite-sized support; 2) Reclaiming agency; 3) Normalisation through connection and anonymity. The findings highlight the perceived value of MH apps in enhancing autonomy for young people and acting as a gateway to mental health support by reducing internal and systemic barriers to mental health support.

Section two presents a research study exploring the perspectives and experiences of using MH apps by eight people living with OCD. Semi-structured interviews were conducted with each participant, and the data was analysed using reflexive thematic analysis. Three themes were developed: 1) Finding a way into OCD support; 2) The value of human guidance; and 3) The quandary of connections. Participants described the value of using MH apps to overcome barriers to support, as a way of increasing guided support to engage with challenging OCD outside of therapy and becoming connected to the OCD community.

Section three presents a critical appraisal of the research study. The author has reflected upon the research study and literature review findings, exploring areas of commonality and difference. Furthermore, strengths and limitations of the research study are explored, as well as clinical implications and areas of future research, reasons for conducting the study and reflexivity.

Declaration

This thesis describes research submitted in May 2023 as a requirement for the Doctorate in Clinical Psychology Programme at the Division of Health Research, Lancaster University. The work presented here is my own, except where due reference is made. This thesis has not been submitted for the award of any higher degree elsewhere.

Name: Faromarz Nasiri

Date: 26th May 2023

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Firstly, I would like to thank the participants who generously gave their time to participate in this research. I would also like to thank my research supervisors, Dr Ian Smith and Dr Miriam Sturdee for their invaluable support, guidance, and feedback throughout this process.

To my parents, I am deeply grateful for all of your hard work and sacrifice which has allowed me to be where I am today. Lastly, my sincerest thanks and love goes out to you, Rachel. I am eternally grateful for your unwavering faith, support, and encouragement throughout this journey.

Thesis Contents

Section 1: Literature Review

Young people's perspectives of mental health apps: a systematic review and thematic synthesis of qualitative studies

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Word Count: 7998 (excluding title page, references, tables and appendix)

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Abstract

Purpose: The current review aimed to synthesise qualitive literature exploring young peoples' experiences and perspectives of mental health mobile apps.

Methods: A systematic search led to the inclusion of 12 qualitative studies in this review. Studies were appraised using an adapted version of the Critical Appraisal Skills Programme (CASP). Data from the included studies were synthesised using a thematic synthesis approach.

Results: Thematic synthesis of the studies led to the development of three themes: 1) Readily available bite-sized support; 2) Reclaiming agency; 3) Normalisation through connection and anonymity.

Conclusions: Mental health apps have the potential to provide young people with accessible mental health support, helping them to overcome barriers to traditional mental health services, and develop a sense of autonomy and connection. This review presents clinical implications to guide clinicians and service providers in how apps could be utilised to enhance mental health support.

Keywords: qualitative research; thematic synthesis; mental health; mobile apps; young people

Introduction

Mental health difficulties amongst young people (YP) are increasing in prevalence across the world. The early onset and psychosocial impact on different areas of YP's lives (Collishaw, 2015; Davies, 2014; Kessler et al., 2005; Polanczyk et al., 2015) make this a significant public health issue (Kieling et al., 2011). In the UK, data from the National Health Service (NHS) has shown that between 2017 and 2021, the proportion of 6-16 year olds with a mental health condition increased from one in nine (11.6%) to one in six (17.4%) (Newlove-Delgado et al., 2021). Amongst young females aged 17–19 years, this figure rose to 1 in 4 (24.8%). Whilst changes in methodology mean prevalence estimates can be difficult to directly compare over time, further research has supported the increase in occurrence of mental health difficulties in YP (Patalay & Gage, 2019).

In recent years, the increasing mental health needs of YP have been recognised and prioritised by policymakers internationally (Graetz et al., 2008; Halsall et al., 2019; NHS England, 2016). Identifying poor mental health and providing appropriate support and treatment is essential for children and YP; half of all mental health conditions appear to start by the age of 14, and 75% by the age of 18 (Kim-Cohen et al., 2003), leading to ramifications into adulthood, and impacting the person, family members, and wider society through economic burdens.

In the UK, government reports such as *The Five Year Forward View for Mental Health* (NHS England, 2016) provided proposals to improve access to Children and Young People's Mental Health Services (CYPMHS), with the NHS Long Term Plan (NHS England, 2019) further committing to increase funding for CYPMHS. Despite such commitments, the demand for mental health support for YP continues to outweigh the support that strained mental health services are able to provide. As a result, YP report significantly high levels of unmet mental health needs. Across different countries, these levels range from 50% to 90% (Health and Social Care Committee, 2021; Kourgiantakis et al., 2023; Shim et al., 2022). Additionally, the coronavirus pandemic has disrupted many of the environments and avenues of support that YP have relied on, impacting their mental health, and potentially continuing into their later lives (Samji et al., 2022).

Whilst the availability of mental health services for YP remains a significant barrier to those seeking support, several factors also exist which prevent YP from seeking help at the first onset of symptoms. A systematic review exploring the facilitators and barriers of help seeking in YP noted perceived stigma and embarrassment around mental health, problems recognising symptoms (poor mental health literacy), and a preference for self-reliance as the most significant barriers to help-seeking (Gulliver et al., 2010). This has been further corroborated in an updated review by Radez et al. (2021), who identified similar themes across a wider range of mental health difficulties, whilst also identifying a concern around confidentiality as a barrier for many YP.

In order to meet the increasingly prevalent needs of YP’s mental health difficulties, digital technologies have been considered as a viable means of increasing access to mental health support and providing evidence-based interventions to YP (Pennant et al., 2015). This is in line with the expanding ubiquity of smartphones in the daily lives of YP, with 90% of children owning a smartphone by the age of 11 (Ofcom, 2022) and a significant rise in YP’s smartphone usage since the coronavirus pandemic (Bergmann et al., 2022). Recent research exploring the use of smartphone apps to support YP’s mental health during the pandemic found that between one third to two thirds of respondents were utilising them (Pretorius & Coyle, 2021; Rideout et al., 2021).

The use of smartphones to provide mental health support through applications (‘apps’) is thought to be beneficial due to their ease of access and availability, particularly in permitting traditional geographical barriers to be overcome, providing anonymity and tailored content, and the potential lower cost to users and services (Kumar et al., 2018; Olff, 2015). It is also argued that apps may be particularly suited to YP who are more accepting of technology (Bakker et al., 2016), whilst overcoming the barriers that prevent YP from seeking mental health support (Radez et al., 2021), thus providing a pathway for YP who may not usually receive support through traditional routes.

While research exploring mental health apps (MH apps) has largely focused on adult populations, there has been a recent increase in studies exploring the impact of their use with YP. A recent meta-analysis reviewing randomised controlled trials of MH apps for YP (Leech et al., 2021) reported five of eleven studies showed benefits, particularly in relation to experiences of depression (Lee & Jung, 2018; Levin et al., 2022; Motter et al., 2019; O’Dea et al., 2020; Reid et al., 2011). The immediacy of the treatment gains was particularly noteworthy in this review, especially in contrast to conventional weekly therapy (Robinson et al., 2020).

The increasing potential of digital technologies has been recognised in healthcare settings with policies such as the UK NHS Long Term Plan (NHS England, 2019) outlining plans to implement digital technologies to support mental health needs. More specifically, the need to utilise the potential of digital technology, particularly apps, to support YP’s mental health was identified in a report by the Children and Young People’s Mental Health and Wellbeing Taskforce (Future in Mind, 2015). It was noted that the use of apps had the potential to ‘empower self-care, giving children and YP more control over their health and wellbeing and empowering their parents and carers’. Recommendations were made for government involvement in encouraging the creation of new apps and digital tools, and additionally determining whether there is a requirement for a research-based certification system to direct YP and parents towards high-quality options.

Although apps are evidently a promising tool to support YP's mental health needs, there exists a number of limitations in research and their use. Firstly, only a small number of MH apps are evidence-based, despite thousands existing in app stores. Reviews exploring this have suggested that about 3-5% incorporate evidence-based content, with an even smaller fraction having direct scientific evidence supporting their claims (Larsen et al., 2019; Marshall et al., 2019). As a result, YP may be exposed to apps with potentially ineffective or harmful interventions (Loucas et al., 2014), which may have the potential to negatively impacting their experience of mental health support and place additional barriers to seeking further support.

Additionally, a significant issue with usage and retention exists within MH apps. Wasil et al. (2020) found that a minority of MH apps account for the majority of downloads, whilst most people who download MH apps never open them and rarely continue using them for a significant period of time (Baumel et al., 2019). Research by Garrido et al. (2019) found similar low engagement and high rates in trial attrition with YP, suggesting that whilst MH apps may be a helpful way of providing access to mental health support and intervention, engagement acts as a barrier to sustained use.

A failure to consider users' perspectives of MH apps is thought to play a part in the issue of engagement and retention (Bucci, Schwannauer, et al., 2019). A recent review indicated that more than 70% of digital mental health interventions for YP did not report whether YP were involved in the design and development of the tools (Bergin et al., 2020), and as such may lead to poor uptake and engagement where perspectives of YP are not considered. Therefore, a gap exists between the drive to improve equity of access to mental health support to YP via apps, and an understanding of YP’s own perspectives and experiences of their needs from MH apps. Qualitatively considering the views of YP is particularly pertinent, as research is increasingly seeing them as active agents in developing and expressing their own realities (Kirk, 2007), and their developmental changes may lead to different needs and outcomes towards MH apps compared to adults.

A growing number of qualitative research studies explore this topic, and so, the aim of this work is to systematically review and synthesise the current qualitative literature that explores YP’s perspectives of mental health apps. The review focuses on standalone MH apps - that is, those that are not only used as an adjunct to therapy - to explore how MH apps used in isolation serve the needs of YP. This literature review employed the World Health Organization (WHO) characterization of YP as those ranging in age from 10 to 24 years (WHO, 2015). It is felt this review is appropriate due to the exponential rise of MH apps that are becoming available for YP and systemic drive towards the incorporation of digital tools in traditional mental health services.

Review aims:

1. What are the perspectives and experiences of young people towards mobile mental health applications to support their mental health?
2. What are young people’s perceived needs of mental health apps?

Materials & Methods

Search Strategy

In consultation with a Lancaster University subject librarian, five databases were selected for the search: PsycINFO, CINAHL, Medline, Scopus, and Web of Science. These databases were chosen for their focus on health sciences, psychology, and healthcare research. Additionally, Web of Science and Scopus include the ACM Digital and IEEE databases, which incorporates published articles related to technology. Google Scholar was additionally searched using broad terms relevant to mental health smartphone interventions (e.g., ‘qualitative’ AND ‘mental health’ AND ‘smartphone app’).

The search strategy aimed to identify qualitative research exploring YP’s perspectives on MH apps. As the term ‘young people’ is not used consistently across research, the search terms did not include terms related to YP to ensure this did not exclude relevant articles. As such the core concepts for the search terms were related to apps, mental health, and qualitative research.

The searches, which were conducted in July 2022, consisted of subject headings specific to each database, and free search terms (within the ‘abstract’ and ‘title’ fields). See appendix 1-C for detailed descriptions of the search terms for each database.

Inclusion/Exclusion Criteria

The literature search was conducted in July 2022 and produced a total of 4077 results. These were exported into Endnote, where 1647 duplicate records were removed. The remaining 2430 records were exported into Rayyan (Ouzzani et al., 2016), a web-based systematic review application, where the titles and abstracts were screened according to the inclusion/exclusion criteria.

The inclusion criteria were: (1) written in English; (2) involved qualitative methodology; (3) included the perspectives of YP (10-24 years old); (4) focused on apps to support mental health; (5) peer reviewed and conducted after 2010 (it was felt that smartphone apps were not widely used prior to this). Mixed methods papers were included if the qualitative data met the inclusion criteria.

The exclusion criteria were: (1) lack of YP’s voices; (2) studies that were not standalone MH app focused or examined a MH app intervention in conjunction with face-to-face therapy, as the focus was perspectives associated with app interventions alone, (3) any type of literature review, systematic review, and meta-synthesis, (4) qualitative research where YP's experiences could not be identified separate to that of others people's perspectives (e.g. clinicians, care givers), and (5) studies that explored YP's general views on MH apps without experience of using the apps. Study protocols, book chapters and dissertations were excluded, given the focus on peer-reviewed research which can be deficient in digital mental health interventions.

2370 records were removed following the initial screening process. The remaining 60 records were assessed for eligibility through examination of the full text. At this stage, 48 records were excluded, and 12 were included in the thematic synthesis. Reference lists and citations of papers identified were screened for any additional potentially relevant papers. This process of 'snowballing' (checking reference lists) and 'reverse snowballing' (tracking citations) (Sayers, 2008) did not identify any further relevant papers. Figure 1 presents a diagram of the search process.

Quality Appraisal

In order to assess the quality, strengths and weaknesses of the included articles, the Critical Appraisal Skills Programme (Munn et al., 2014) was utilised (Table 1). The CASP is a widely used tool in qualitative health research and has been endorsed by Cochrane (Noyes et al., 2018), providing credibility to its use. Additionally, the CASP tool was developed to be used with health-related research and was thus relevant for the context of this literature review. The tool comprises of 10 questions assessing whether studies include sufficient description and justification of the chosen data collection, sampling methodologies and analytical approach, in addition to appraising whether appropriate attention was given to the role of the researchers and ethics.

Using the rating system of Duggleby et al. (2010), the questions were assessed using a three-point scale. A strong score was given three points, a moderate score two points, and a weak score one point. All the papers were assessed independently by the lead researcher. A selection (50%) were cross-referenced by a second rater (trainee clinical psychologist). Overall scores did not vary by more than two points between raters, and discrepancies in ratings were resolved through discussion, leading to a consensus on final ratings.

It is recognised that a low score on the CASP may be indicative of the constraints related to the reporting guidelines of the journal, as opposed to poor quality research (Long et al., 2020). Therefore, no studies were excluded based on the CASP scores, which is also in accordance with guidelines for thematic synthesis (Thomas & Harden, 2008a). Nevertheless, the results informed a consideration of the strengths and weaknesses of each paper within the framework of their respective contributions in the ensuing thematic synthesis.

Thematic Synthesis Approach

Thematic synthesis was utilised as the approach to summarise and analyse the data from the various studies (Thomas & Harden, 2008a). Thematic synthesis is an inductive approach which involves the systematic coding of data and generation of descriptive and analytical themes across studies. It was felt that the approach was appropriate to generate higher-order themes of YP's perspectives of MH apps across qualitative research, which could be disparate in their methodologies (Thomas et al., 2012). The process outlined by Thomas and Harden (2008a) was followed: (1) line-by-line coding of the findings from primary studies, (2) development of descriptive themes, (3) generating analytical themes and 'going beyond' the content of the original studies. For an example of this analytic process see Appendix 1-D.

As recommended by Thomas and Harden (2008a), any text from results or findings sections were extracted, in addition to any findings reported in the abstract and discussion. Studies were read several times to develop familiarity with the data and to ensure all text relating to YP's perspectives of MH apps was identified.

Reflexivity

The researcher is a trainee clinical psychologist who has studied and has an interest in technology and computing. A research diary was maintained throughout the process to monitor the potential for bias. This served as a space for the researcher to reflect on their own responses to the material, as well as a prompt to ensure the themes were grounded in the data. Themes and analysis were discussed with supervisors.

Results

Characteristics of the selected studies

Twelve papers were identified for the thematic synthesis. Table 2 highlights the key characteristics of each paper. The papers were published between 2015 to 2022. Five papers used European samples (UK and Netherlands), four used Australasian samples (Australia and New Zealand), and three used North American samples (USA and Canada). Sample sizes ranged in age from ten to 33 years old. Of the 252 total participants, 142 were female, 57 male, and one person identified as non-binary. Two studies did not specify the genders of the participants at the interview stage of their mixed-methods design. The ages of the participants ranged from 10-31. Papers which included participants over the age of 25 were included in the synthesis if the majority of the participants were below the age of 25. Ethnicity was reported in five studies, with the majority of participants in these studies being white (52%-92%).

The included studies utilised either semi-structured interviews (eight studies) or focus groups (three studies, with one study employing both group and one-on-one interviews). Six studies used a mixed methods design. For these studies, only the qualitative data was extracted for the thematic synthesis. A number of qualitative analysis methods were used in the studies, including thematic analysis, qualitative content analysis, directed content analysis, template analysis, and iterative thematic approach. One study did not specify a specific qualitative methodology but stated "qualitative data transcribed and summarised into themes" (Adams et al., 2021). There were a range of research aims across the studies, but all related to YP's interactions with MH apps, as summarised in Table 2.

Thematic synthesis

Through descriptive and then analytical theme development, the findings were grouped into three broad themes: (1) Readily available bite-sized support; (2) Reclaiming agency; (3) Normalisation through connection and anonymity.

Theme One: Readily available bite-sized support

A key narrative within this theme was the benefit of apps' constant availability, including outside of therapy sessions, as a way of being connected to mental health support: "*It does make you feel safer in a way because you've got that choice of if I do need help then it's right there…which I thought was really good*" (Grist et al., 2018). Participants reported the convenience of immediate access to mental health resources through the apps as encouraging, whilst improving equity of access to mental health support: "*the whole idea is great, the fact that those are things that I've seen in therapy and that are there in clear format and can be used by everyone and that nobody has access to unless they've been through the mental health system is what we need for everyone*" (Cliffe et al., 2022). Additionally, during moments of crisis, when YP found their emotions to be “overwhelming”, they described difficulty accessing coping mechanisms which MH apps were able to direct them to, thus acting as a gateway to support: *“when that urge is so strong, that is like the dominant thought force, so like, anything just to make it easier to access your other coping strategies is super good”* (Cliffe et al., 2022).

The concept of providing support in the moment was also illustrated as helping YP put their fears into perspective, which may be difficult without external support: *“Normally I ask my friends if my fear is qualified in a certain situation. However, they are not always available, and I feel like a burden if I’m always talking about my problems. Asking an app for advice would be great*” (Van Dam et al., 2019). In addition, when YP used MH apps as an accessible way of accessing therapeutic tools such as ‘journalling’, as in the study by Mushquash et al. (2021), the self-monitoring opportunities helped YP to accurately self-monitor their feelings and thoughts, allowing them to gain perspective over time, and consider the “why behind their emotions”.

YP also reported using apps during crisis moments as a distraction technique from providing thoughts that may feel difficult to manage: “*helps to disengage yourself from those thoughts*” (Cliffe et al., 2022). Additionally, MH apps were seen as a tool to learn about mental health resources, and often they were only accessed when YP were experiencing poor mental health: “*Several participants opened the app only when they were experiencing anxiety, depression, or other symptoms of poor mental health*” (Wong et al., 2021). By placing the support within the context of the difficulty, some YP described the effect being that *“it makes you understand it, your feelings are something in you and it’s ok to have them”* (Moltrecht et al., 2021). These accounts highlight the value YP felt from MH apps in keeping them engaged with support at times when this would not normally be accessible to them.

On the other hand, a concern echoed by some participants was that YP may become reliant on MH apps for mental health support when in distress, particularly if the apps become a barrier to further help; for example, if they did not provide signposting or were not clear of the boundaries of the functionality and support they provide. This was highlighted by one young person: "*these apps, they can get unhealthy when people use them as a crutch and they get addicted to them instead of getting proper health, because their mental health will be deteriorating but they won't really care because they'll be like, "as long as I'm using this app I'm fine."* (Garrido et al., 2019).

When using MH apps in the moment, YP commonly described a preference for apps containing accessible, interactive content that is brief or 'bite-sized', allowing them to *"dip in and out… for two or three minutes at a time"* (Garrido et al., 2019). This was noted in five of the included papers (Cliffe et al., 2022; Garrido et al., 2019; Ribanszki et al., 2021; Serlachius et al., 2021; Werner-Seidler et al., 2017). 'Bite-sized' content was reported as reducing the burden of engaging with mental health support, in contrast to conventional mental health services which required "*time and effort to access, and long waits for scheduled sessions*" (Cliffe et al., 2022). Therefore, MH apps were seen as providing more opportunities for YP to access support throughout their day to day lives: "*The fact that the sessions were short made it fairly easy to come back to it whenever, like, if I'm on the bus or right before bed or wherever*" (Serlachius et al., 2021).

YP described a sense of feeling overburdened when MH apps required them to engage for long periods of time, particularly with information that is educational or didactic in nature: "*enthusiasm for the app's inclusion of several different types of interactive modules to present information, which they perceived to be more engaging for youth than standard approaches to education in clinical settings (e.g., pamphlets and explanations)*" (Adams et al., 2021). It was noted that engaging with 'bite-sized' content was supported by apps which provide unique and interactive features when YP were presented with information "*It keeps you using the app while otherwise some people may use it for a day and then forget about it*" (Werner-Seidler et al., 2017). As engagement with mental health support is a key issue for YP, reducing the burden of information that is provided appears to support participation with managing their difficulties.

Theme two: Reclaiming agency

The theme of reclaiming agency reflects the value YP hold for independence and control over how they manage their own mental health, which could be facilitated through MH apps. Many YP described MH apps as providing a platform to exercise autonomy by allowing them to take a more active role in managing their mental health. By affording YP opportunities for self-direction, personalisation, and choice, MH apps were felt to provide: "*a sense of control when it comes to mental health. Therefore, the fact that they were able to do something about their problems was in itself beneficial*" (Ribanszki et al., 2021). This was also supported by MH apps that offered YP choice through the variety of support strategies available, as described by a young person stating: "*I think it's good to have a variety of activities as there are different times when different ones are more suitable*" (Adams et al., 2021).

Another way YP were able to exhibit autonomy in their experience with mental health support was the ability to personalise their experience within MH apps. This aspect was noted in the majority of studies, possibly reflecting a belief that choosing the content and aesthetics of MH apps is a way of being in control of how they engage with mental health support. Personalisation of the content of apps was felt to reduce a burden of information overload and permit YP to feel in control of how they use the app: "*that's a very clear toolbox of things that you can do and you can adapt to suit yourself, which is incredible*" (Cliffe et al., 2022), and when they use the app: "*I like being able to like customise the time when apps give me notifications so I usually set them at like when I know, okay this is a time when I will actually have time to do It*" (Serlachius et al., 2021). In having choice and personalisation, YP were given the option to cater MH apps to their needs, which appears to have reduced the barrier to seeking support in times of distress.

Whilst MH apps were felt by YP to provide a sense of autonomy over how they managed their mental health, it was noted that apps which completely placed the onus on the young person to guide themselves through the support process were not well received, particularly if the young person was not familiar with the resources or had not received support from mental health professionals in the past. A number of studies described YP's appreciation for feedback or guidance. This is particularly relevant within the age group from 10-24 and thus the level of mental health knowledge and awareness of self-help tools or techniques can vary greatly. Ribanszki et al. (2021) reported that "*Participants preferred more guidance from the app, as without it—or without pre-existing knowledge of mental health and therapeutic techniques—some sections of the app proved too complex*".

It may be that feedback or guidance facilitated a collaborative approach to supporting the young person's mental health, where the app's guidance replaced the role that a professional may traditionally play in supporting the process. Serlachius et al. (2021) reported a participant's views: "*When you first like use the app, it would be useful to kind of have like a walkthrough because there's so much stuff from this evening that I've like not known is there, which would just be like, really helpful*". This was also reinforced by YP's perspectives on interactive features which provide in the moment feedback: "*It's like someone talking to you, explaining more about it, yeah which makes it feel like someone else is involved with you – it's not just you writing down your goals or whatever, so I liked that*" (Serlachius et al., 2021). As mental health literacy can vary significantly with YP, providing support through the journey of using a MH app appears to support engagement and value taken from such platforms.

Theme three: Normalisation through connection and anonymity

As mental health stigma, feelings of shame, and fear of judgment are important barriers impacting YP seeking mental health support, the opportunities that MH apps provide in relation to connecting with peers and accessing support through private anonymous pathways facilitated a sense of normalisation for many.

YP in the studies indicated that the use of MH apps to experience a sense of connection and to interact with peers is a valued aspect of their experience and beneficial to their mental health. The ability to recognise that other YP are using similar platforms: "*I like to know that other people are using the app as well…makes you feel like people know what you're going through*" (Duguid et al., 2022) and the capability to share experiences and receive support from peers were seen to validate and normalise YP's mental health challenges: "*When you know that someone else shares the same feelings as you, you could maybe be supporting each other*" (Garrido et al., 2019).

Some YP felt the knowledge and normalisation of mental health they gained from using MH apps could "Skill up young people to become messengers of mental health" to their peers, by sharing resources and services with others who needed mental health support: "*...I shared the app with my friends, and with some of my friends that have...something they don't want to talk with about to the family or relatives, so I introduced them [to] this app*" (Wong et al., 2021). These aspects were reported by YP as supporting their mental health and facilitating engagement with the apps. In the same study (Wong et al., 2021) YP felt that they could connect with peers thanks to unique app features such as "peer-contributed information about mental health services and resources". This also supported engagement with the app but simultaneously “increased motivation to access services” by permitting YP to read about their peers’ experiences. Through this process, MH apps for some YP may be considered to provide a connection for further support by reducing the stigma and fear of judgement around mental health: *“I think this is good for like a first step thing to get yourself to the place of actually being able to talk to a professional*” (Cliffe et al., 2022).

It was noted that mental health stigma can permeate into digital tools, as Werner-Seidler et al. (2017) state in their study: “*Participants discussed the idea of concealing the true purpose of the app from their peers”*. Despite this, YP felt that having control over their anonymity allows them to disclose their difficulties in a confidential manner, without the fear of stigma: “*I know a lot of teenagers who maybe wouldn’t want to go to a counsellor or would be ashamed of going to a counsellor and in this way you’re kind of helping yourself in your own way”* (Ribanszki et al., 2021).

MH apps provided a feeling of safeness to be open about MH difficulties without fearing judgement. Many YP talked about the idea of virtual anonymity providing a sense of safeness which mitigated feelings of shame by taking away the worry of being judged: “*Young people reported that BlueIce was a place where thoughts and feelings that were too difficult to share with others could be externalized*” (Grist et al., 2018). It was also noted that anonymity would allow YP to seek support from peers where they do not have such support from their face-to-face interactions, allowing their experiences to be normalised: “One participant said the following*: If it’s online then you’re more inclined to talk to other people because they don’t know where you are*” (Garrido et al., 2019).

Participants talked specifically about YP who experience social anxiety, for whom seeking face-to-face support may be anxiety provoking. They felt MH apps were helpful in allowing them to discuss difficulties that they may struggle to disclose in spaces such as therapy: “*It is useful for learning more personally...it will make them feel more comfortable answering truthfully and will be easier to answer in an app than in person, especially if you were anti-social or nervous*” (Adams et al., 2021).

Discussion

The aim of this systematic review was to synthesise the existing literature on YP’s experiences and perceived needs of MH apps. Following a systematic search of the literature, 12 studies were included in the review. Thematic synthesis of the findings enabled insights and understanding of this topic to be drawn, leading to three analytical themes being developed: (1) Readily available bite-sized support; (2) Reclaiming agency; (3) Normalisation through connection and anonymity. The themes will be discussed in relation to existing literature around MH apps and YP’s perceived needs of mental health support.

The first theme, ‘Readily available bite-sized support’, highlighted the process by which YP interact with MH apps, and how apps can be best served to benefit their mental health. YP shared a common experience of using apps as a quick fix to be used in the moment when mental health difficulties occur. This is in contrast to typical psychological interventions, which offer psychological assessments and formulations to understand the person’s difficulties, as well as providing therapeutic relationships, which may be necessary for treating complex mental health issues (McCabe & Priebe, 2004). Whilst YP express a preference for conventional mental health services as the first-choice treatment for mental health difficulties, they are also willing to use non-traditional services (Bradford & Rickwood, 2014). Additionally, YP with a mental health condition have indicated in previous research that they use multiple methods to support their mental health (Cohen et al., 2021). Therefore, accessing in the moment support following mental health difficulties could place MH apps as one part of a larger system of support. This is in line with models such as psychological first aid, which has shown to improve the experience of safety, connectedness and a sense of control among youth following traumatic incidents (Hermosilla et al., 2023).

Findings from this review align with previous research reporting YP's preference for engaging in interventions when they feel that they need it, and valuing apps that facilitate self-management (Hollis et al., 2017; Pretorius et al., 2019). Furthermore, accessible help and YP's ability to access their own preferred sources of support have previously been highlighted as aspects promoting their engagement with MH apps (Grist et al., 2017; Kenny et al., 2016). The finding of a preference for 'bite-sized' content is a novel outcome from this review, which is not noted in similar reviews with adult populations (Chan & Honey, 2022).

As such, if apps can be viewed as a standalone tool to provide brief and accessible MH support, they may also be relevant when considered through the lens of stepped care frameworks for mental health services, such as that in the UK (Kendrick & Pilling, 2012), where the provisions for MH support through the NHS are outlined. Based on the findings, it may be that MH apps could fit within Step 1, which involves recognition, assessment, active monitoring, and providing information on mental health issues. MH apps may also be integrated into Step 2, where YP can use the apps in the form of self-help to manage difficulties such as stress or worry, or as a supplement to brief psychological interventions for mild to moderate issues such as low mood or panic attacks. Independent app use has appeared to be helpful in the early stages of face-to-face therapy with adolescents; Gindidis et al. (2020) noted that this age group found it easier to share their experiences using a digital self-assessment tool.

The second theme of 'Reclaiming agency' describes how the self-help nature of apps provides YP with a feeling of control over how they manage their mental health. One aspect of this was being provided with choice and personalisation of the apps to suit the needs of the young person. This is particularly pertinent as autonomy is a barrier to seeking professional support (Wilson & Deane, 2012), meaning MH apps have the opportunity to provide support at a times when YP experience an increased desire for personal autonomy (Daddis, 2011). This highlights the significance of autonomy in supporting engagement with the apps and empowering YP to be in control of how they interact with MH support. Additionally, providing choice of MH apps as opposed to being prescribed them is likely to be important for YP, as it is reported that those receiving MH treatment because of external pressure (e.g. through family) have greater levels of attrition (De Haan et al., 2013), lead to less favourable outcomes (Ryan & Deci, 2008), and report lower levels of service satisfaction (Garland et al., 2000).

The self-determination theory (SDT) arguably provides a useful framework for considering YP's perceived need of autonomy within MH apps, which posits that a sense of autonomy is crucial in motivating individuals to overcome personal challenges (Ryan & Deci, 2000). SDT has been successfully applied to user needs, facilitators, and barriers for mental health technologies (Pretorius et al., 2019). Personalised healthcare supports this process by enhancing individual autonomy and capacity for self-managing an individual's mental health (Pieritz et al., 2021). Similarly, the literature on digital mental health interventions highlights the importance of personalisation. For instance, a content analysis of online reviews of apps for bipolar disorder revealed that users often expressed dissatisfaction with aspects that did not cater to individual needs and called for more customisation options (Nicholas et al., 2017).

The third theme encompassed a narrative that ran through the YP's experiences of MH apps, helping to normalise mental health difficulties through opportunities for connections to peers and additional support aided by privacy and anonymity. There was a common reflection of valuing the option to seek peer support, through forums, chat functions, or even peer generated recommendations for services and resources. It was noted that these spaces would connect YP to a helpful form of support, particularly when they were unclear on their experiences or found it difficult to discuss this with people currently in their lives. This was particularly appealing as YP often report that seeking support from parents or therapists can be stigmatising or unappealing, as they want to ‘fit in’ with their peers (Eccles & Roeser, 2011).

Having aspects of social support and feeling part of a community have both been cited as important to app users in prior research (Kenny et al., 2016). Moreover, these aspects may support YP to seek additional help, which is often promoted by encouragement and support from others (Gulliver et al., 2010). This links to research within social recovery that suggests personal storytelling - i.e., elucidating lived experiences - can lead to better mental health outcomes in YP (East et al., 2010). This is particularly evident during early teens when YP seek peer interaction and support, with growing independence from family (Wray-Lake et al., 2010). The findings also fit within the psychological need of ‘relatedness’ that forms part of the self-determination theory. The results of the current review suggest that peer support functions of some MH apps provide a sense of closeness, belonging and relatedness to others, which many YP valued. The framework may be helpful to consider how YP at different developmental age groups may have different motivations to engage with MH apps, and as such how apps could be adapted to meet their developmental needs.

For many YP, having the option to connect with professional support or to be signposted for further support was appreciated in certain apps. Confidentiality and trust in professionals can be a barrier for YP seeking help (Aguirre Velasco et al., 2020). This may stem from fear of stigma and judgement. However, it has also been noted that YP show greater help-seeking intentions towards trusted sources (Rickwood et al., 2005). Therefore, MH apps could help guide YP towards mental health services by normalising mental health experiences and hearing other peoples' experiences of services.

Within this theme, YP described positive responses to apps which provided options of anonymity. Mental health stigma can be a significant barrier to seeking treatment (Sickel et al., 2014), and has been found to deter YP disproportionately from disclosing mental health difficulties (S. Clement et al., 2015) due to shame, accessibility and self-sufficiency barriers in accessing mental health services (Gulliver et al., 2010; Salaheddin & Mason, 2016).

Therefore, the option to disclose mental health difficulties in an anonymous manner is likely to reduce the barrier for help-seeking in YP, whilst enhancing self-awareness and confidence (Grist et al., 2018). This mirrors research suggesting some individuals find it easier to express their feelings through an app (Berry et al., 2018). This is especially evident in relation to self-harm, as research has previously shown that self-harm is particularly difficult to discuss in comparison with other mental health difficulties (Stefanopoulou et al., 2020). Thus, the findings from this review highlight YP's perception that apps may offer an acceptable alternative for those unable or unwilling to seek face-to-face support.

Moreover, the idea of apps providing the option of anonymity was felt to be helpful for YP who may struggle with traditional mental health services due to social anxiety or concerns around talking to adults. It may be that YP's reports of apps being experienced as less 'intense' than face-to-face therapy is a positive attribute of MH apps (Hollis et al., 2017), which supports disclosure. However, there is a risk that reliance on anonymous and 'in the moment' support may be viewed as unhelpful by feeding into avoidance already prevalent in problems like social anxiety and depression, possibly preventing someone seeking the appropriate support. However, if MH apps are considered within the Stages of Change Model (SCM) (Prochaska & DiClemente, 1983), they could be part of the scaffolding for helping someone with a mild-moderate mental health problem to engage in support, enabling them to contemplate further support and act to access services or speak to someone they trust.

Limitations

Whilst there was some geographical variety in the participants in this review (across Europe, America, and Australasia), there is considerable homogeneity in the culture of the studies included in this review. From the studies that reported ethnicity data, participants were largely from white, western backgrounds - although one study did seek to obtain the voices of Māori youth. This likely reflects the limited amount of research focusing on YP and digital mental health tools produced in non-western regions. Therefore, caution and consideration must be taken in applying findings to specific cultural or geographical regions. Additionally, the sample largely consisted of female participants and studies did not often consider whether gender differences were present in YP's experiences or perceived needs of MH apps. This is despite gender differences being highlighted in the mental health trajectories of YP (Yoon et al., 2022).

Additionally, caution should be taken when interpreting and applying research that is conducted with YP, as there can be a propensity to view YP as a homogenous entity, whereas there can be considerable differences in the needs and experiences across developmental stages. Lastly, there are limitations to any thematic synthesis, given the nature of collating information from a variety of sources means that certain personal experiences are diluted or lost.

Clinical Implications

The current study has shown that YP's experiences and perceived needs of MH apps highlight their potential to meet the widening gap between mental health needs and availability of services.

Apps may serve mental health services through two avenues. Firstly, on a macro level, MH apps may fit within stepped care models of healthcare, where apps can be recommended to individuals on a preventative or self-help pathway, before YP advance to conventional services (Bower & Gilbody, 2005), or as a source of support whilst YP are on waiting lists for more intensive support. University students participating in previous research found this to be an acceptable source of support (Levin et al., 2022).

Within the context of clinical psychology, it may be useful for clinicians to consider where MH apps may best be served within the population of YP they work with. Whilst it was not the focus of this study, it was noted in several studies that YP felt MH apps can be used as an adjunct with therapy. This is particularly pertinent with YP identified by clinicians as likely to benefit from receiving ‘in the moment’ support and feedback outside of typical therapy sessions - for example, those experiencing low levels of self-harm thoughts and intentions as way of coping or distraction.

Additionally, it may be helpful for clinicians to consider which populations of YP may be under-represented within their services for whom MH apps could improve equity of access to healthcare. It is common for YP to struggle to engage with conventional therapy, particularly for those who may experience social anxiety or a mistrust of professionals/authority figures. YP from marginalised groups also face barriers to accessing conventional mental health support (Schueller et al., 2019), and thus, apps may serve as a platform to provide a safe space to validate and normalise their mental health experiences. This can act as a stepping-stone to feeling empowered as self-reliant partners within the therapeutic alliance when engaging in therapy. By raising awareness of these options in spaces such as schools, sports clubs and religious centres, YP may seek them out as an option for support.

At the same time, the increasing proliferation of MH apps demands better training of clinical psychologists in relation to e-literacy and knowledge of the benefits and pitfalls of app use. This is relevant as it has been noted that YP's engagement with smartphone apps can be mediated by their clinician's attitude towards apps (Hollis et al., 2017). Given the MH app market being saturated, many YP may rely on their clinician for guidance around what to use. Several organisations who review MH apps currently exist, which clinicians may access to identify MH apps that have gone through review procedures.

Recommendations for Future Research

There are several avenues for future research within this area. As noted above, the finding of a preference for 'bite-sized' content is a novel outcome which has not been specifically explored in research to date. Whilst this has been noted in the studies encompassing this review, it may be helpful to explore this preference in greater detail to understand the psychological underpinnings. Moreover, it may be beneficial to compare this preference in MH apps compared to other forms of self-help resources to identify whether this exists across self-help platforms or is unique to app use. This may occur through qualitative studies using methods such as focus groups, with different groups being provided with brief self-help resources or standard resources, and comparing the views expressed.

Another novel finding from the current review related to YP's preference for guidance, feedback and interactive features whilst learning to use MH apps. This may provide an insight into the poor engagement and adherence of MH apps as being related to a lack of or poor therapeutic alliance (TA) (Hollis et al., 2018). An exploration of the role of the therapeutic alliance in MH apps for YP in comparison to conventional therapy processes would be helpful to consider, particularly as the TA can have a significant impact on mental health outcomes, particularly as Bordin (1979) has argued that a TA can be formed between a person and change agent, that does not need to be human. A recent study by Tong et al. (2023) qualitatively explored the digital therapeutic alliance (DTA) with adults using MH apps highlighting aspects such as the need for self-initiative and openness to develop a DTA with a MH app. As such, a similar framework could be used to conduct this with YP. However, several factors require consideration. Firstly, the therapeutic alliance with YP can be impacted by the parents or caregiver relationship with the therapist, which is considered to play a part in therapeutic change (Karver et al., 2018), through motivation, expectations, and abilities of the parents. Secondly, YP express a preference for more informal TA relationships compared to adults (Everall & Paulson, 2002). Therefore, the parental involvement and formality of the MH app would need to be considered within this framework.

Lastly, the current review explored views and needs in relation to standalone MH apps, which can vary from the experience of using apps specifically designed as an adjunct to therapy. Future research may explore through quantitative and qualitative means whether differences exist between the use of these apps in a standalone versus adjunct format, in relation to their impact on mental health outcomes and qualitative experiences.

Conclusion

The current review synthesised YP's experiences and perceived needs of MH apps from twelve published qualitative research studies. Three themes were constructed: (1) Readily available bite-sized support; (2) Reclaiming agency; (3) Normalisation through connection and anonymity. The outcomes highlighted the value that MH apps may serve in meeting the increasing mental health needs of YP who are often left under-served by traditional mental health services. The review also emphasised the value of including the voice of the young person when adapting or developing services to meet their needs, and the need for clinicians and services to maintain up-to-date knowledge of emerging ways to support YP’s mental health in their contexts.

References

Adams, Z., Grant, M., Hupp, S., Scott, T., Feagans, A., Phillips, M. L., Bixler, K., Nallam, P. T., & la Putt, D. (2021). Acceptability of an mHealth App for Youth with Substance Use and Mental Health Needs: Iterative, Mixed Methods Design. *JMIR formative research*, *5*(12). https://doi.org/doi:

Aguirre Velasco, A., Cruz, I. S. S., Billings, J., Jimenez, M., & Rowe, S. (2020). What are the barriers, facilitators and interventions targeting help-seeking behaviours for common mental health problems in adolescents? A systematic review. *BMC Psychiatry*, *20*(1). https://doi.org/10.1186/s12888-020-02659-0

Bakker, D., Kazantzis, N., Rickwood, D., & Rickard, N. (2016). Mental Health Smartphone Apps: Review and Evidence-Based Recommendations for Future Developments. *JMIR Mental Health*, *3*(1), e7. https://doi.org/10.2196/mental.4984

Baumel, A., Muench, F., Edan, S., & Kane, J. M. (2019). Objective User Engagement With Mental Health Apps: Systematic Search and Panel-Based Usage Analysis. *Journal of Medical Internet Research*, *21*(9), e14567. https://doi.org/10.2196/14567

Bergin, A. D., Vallejos, E. P., Davies, E. B., Daley, D., Ford, T., Harold, G., Hetrick, S., Kidner, M., Long, Y., Merry, S., Morriss, R., Sayal, K., Sonuga-Barke, E., Robinson, J., Torous, J., & Hollis, C. (2020). Preventive digital mental health interventions for children and young people: a review of the design and reporting of research. *npj Digital Medicine*, *3*(1). https://doi.org/10.1038/s41746-020-00339-7

Bergmann, C., Dimitrova, N., Alaslani, K., Almohammadi, A., Alroqi, H., Aussems, S., Barokova, M., Davies, C., Gonzalez-Gomez, N., Gibson, S. P., Havron, N., Horowitz-Kraus, T., Kanero, J., Kartushina, N., Keller, C., Mayor, J., Mundry, R., Shinskey, J., & Mani, N. (2022). Young children's screen time during the first COVID-19 lockdown in 12 countries. *Scientific reports*, *12*(1). https://doi.org/10.1038/s41598-022-05840-5

Berry, K., Salter, A., Morris, R., James, S., & Bucci, S. (2018). Assessing Therapeutic Alliance in the Context of mHealth Interventions for Mental Health Problems: Development of the Mobile Agnew Relationship Measure (mARM) Questionnaire. *Journal of Medical Internet Research*, *20*(4). https://doi.org/10.2196/jmir.8252

Bower, P., & Gilbody, S. (2005). Stepped care in psychological therapies: access, effectiveness and efficiency. *British Journal of Psychiatry*, *186*(1), 11-17. https://doi.org/10.1192/bjp.186.1.11

Bradford, S., & Rickwood, D. (2014). Adolescent's preferred modes of delivery for mental health services. *Child and Adolescent Mental Health*, *19*(1), 39-45.

Bucci, S., Schwannauer, M., & Berry, N. (2019). The digital revolution and its impact on mental health care. *Psychology and Psychotherapy: Theory, Research and Practice*, *92*(2), 277-297. https://doi.org/10.1111/papt.12222

Chan, A. H. Y., & Honey, M. L. (2022). User perceptions of mobile digital apps for mental health: Acceptability and usability-An integrative review. *Journal of psychiatric and mental health nursing*, *29*(1), 147-168.

Clement, S., Schauman, O., Graham, T., Maggioni, F., Evans-Lacko, S., Bezborodovs, N., Morgan, C., Rüsch, N., Brown, J. S., & Thornicroft, G. (2015). What is the impact of mental health-related stigma on help-seeking? A systematic review of quantitative and qualitative studies. *Psychol Med*, *45*(1), 11-27. https://doi.org/10.1017/s0033291714000129

Cliffe, B., Stokes, Z., & Stallard, P. (2022). The Acceptability of a Smartphone App (BlueIce) for University Students Who Self-harm. *Archives of Suicide Research*. https://doi.org/doi:

Cohen, K. A., Stiles-Shields, C., Winquist, N., & Lattie, E. G. (2021). Traditional and nontraditional mental healthcare services: usage and preferences among adolescents and younger adults. *The journal of behavioral health services & research*, 1-17.

Collishaw, S. (2015). Annual Research Review: Secular trends in child and adolescent mental health. *Journal of Child Psychology and Psychiatry, 56*(3), 370-393. https://doi.org/10.1111/jcpp.12372

Daddis, C. (2011). Desire for Increased Autonomy and Adolescents' Perceptions of Peer Autonomy: "Everyone Else Can; Why Can't I?". *Child Development*, *82*(4), 1310-1326. https://doi.org/10.1111/j.1467-8624.2011.01587.x

Davies, S. (2014). Annual report of the chief medical officer: public mental health priorities: investing in the evidence.

De Haan, A. M., Boon, A. E., De Jong, J. T., Hoeve, M., & Vermeiren, R. R. (2013). A meta-analytic review on treatment dropout in child and adolescent outpatient mental health care. *Clinical Psychology Review*, *33*(5), 698-711.

Duggleby, W., Holtslander, L., Kylma, J., Duncan, V., Hammond, C., & Williams, A. (2010). Metasynthesis of the hope experience of family caregivers of persons with chronic illness. *Qualitative health research*, *20*(2), 148-158.

Duguid, T., Mansour, S., Garrido, S., & Chmiel, A. (2022). MoodyTunes: A Mixed Methods Usability Study of an App for Adolescent Mental Health. *PSYCHOMUSICOLOGY*. https://doi.org/doi:

East, L., Jackson, D., O'Brien, L., & Peters, K. (2010). Storytelling: an approach that can help to develop resilience. *Nurse researcher*, *17*(3).

Eccles, J. S., & Roeser, R. W. (2011). Schools as developmental contexts during adolescence. *Journal of Research on Adolescence, 21*(1), 225-241.

Garland, A. F., Aarons, G. A., Saltzman, M. D., & Kruse, M. I. (2000). Correlates of adolescents' satisfaction with mental health services. *Mental Health Services Research*, *2*, 127-139.

Garrido, S., Cheers, D., Boydell, K., Nguyen, Q. V., Schubert, E., Dunne, L., & Meade, T. (2019). Young People's Response to Six Smartphone Apps for Anxiety and Depression: Focus Group Study. *JMIR Mental Health*, *6*(10). https://doi.org/doi:

Gindidis, S., Stewart, S. E., & Roodenburg, J. (2020). Adolescent experiences of app-integrated therapy. *The Educational and Developmental Psychologist*, *37*(1), 20-29.

Graetz, B., Littlefield, L., Trinder, M., Dobia, B., Souter, M., Champion, C., Boucher, S., Killick-Moran, C., & Cummins, R. (2008). KidsMatter: A population health model to support student mental health and well-being in primary schools. *International Journal of Mental Health Promotion*, *10*(4), 13-20.

Grist, R., Porter, J., & Stallard, P. (2017). Mental health mobile apps for preadolescents and adolescents: A systematic review. *Journal of Medical Internet Research*, *19*(5), 153-166. https://doi.org/10.2196/jmir.7332

Grist, R., Porter, J., & Stallard, P. (2018). Acceptability, use, and safety of a mobile phone app (BlueIce) for young people who self-harm: Qualitative study of service users' experience [Article]. *JMIR Mental Health*, *5*(1), Article e16. https://doi.org/10.2196/mental.8779

Gulliver, A., Griffiths, K. M., & Christensen, H. (2010). Perceived barriers and facilitators to mental health help-seeking in young people: a systematic review. *BMC Psychiatry*, *10*(1), 113. https://doi.org/10.1186/1471-244x-10-113

Halsall, T., Manion, I., Iyer, S. N., Mathias, S., Purcell, R., & Henderson, J. (2019). Trends in mental health system transformation: Integrating youth services within the Canadian context. *Healthcare Management Forum*, *32*(2), 51-55. https://doi.org/10.1177/0840470418808815

Health and Social Care Committee. (2021). Children and young people's mental health - Health and Social Care Committee. *publications.parliament.uk*. https://publications.parliament.uk/pa/cm5802/cmselect/cmhealth/17/report.html

Hermosilla, S., Forthal, S., Sadowska, K., Magill, E. B., Watson, P., & Pike, K. M. (2023). We need to build the evidence: A systematic review of psychological first aid on mental health and well-being. *Journal of Traumatic Stress*, *36*(1), 5-16. https://doi.org/10.1002/jts.22888

Hollis, C., Falconer, C. J., Martin, J. L., Whittington, C., Stockton, S., Glazebrook, C., & Davies, E. B. (2017). Annual Research Review: Digital health interventions for children and young people with mental health problems—A systematic and meta-review. *Journal of Child Psychology and Psychiatry*, *58*(4), 474-503. https://doi.org/10.1111/jcpp.12663

Kendrick, T., & Pilling, S. (2012). Common mental health disorders — identification and pathways to care: NICE clinical guideline. *British Journal of General Practice*, *62*(594), 47-49. https://doi.org/10.3399/bjgp12x616481

Kenny, R., Dooley, B., & Fitzgerald, A. (2016). Developing mental health mobile apps: Exploring adolescents' perspectives. *Health Informatics Journal*, *22*(2), 265-275. https://doi.org/doi:

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, *62*(6), 593-602.

Kieling, C., Baker-Henningham, H., Belfer, M., Conti, G., Ertem, I., Omigbodun, O., Rohde, L. A., Srinath, S., Ulkuer, N., & Rahman, A. (2011). Child and adolescent mental health worldwide: evidence for action. *The Lancet*, *378*(9801), 1515-1525.

Kim-Cohen, J., Caspi, A., Moffitt, T. E., Harrington, H., Milne, B. J., & Poulton, R. (2003). Prior Juvenile Diagnoses in Adults With Mental Disorder. *Archives of General Psychiatry*, *60*(7), 709. https://doi.org/10.1001/archpsyc.60.7.709

Kirk, S. (2007). Methodological and ethical issues in conducting qualitative research with children and young people: A literature review. *International Journal of Nursing Studies*, *44*(7), 1250-1260.

Kourgiantakis, T., Markoulakis, R., Lee, E., Hussain, A., Lau, C., Ashcroft, R., Goldstein, A. L., Kodeeswaran, S., Williams, C. C., & Levitt, A. (2023). Access to mental health and addiction services for youth and their families in Ontario: perspectives of parents, youth, and service providers. *International Journal of Mental Health Systems*, *17*(1). https://doi.org/10.1186/s13033-023-00572-z

Kumar, S., Jones Bell, M., & Juusola, J. L. (2018). Mobile and traditional cognitive behavioral therapy programs for generalized anxiety disorder: A cost-effectiveness analysis. *PLOS ONE*, *13*(1), e0190554. https://doi.org/10.1371/journal.pone.0190554

Larsen, M. E., Huckvale, K., Nicholas, J., Torous, J., Birrell, L., Li, E., & Reda, B. (2019). Using science to sell apps: Evaluation of mental health app store quality claims. *npj Digital Medicine*, *2*(1), 18. https://doi.org/10.1038/s41746-019-0093-1

Lee, R. A., & Jung, M. E. (2018). Evaluation of an mhealth app (destressify) on university students' mental health: pilot trial. *JMIR Mental Health*, *5*(1), e8324.

Leech, T., Dorstyn, D., Taylor, A., & Li, W. (2021). Mental health apps for adolescents and young adults: A systematic review of randomised controlled trials. *Children and Youth Services Review*, *127*. https://doi.org/10.1016/j.childyouth.2021.106073

Leigh, S., & Flatt, S. (2015). App-based psychological interventions: friend or foe? *Evidence Based Mental Health*, *18*(4), 97-99. https://doi.org/10.1136/eb-2015-102203

Levin, M. E., Hicks, E. T., & Krafft, J. (2022). Pilot evaluation of the stop, breathe & think mindfulness app for student clients on a college counseling center waitlist. *Journal of American College Health*, *70*(1), 165-173. https://doi.org/10.1080/07448481.2020.1728281

Long, H. A., French, D. P., & Brooks, J. M. (2020). Optimising the value of the critical appraisal skills programme (CASP) tool for quality appraisal in qualitative evidence synthesis. *Research Methods in Medicine & Health Sciences*, *1*(1), 31-42.

Marshall, J. M., Dunstan, D. A., & Bartik, W. (2019). The Digital Psychiatrist: In Search of Evidence-Based Apps for Anxiety and Depression [Mini Review]. *Frontiers in Psychiatry*, *10*. https://doi.org/10.3389/fpsyt.2019.00831

McCabe, R., & Priebe, S. (2004). The therapeutic relationship in the treatment of severe mental illness: A review of methods and findings. *International Journal of Social Psychiatry*, *50*(2), 115-128.

Moltrecht, B., Patalay, P., Deighton, J., & Edbrooke-Childs, J. (2021). A School-Based Mobile App Intervention for Enhancing Emotion Regulation in Children: Exploratory Trial. *JMIR mHealth and uHealth*, *9*(7). https://doi.org/doi:

Motter, J. N., Grinberg, A., Lieberman, D. H., Iqnaibi, W. B., & Sneed, J. R. (2019). Computerized cognitive training in young adults with depressive symptoms: Effects on mood, cognition, and everyday functioning. *Journal of Affective Disorders*, *245*, 28-37.

Munn, Z., Moola, S., Riitano, D., & Lisy, K. (2014). The development of a critical appraisal tool for use in systematic reviews addressing questions of prevalence. *International journal of health policy and management*, *3*(3), 123.

Mushquash, A. R., Pearson, E. S., Waddington, K., MacIsaac, A., Mohammed, S., Grassia, E., Smith, S., & Wekerle, C. (2021). User Perspectives on a Resilience-Building App (JoyPop): Qualitative Study. *JMIR mHealth and uHealth*, *9*(7). https://doi.org/10.2196/28677

Newlove-Delgado, T., Williams, T., Robertson, K., McManus, S., Sadler, K., Vizard, T., Cartwright, C., Mathews, F., Norman, S., & Marcheselli, F. (2021). Mental Health of Children and Young People in England 2021-wave 2 follow up to the 2017 survey.

NHS England. (2016). *The Five Year Forward View for Mental Health*. https://www.england.nhs.uk/wp-content/uploads/2016/02/Mental-Health-Taskforce-FYFV-final.pdf

NHS England. (2019). *The NHS Long Term Plan* (NHS, Issue. https://www.longtermplan.nhs.uk/wp-content/uploads/2019/08/nhs-long-term-plan-version-1.2.pdf

Nicholas, J., Fogarty, A. S., Boydell, K., & Christensen, H. (2017). The Reviews Are in: A Qualitative Content Analysis of Consumer Perspectives on Apps for Bipolar Disorder. *Journal of Medical Internet Research*, *19*(4), e105. https://doi.org/10.2196/jmir.7273

Noyes, J., Booth, A., Flemming, K., Garside, R., Harden, A., Lewin, S., Pantoja, T., Hannes, K., Cargo, M., & Thomas, J. (2018). Cochrane Qualitative and Implementation Methods Group guidance series-paper 3: methods for assessing methodological limitations, data extraction and synthesis, and confidence in synthesized qualitative findings. *J Clin Epidemiol*, *97*, 49-58. https://doi.org/10.1016/j.jclinepi.2017.06.020

O'Dea, B., Han, J., Batterham, P. J., Achilles, M. R., Calear, A. L., Werner-Seidler, A., Parker, B., Shand, F., & Christensen, H. (2020). A randomised controlled trial of a relationship-focussed mobile phone application for improving adolescents' mental health. *Journal of Child Psychology and Psychiatry*, *61*(8), 899-913.

Ofcom. (2022). *Children and parents: Media use and attitudes report 2022* (OFCOM, Issue. https://www.ofcom.org.uk/__data/assets/pdf_file/0024/234609/childrens-media-use-and-attitudes-report-2022.pdf

Olff, M. (2015). Mobile mental health: a challenging research agenda. *European Journal of Psychotraumatology*, *6*(1), 27882. https://doi.org/10.3402/ejpt.v6.27882

Ouzzani, M., Hammady, H., Fedorowicz, Z., & Elmagarmid, A. (2016). Rayyan—a web and mobile app for systematic reviews. *Systematic Reviews*, *5*, 1-10.

Patalay, P., & Gage, S. H. (2019). Changes in millennial adolescent mental health and health-related behaviours over 10 years: a population cohort comparison study. *International journal of epidemiology*, *48*(5), 1650-1664.

Pennant, M. E., Loucas, C. E., Whittington, C., Creswell, C., Fonagy, P., Fuggle, P., Kelvin, R., Naqvi, S., Stockton, S., & Kendall, T. (2015). Computerised therapies for anxiety and depression in children and young people: A systematic review and meta-analysis. *Behaviour Research and Therapy*, *67*, 1-18. https://doi.org/10.1016/j.brat.2015.01.009

Pieritz, S., Khwaja, M., Faisal, A. A., & Matic, A. (2021, 2021-05-06). Personalised Recommendations in Mental Health Apps: The Impact of Autonomy and Data Sharing. Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems,

Polanczyk, G. V., Salum, G. A., Sugaya, L. S., Caye, A., & Rohde, L. A. (2015). Annual Research Review: A meta-analysis of the worldwide prevalence of mental disorders in children and adolescents. *Journal of Child Psychology and Psychiatry*, *56*(3), 345-365. https://doi.org/10.1111/jcpp.12381

Pretorius, C., Chambers, D., & Coyle, D. (2019). Young People's Online Help-Seeking and Mental Health Difficulties: Systematic Narrative Review. *Journal of Medical Internet Research*, *21*(11), e13873. https://doi.org/10.2196/13873

Pretorius, C., & Coyle, D. (2021). Young People's Use of Digital Tools to Support Their Mental Health During Covid-19 Restrictions. *Frontiers in digital health*, *3*, 763876.

Prochaska, J. O., & DiClemente, C. C. (1983). Stages and processes of self-change of smoking: toward an integrative model of change. *Journal of Consulting and Clinical Psychology*, *51*(3), 390.

Radez, J., Reardon, T., Creswell, C., Orchard, F., & Waite, P. (2021). Adolescents' perceived barriers and facilitators to seeking and accessing professional help for anxiety and depressive disorders: a qualitative interview study. *European Child & Adolescent Psychiatry*, 1-17.

Reid, S. C., Kauer, S. D., Hearps, S. J., Crooke, A. H., Khor, A. S., Sanci, L. A., & Patton, G. C. (2011). A mobile phone application for the assessment and management of youth mental health problems in primary care: a randomised controlled trial. *BMC family practice*, *12*, 1-14.

Ribanszki, R., Fonseca, J. A. S., Barnby, J. M., Jano, K., Osmani, F., Almasi, S., & Tsakanikos, E. (2021). Preferences for digital smartphone mental health apps among adolescents: Qualitative interview study. *JMIR formative research*, *5*(8). https://doi.org/doi:

Rickwood, D., Deane, F. P., Wilson, C. J., & Ciarrochi, J. (2005). Young people's help-seeking for mental health problems. *Australian e-Journal for the Advancement of Mental Health*, *4*(3), 218-251. https://doi.org/10.5172/jamh.4.3.218

Rideout, V., Fox, S., Peebles, A., & Robb, M. (2021). Coping with COVID-19: How young people use digital media to manage their mental health. San Francisco, CA: Common Sense and Hopelab. In.

Robinson, L., Kellett, S., & Delgadillo, J. (2020). Dose-response patterns in low and high intensity cognitive behavioral therapy for common mental health problems. *Depression and Anxiety*, *37*(3), 285-294.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68.

Ryan, R. M., & Deci, E. L. (2008). A self-determination theory approach to psychotherapy: The motivational basis for effective change. *Canadian Psychology/Psychologie canadienne*, *49*(3), 186.

Salaheddin, K., & Mason, B. (2016). Identifying barriers to mental health help-seeking among young adults in the UK: a cross-sectional survey. *Br J Gen Pract*, *66*(651), e686-692. https://doi.org/10.3399/bjgp16X687313

Samji, H., Wu, J., Ladak, A., Vossen, C., Stewart, E., Dove, N., Long, D., & Snell, G. (2022). Review: Mental health impacts of the COVID-19 pandemic on children and youth – a systematic review. *Child and Adolescent Mental Health*, *27*(2), 173-189. https://doi.org/10.1111/camh.12501

Sayers, A. (2008). Tips and tricks in performing a systematic review. *British Journal of General Practice*, *58*(547), 136-136.

Schueller, S. M., Hunter, J. F., Figueroa, C., & Aguilera, A. (2019). Use of Digital Mental Health for Marginalized and Underserved Populations. *Current Treatment Options in Psychiatry*, *6*(3), 243-255. https://doi.org/10.1007/s40501-019-00181-z

Serlachius, A., Boggiss, A., Lim, D., Schache, K., Wallace-Boyd, K., Brenton-Peters, J., Buttenshaw, E., Chadd, S., Cavadino, A., Cao, N., Morunga, E., & Thabrew, H. (2021). Pilot study of a well-being app to support New Zealand young people during the COVID-19 pandemic. *INTERNET INTERVENTIONS-THE APPLICATION OF*

INFORMATION TECHNOLOGY IN MENTAL AND BEHAVIOURAL HEALTH, *26*. https://doi.org/10.1016/j.invent.2021.100464

Shim, R., Szilagyi, M., & Perrin, J. M. (2022). Epidemic Rates of Child and Adolescent Mental Health Disorders Require an Urgent Response. *Pediatrics*, *149*(5). https://doi.org/10.1542/peds.2022-056611

Sickel, A. E., Seacat, J. D., & Nabors, N. A. (2014). Mental health stigma update: A review of consequences. *Advances in mental health*, *12*(3), 202-215.

Stefanopoulou, E., Hogarth, H., Taylor, M., Russell-Haines, K., Lewis, D., & Larkin, J. (2020). Are digital interventions effective in reducing suicidal ideation and self-harm? A systematic review. *J Ment Health*, *29*(2), 207-216. https://doi.org/10.1080/09638237.2020.1714009

Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Medical Research Methodology*, *8*(1), 1-10.

Thomas, J., Harden, A., & Newman, M. (2012). Synthesis: combining results systematically and appropriately. In. Sage Publications.

Tong, F., Lederman, R., D'Alfonso, S., Berry, K., & Bucci, S. (2023). Conceptualizing the digital therapeutic alliance in the context of fully automated mental health apps: A thematic analysis. *Clinical Psychology & Psychotherapy*. https://doi.org/10.1002/cpp.2851

Van Dam, L., Rietstra, S., Van der Drift, E., Stams, G., Van der Mei, R., Mahfoud, M., Popma, A., Schlossberg, E., Pentl, , A., & Reid, T. G. (2019). Can an Emoji a Day Keep the Doctor Away? An Explorative Mixed-Methods Feasibility Study to Develop a Self-Help App for Youth With Mental Health Problems. *Frontiers in Psychiatry*, *10*. https://doi.org/doi:

Wasil, A. R., Gillespie, S., Patel, R., Petre, A., Venturo-Conerly, K. E., Shingleton, R. M., Weisz, J. R., & DeRubeis, R. J. (2020). Reassessing evidence-based content in popular smartphone apps for depression and anxiety: Developing and applying user-adjusted analyses. *Journal of Consulting and Clinical Psychology, 88*(11), 983.

Werner-Seidler, A., O'Dea, B., Sh, , F., Johnston, L., Frayne, A., Fogarty, A. S., & Christensen, H. (2017). A Smartphone App for Adolescents With Sleep Disturbance: Development of the Sleep Ninja. *JMIR Mental Health*, *4*(3). https://doi.org/doi:

Wilson, C. J., & Deane, F. P. (2012). Brief report: Need for autonomy and other perceived barriers relating to adolescents' intentions to seek professional mental health care. *Journal of Adolescence*, *35*(1), 233-237. https://doi.org/10.1016/j.adolescence.2010.06.011

Wong, H. W., Lo, B., Shi, J., Hollenberg, E., Abi-Jaoude, A., Johnson, A., Chaim, G., Cleverley, K., Henderson, J., Levinson, A., Robb, J., Voineskos, A., & Wiljer, D. (2021). Postsecondary Student Engagement With a Mental Health App and Online Platform (Thought Spot): Qualitative Study of User Experience. *JMIR Mental Health*, *8*(4). https://doi.org/doi:

Wray-Lake, L., Crouter, A. C., & McHale, S. M. (2010). Developmental patterns in decision-making autonomy across middle childhood and adolescence: European American parents' perspectives. *Child Development*, *81*(2), 636-651.

Yoon, Y., Eisenstadt, M., Lereya, S. T., & Deighton, J. (2022). Gender difference in the change of adolescents' mental health and subjective wellbeing trajectories. *European Child & Adolescent Psychiatry*, 1-10.

Literature Review Tables and Figures

Figure 1

PRISMA Flowchart of the Identification and Screening of Studies for the Review

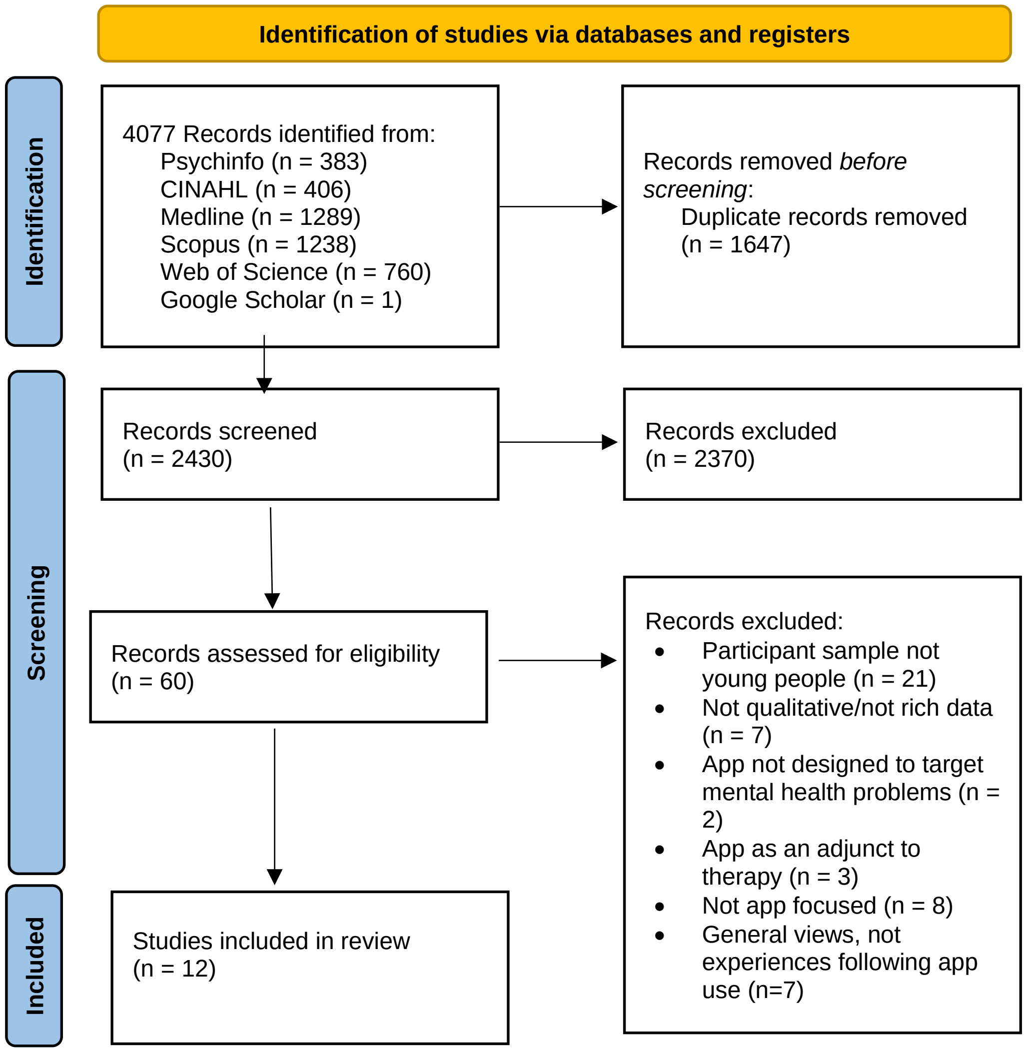

Table 1

Results of Critical Appraisal using CASP Qualitative Criteria (Total= /30)

	CASP tool quality criteria										
Paper	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Total Score**
Adams et al. (2021)	3	3	3	3	3	2	2	2	3	3	27
Cliffe, Stokes & Stallard (2022)	3	3	3	3	3	2	2	3	3	3	28
Duguid et al. (2022)	3	3	3	3	3	1	2	3	3	3	27
Garrido et al. (2019)	3	3	3	3	3	2	3	2	3	2	27
Grist, Porter & Stallard (2018)	3	3	3	3	3	2	3	2	2	2	26
Moltrecht et al. (2021)	3	3	3	3	2	1	2	2	2	2	23
Mushquash et al. (2021)	3	3	3	2	1	1	3	3	3	3	25
Ribanszki et al. (2021)	3	3	3	3	3	1	3	2	3	3	27
Serlachius et al. (2021)	3	3	3	3	3	2	2	2	3	3	27
Van Dam et al. (2019)	3	3	3	3	2	2	2	2	3	3	26
Werner-Seidler et al. (2017)	3	3	3	3	3	2	2	3	3	3	28
Wong et al. (2021)	3	3	3	3	3	2	2	3	3	3	28

Key for quality criteria:

1 - Was there a clear statement of the aims of the research?

2 - Is a qualitative methodology appropriate?

3 - Was the research design appropriate to address the aims of the research?

4 - Was the recruitment strategy appropriate to the aims of the research?

5 - Was the data collected in a way that addressed the research issue?

6 - Has the relationship between researcher and participants been adequately considered?

7 - Have ethical issues been taken into consideration?

8 - Was the data analysis sufficiently rigorous?

9 - Is there a clear statement of findings?

10 - How valuable is the research?

Key for scores:

1 – Weak: little to no evidence of the quality criterion being met

2 – Moderate: evidence for the quality criterion, but not fully explored

3 – Strong: clear and elaborate evidence that the quality criterion had been met

Table 2

Characteristics of papers included in the review

Paper	Location	Research Aims	Methodology	Sample	Data Collection
(Adams et al., 2021)	USA	To explore initial user testing of a mobile app for adolescents with substance use and mental health concerns	Does not specify qualitative methodology but states qualitative data transcribed and summarised into themes	20 adolescents (aged 14-17)	Semi-structured interviews - using think-aloud technique
(Cliffe et al., 2022)	UK	To explore the acceptability of BlueIce with students with experience of self-harm.	Inductive qualitative content analysis	25 university students (aged 18-31; majority below 25)	Semi-structured interviews
(Duguid et al., 2022)	Australia	To evaluate the usability and appeal of MoodyTunes app.	Thematic Analysis (part of mixed methods design)	20 adolescents (aged 12-25)	Semi-structured interview
(Garrido et al., 2019)	Australia	To investigate young people's response to six apps for mental health and to identify features that young people like and dislike in such apps.	Thematic Analysis - General inductive approach following a realist paradigm guided data analysis	23 young people (aged 13-25)	Focus groups
(Grist et al., 2018)	UK	To explore the acceptability, use, and safety of BlueIce, a mobile phone app for young people who self-harm and attending mental health services.	Thematic Analysis	33 young people (aged 12-17)	Semi-structured interview
(Moltrecht et al., 2021)	UK	To explore and evaluate the use of an emotion regulation app for children	Thematic Analysis	19 young people (aged 10-12)	Semi-structured interview

Paper	**Location**	**Research Aims**	**Methodology**	**Sample**	**Data Collection**
(Mushquash et al., 2021)	Canada	To explore users' experiences with the JoyPop app and their perspectives on its utility	Qualitative Content Analysis	30 young people (aged 16-29; majority 19 years or younger)	Group and one-on-one semi-structured interviews
(Ribanszki et al., 2021)	UK	To explore barriers to engagement and to gather feedback on the current elements of app design regarding user experience, user interface and content.	Thematic Analysis	13 young people (aged 11-18)	Semi-structured interview
(Serlachius et al., 2021)	New Zealand	To explore the usability and cultural acceptability of the Whitu app	Directed Content Analysis	21 young people (aged 16-28; majority under 25)	Focus groups
(Van Dam et al., 2019)	Netherlands	To explore their experiences and perspectives on the potential advantages and disadvantages of an emoji-driven app.	Iterative thematic approach - Boeije (2005)	10 young people (aged 16-22)	Semi-structured interview
(Werner-Seidler et al., 2017)	Australia	To explore young people's experiences of a smartphone app that delivers CBT-I to young people to improve sleep	Thematic Analysis	21 young people (aged 12-16)	Focus groups
(Wong et al., 2021)	Canada	To explore postsecondary students' attitudes and behaviours when using Thought Spot, to understand factors related to engagement and user experience	Template Analysis - Brooks et al. (2015)	17 young people (aged 20-25)	Semi-structured interview

Table 3

Characteristics of MH apps used in each literature review

Paper	App(s) Used	Nature of App(s)	Clinical Problem Addressed
(Adams et al., 2021)	Bright Path	Educational content, interactive games and activities	Substance use and mental health disorders in youth.
(Cliffe et al., 2022)	BlueIce	Mood diary, toolbox of techniques to reduce distress	Self-harm
(Duguid et al., 2022)	Moodytunes	CBT based techniques to self-manage mood difficulties through music	Low mood, depression
(Garrido et al., 2019)	Mood Mission; Music eScape; Pacifica; Mind Shift; Headspace; What's Up?	Variety of tools dependent on app	Depression, Anxiety, Stress, Distress
(Grist et al., 2018)	BlueIce	Mood diary, toolbox of techniques to reduce distress	Self-harm
(Moltrecht et al., 2021)	eda	Educational content, interactive games and activities	Emotional regulation
(Mushquash et al., 2021)	JoyPop	Mood journal, breathing exercises	Resilience building
(Ribanszki et al., 2021)	Thrive	CBT based guided mindfulness strategies, mood journal	Stress reduction
(Serlachius et al., 2021)	Whitu	CBT and positive psychology techniques	Mental wellbeing, depression, anxiety

Paper	App(s) Used	Nature of App(s)	Clinical Problem Addressed
(Van Dam et al., 2019)	G-Moji	Mood journal using emojis	Mental health assessment
(Werner-Seidler et al., 2017)	Sleep Ninja	CBT-I based psychoeducation, sleep strategies	Sleep issues
(Wong et al., 2021)	Thought Spot	Signposting to mental health resources and services; Mood journal	Variety of mental health difficulties

Appendix 1-A: Author Guidelines of Chosen Journal for Submission

Psychology and Psychotherapy: Theory Research and Practice

PAPTRAP AUTHOR GUIDELINES

Sections

1. SUBMISSION

Authors should kindly note that submission implies that the content has not been published or submitted for publication elsewhere except as a brief abstract in the proceedings of a scientific meeting or symposium.

New submissions should be made via the **Research Exchange submission portal**. You may check the status of your submission at any time by logging on to submission.wiley.com and clicking the "My Submissions" button. For technical help with the submission system, please review our FAQs or contact **submissionhelp@wiley.com**.

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This journal will consider for review articles previously available as preprints. Authors may also post the submitted version of a manuscript to a preprint server at any time. Authors are requested to update any pre-publication versions with a link to the final published article.

2. AIMS AND SCOPE

Psychology and Psychotherapy: Theory Research and Practice (formerly The British Journal of Medical Psychology) is an international scientific journal with a focus on the psychological and social processes that underlie the development and improvement of psychological problems and mental wellbeing, including:

- theoretical and research development in the understanding of cognitive and emotional factors in psychological problems;
- behaviour and relationships; vulnerability to, adjustment to, assessment of, and recovery (assisted or otherwise) from psychological distresses;
- psychological therapies, including digital therapies, with a focus on understanding the processes which affect outcomes where mental health is concerned.

The journal places particular emphasis on the importance of theoretical advancement and we request that authors frame their empirical analysis in a wider theoretical context and present the theoretical interpretations of empirical findings.

We welcome submissions from mental health professionals and researchers from all relevant professional backgrounds both within the UK and internationally.

In addition to more traditional, empirical, clinical research we welcome the submission of

- systematic reviews following replicable protocols and established methods of synthesis
- qualitative and other research which applies rigorous methods
- high quality analogue studies where the findings have direct relevance to clinical models or practice.

Clinical or case studies will not normally be considered except where they illustrate particularly unusual forms of psychopathology or innovative forms of therapy and meet scientific criteria through appropriate use of single case experimental designs.

All papers published in *Psychology and Psychotherapy: Theory, Research and Practice* are eligible for Panel A: Psychology, Psychiatry and Neuroscience in the Research Excellence Framework (REF).

3. MANUSCRIPT CATEGORIES AND REQUIREMENTS

- Articles should adhere to the stated word limit for the particular article type. The word limit excludes the abstract, reference list, tables and figures, but includes appendices.

Word limits for specific article types are as follows:

- Research articles: 5000 words
- Qualitative papers: 6000 words
- Review papers: 6000 words
- Special Issue papers: 5000 words

In exceptional cases the Editor retains discretion to publish papers beyond this length where the clear and concise expression of the scientific content requires greater length (e.g., explanation of a new theory or a substantially new method). Authors must contact the Editor prior to submission in such a case.

Please refer to the separate guidelines for **Registered Reports**.

All systematic reviews must be pre-registered and an anonymous link to the pre-registration must be provided in the main document, so that it is available to reviewers. Systematic reviews without pre-registration details will be returned to the authors at submission.

Brief-Report COVID-19

For a limited time, the *Psychology and Psychotherapy: Theory, Research and Practice* are accepting brief-reports on the topic of Novel Coronavirus (COVID-19) in line with the journal’s main aims and scope (outlined above). Brief reports should not exceed 2000 words and should have no more than two tables or figures. Abstracts can be either structured (according to standard journal guidance) or unstructured but should not exceed 200 words. Any papers that are over the word limits will be returned to the authors. Appendices are included in the word limit; however online supporting information is not included.

4. PREPARING THE SUBMISSION

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Before you submit, you will need:

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- The author's institutional affiliations where the work was conducted, with a footnote for the author's present address if different from where the work was conducted;
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- Keywords;
- Data availability statement (see Data Sharing and Data Accessibility Policy);
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Acknowledgments

Contributions from anyone who does not meet the criteria for authorship should be listed, with permission from the contributor, in an Acknowledgments section. Financial and material support should also be mentioned. Thanks to anonymous reviewers are not appropriate.

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All articles must include Practitioner Points – these are 2-4 bullet point with the heading 'Practitioner Points'. They should briefly and clearly outline the relevance of your research to professional practice.

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As papers are double-anonymous peer reviewed, the main text file should not include any information that might identify the authors.

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If submitting your manuscript file in LaTex format via Research Exchange, select the file designation "Main Document – LaTeX .tex File" on upload. When submitting a LaTex Main Document, you must also provide a PDF version of the manuscript for Peer Review. Please upload this file as "Main Document - LaTeX PDF." All supporting files that are referred to in the LaTex Main Document should be uploaded as a "LaTeX Supplementary File."

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Your main document file should include:

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- Abstract structured (intro/methods/results/conclusion);
- Up to seven keywords;
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- Main body: formatted as introduction, materials & methods, results, discussion, conclusion;
- References;
- Tables (each table complete with title and footnotes);
- Figure legends: Legends should be supplied as a complete list in the text. Figures should be uploaded as separate files (see below);
- Statement of Contribution.

Supporting information should be supplied as separate files. Tables and figures can be included at the end of the main document or attached as separate files but they must be mentioned in the text.

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Tables should be self-contained and complement, not duplicate, information contained in the text. They should be supplied as editable files, not pasted as images. Legends should be concise but comprehensive – the table, legend, and footnotes must be understandable without reference to the text. All abbreviations must be defined in footnotes. Footnote symbols: †, ‡, §, ¶, should be used (in that order) and *, **, *** should be reserved for P-values. Statistical measures such as SD or SEM should be identified in the headings.

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Appendix 1-B: Practitioner Points for Submission to Journal

Practitioner Points:

- Young people value brief in the moment exercises to manage their mental health through apps.
- Mental health apps support young people to experience a sense of autonomy over how they manage their mental health.
- Building connections with peers and using mental health apps privately provide a bridge to validating and normalising mental health.
- Mental health apps provide a helpful stepping stone to seeking further support.

Appendix 1-C: Detailed Search Terms

PsychINFO	((DE "Qualitative Methods" OR DE "Focus Group" OR DE "Grounded Theory" OR DE "Interpretative Phenomenological Analysis" OR DE "Narrative Analysis" OR DE "Semi-Structured Interview" OR DE "Thematic Analysis")) OR TI ((“qualitative” OR “interview*” OR "focus group" OR “questiona*”)) OR AB ((“qualitative” OR “interview*” OR "focus group" OR “questiona*”)) AND ((DE "Mental Health" OR DE "Mental Disorders" OR “Well Being”)) OR TI (((mental OR psyc*) N3 (health* OR disord* OR illness*)) OR Wellbeing*) OR AB (((mental OR psyc*) N3 (health* OR disord* OR illness*)) OR Wellbeing*)) AND ((DE "Mobile Applications" OR DE "Mobile Phones" OR DE "Smartphones" OR DE "Mobile Technology" OR DE "Mobile Health") OR TI ("smartphone app*" or "mobile app*" or "app" or "apps") OR AB ("smartphone app*" or "mobile app*" or "app" or "apps"))
CINAHL	((MH "Qualitative Studies") OR (MH "Focus Groups") OR (MH "Grounded Theory") OR (MH "Semi-Structured Interview") OR (MH "Thematic Analysis")) OR TI ((“qualitative” OR “interview*” OR "focus group" OR “questiona*”)) OR AB ((“qualitative” OR “interview*” OR "focus group" OR “questiona*”)) ((MH "Mental Health") OR (MH "Mental Disorders") OR (MH "Psychological Well-Being")) OR TI (((mental OR psyc*) N3 (health* OR disord* OR illness*)) OR Wellbeing*)) OR AB (((mental OR psyc*) N3 (health* OR disord* OR illness*)) OR Wellbeing*)) ((MH "Mobile Applications") OR (MH "Smartphone") OR (MH "Cellular Phone") OR (MH "Telehealth")) OR TI (("smartphone app*" or "mobile app*" or "app" or "apps")) OR AB (("smartphone app*" or "mobile app*" or "app" or "apps"))
Medline	((MH "Qualitative Research") OR (MH "Grounded Theory") OR (MH "Focus Groups") OR (MH "Interviews as Topic")) OR TI ((“qualitative” OR “interview*” OR "focus group" OR “questiona*”)) OR AB ((“qualitative” OR “interview*” OR "focus group" OR “questiona*”)) ((MH "Mental Health") OR (MH "Mental Disorders+")) OR TI (((mental OR psyc*) N3 (health* OR disord* OR illness*)) OR Wellbeing*)) OR AB (((mental OR psyc*) N3 (health* OR disord* OR illness*)) OR Wellbeing*)) ((MH "Mobile Applications") OR (MH "Cell Phone") OR (MH "Smartphone") OR (MH "Telemedicine")) OR TI (("smartphone app*" or "mobile app*" or "app" or "apps")) OR AB (("smartphone app*" or "mobile app*" or "app" or "apps"))
SCOPUS	(TITLE-ABS-KEY ("Qualitative Methods" OR "Focus Group" OR "Grounded Theory" OR "Interpretative Phenomenological Analysis" OR "Narrative Analysis" OR "Semi-Structured Interview" OR "Thematic Analysis" OR "qualitative" OR "interview*" OR "focus group" OR

	"questiona*") AND TITLE-ABS-KEY ("mental health" OR "mental disorder" OR "well being") AND TITLE-ABS-KEY ("Mobile Applications" OR "Mobile Phones" OR "Smartphones" OR "Mobile Technology" OR "Mobile Health" OR "smartphone app*" OR "mobile app*" OR "app" OR "apps"))
Web of Science	"app" OR "apps" (Topic) or "Mobile Applications" OR "Mobile Phones" OR "Smartphones" OR "Mobile Technology" OR "Mobile Health" OR "smartphone app*" OR "mobile app*" OR "app" OR "apps" (Title) or "Mobile Applications" OR "Mobile Phones" OR "Smartphones" OR "Mobile Technology" OR "Mobile Health" OR "smartphone app*" OR "mobile app*" OR "app" OR "apps" (Abstract) AND "Qualitative Methods" OR "Focus Group" OR "Grounded Theory" OR "Interpretative Phenomenological Analysis" OR "Narrative Analysis" OR "Semi-Structured Interview" OR "Thematic Analysis" (Topic) or "qualitative" OR "interview*" OR "focus group" OR "questiona*" (Title) or "qualitative" OR "interview*" OR "focus group" OR "questiona*" (Abstract) AND "mental health" OR "mental disorder" OR "mental illness" OR "well being" (Topic) or "mental health" OR "mental disorder" OR "mental illness" OR "well being" (Title) or "mental health" OR "mental disorder" OR "mental illness" OR "well being" (Abstract)

Appendix 1-D: Analysis Trail for Theme 1

Analysis trail example for Theme 1: Readily available bite-sized support

Analytic Theme	Descriptive Themes	Codes	Quotes
Readily available bite-sized support	Preference for bite-sized content	Interactivity supports engagement Brief exercises support engagement Ease of use Cognitive ease Reduced burden	"Others pointed out the importance of the content being easy to absorb…. In fact, as stated by another participant in that group, an overly complex design could add to a user's sense of anxiety" "Some apps that can be really busy can be really anxious. Especially a mental health app, being really clean cut it's just calming and good to look at it and it just pleases you. It kind of clears you. It's like, "Everything's in order and it's great." " The fact that the sessions were short made it fairly easy to come back to it whenever, like, if I'm on the bus or right before bed or wherever" " enthusiasm for the app's inclusion of several different types of interactive modules to present information, which they perceived to be more engaging for youth than standard approaches to education in clinical settings" "As 1 participant said: I think it's nice to have apps that don't require you spending a lot of time on them in one go. You can just dip in and out of them for two or three minutes at a time" "I didn't want to go on the app for a bit because I just thought 'this is going to take ages now, as if I knew I could do one that literally lasts like 4/5 minutes then I'd just click on that". "Participants indicated that the app should be delivered flexibly. For example, one young person suggested that the user should be able to complete the content components (training sessions) in small chunks rather than all in one go". "This ease of use was valued by participants as they did not want to add further stress to their situation: It was really easy to get into and start using if you know what I mean, it

			was like once you knew how to use it, it was really easy”
	Using apps in the moment	Distraction techniques Gaining perspective Fitting into lifestyle Crisis support Relief	“Most of the functions identified related to support that could be provided in crisis moments, for example, a distraction to help ‘disengage yourself from those thought’”. “When you’re in that moment it’s so overwhelming so it’s hard to think outside of it, so I think if you had something just in front of you I think you’d be more likely – more motivated to disengage from it” “the default perception was that it should be used as a quick check-in tool or quick intervention when one is anxious or needs immediate support” “ Most of the functions identified related to support that could be provided in crisis moments, for example, a distraction to help ‘disengage yourself from those thought’”
	Accessibility of mental health support outside of therapy	Familiarity with technology Simplicity of smartphones Immediacy of access Support without therapy Convenience and flexibility	“the whole idea is great, the fact that those are things that I’ve seen in therapy and that are there in clear format and can be used by everyone and that nobody has access to unless they’ve been through the mental health system is what we need or everyone” “Specific features of BlueIce were also praised for being more accessible than therapy tasks, such as mood diaries, due to simplicity, increased ease, and immediacy of access wherever you are as “everyone has a phone nowadays, and has their phone in front of them” “A lot of times people who are really depressed just don’t want to leave the house. They can’t be bothered filling up their Opal card [a public transport ticket used in Australia], or catching a bus is too much effort, or they panic. So, there should be a way to access those things within your home”. “ There were times when I’d be like on my phone and like, bored and stressed out, and just looking for a distraction and then I was like, “Ok, this was something I could do right now.” “An app is at least something if you don’t have any support at all. It is not much, definitely not a human, but it might help.”

Section 2: Research Paper

The perspectives of people living with OCD on using mobile applications to support their mental health

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Doctorate in Clinical Psychology

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Abstract

Objectives: People living with Obsessive Compulsive Disorder (OCD) face internal and systemic barriers to accessing mental health (MH) support, leading to long periods of untreated illness. One avenue of improving equity of access to MH support and improving treatment outcomes is the use of MH apps. However, little is known about how people with OCD use MH apps to manage or treat OCD. This research aims to develop an understanding of this by exploring the perspective of people living with OCD, to establish how apps can reduce barriers to OCD support, support OCD symptoms and compliment conventional therapy.

Design: The study used reflexive thematic analysis to explore the perspectives of using mental health apps by people living with OCD. Eight participants across three countries recruited through OCD charities and social media took part.

Methods: Participants took part in semi-structured interviews exploring their experiences of using mental health apps. Interviews were recorded, transcribed verbatim and analysed using reflexive thematic analysis.

Results: Analysis of the data led to the development of three theme: 1) Finding a way into OCD support; 2) The value of human guidance; and 3) The quandary of connections.

Conclusions: Participants described the value of using MH apps to overcome barriers to support, a way of increasing guided support outside of therapy, and becoming connected to the OCD community. Clinical implications and recommendations for future research are considered.

Keywords: qualitative research; thematic analysis; mental health; mobile apps; OCD

Introduction

Obsessive compulsive disorder (OCD) is a debilitating mental illness which is reported to impact 1-3% of the population (Veale & Roberts, 2014), with an average onset in late teens (Brakoulias et al., 2017). OCD is characterised by the experience of obsessions, which involve persistent unwanted and disturbing intrusive thoughts, images or urges, and/or compulsions, which involve ritualistic and repetitive acts (APA, 2013). OCD is noted to impact individuals across cultures and ethnicities (Nicolini et al., 2018), with The World Health Organization (WHO) listing anxiety disorders, including OCD, as the sixth largest contributor to non-fatal health loss globally (WHO, 2017).

The nature of intrusive obsessions can result in significant anxiety and discomfort to the person with OCD, leading to the impediment of occupational, social, and recreational aspirations (Macy et al., 2013). The impact of OCD can be costly to the individual, their families (Grover & Dutt, 2011), and wider society (Knapp et al., 2000). In addition, the high prevalence, and early onset is associated with OCD having a prognosis that can have a chronic and disabling course. This has also been found in non-clinical samples (Subramaniam et al., 2013), which can often be missed in such research.

The provision of reliable and accessible mental health care treatment for OCD can help to prevent this. In the UK, healthcare guidelines recommend cognitive behavioural therapy (CBT) involving exposure and response prevention (ERP) (NICE, 2006) as the first choice treatment for OCD, supported by an evidence base for its efficacy (Ferrando & Selai, 2021). However, the size and quality of such research can vary (Reid et al., 2021), with ‘real world’ implications often underlining a different picture. A systematic review by Schwartz et al. (2013) found that the majority of treatment-seeking people with OCD do not receive CBT-based psychology treatment, with only 18-30% of the sample from included studies specifically receiving psychological treatment including ERP. In addition, individuals receiving ERP experience remission rates between 25-60% (Fisher & Wells, 2005). The variability in response to OCD treatment is thought to be impacted by a number of factors, including the length of therapy, compliance with homework, how exposure therapy is conducted, and clinician adherence to evidence-based practice (Cooper et al., 2021).

In addition to the variation in clinical outcomes and treatment availability, the prognosis of living with OCD is also compounded by barriers which can delay help seeking and the duration of untreated illness. A significant proportion of people living with OCD never ask for professional help (Albert et al., 2019; Schwartz et al., 2013), and of those who do, a recent study reports there to be a seven-year gap between onset of symptoms and treatment being sought (Hezel et al., 2022). This is likely to be a factor in the poor prognosis of OCD, as a longer duration of untreated OCD is associated with poorer long term treatment outcomes (Zheng et al., 2021). This delay in seeking treatment is reported to be a significant public health issue, with considerable effects and costs for individuals, families, mental health systems and society (NICE, 2006).

A growing body of research exploring the delay to OCD treatment have identified several barriers related to this (Goodwin et al., 2002; Marques et al., 2010). Poor mental health literacy (MHL) relating to OCD - that is attitudes and knowledge of OCD and treatment - can delay treatment seeking and access to treatment. This can be due to misidentification of OCD symptoms by the individual and health care professionals (Wahl et al., 2010), lack of awareness of where to find help, lack of confidence in treatment being effective, and beliefs of being able to self-manage OCD (García-Soriano et al., 2014). Feelings of shame and stigmatising attitudes towards OCD can also lead to concealment of symptoms and thus delay help-seeking (Ociskova et al., 2013). This is especially evident in ethnic minority groups, who are particularly under-represented in mental health services and in receiving OCD treatment, due to heightened levels of shame, stigma, and low MHL (de la Cruz et al., 2015; Williams et al., 2017). Additionally, logistical variables such as worries about treatment inconveniences related to time, transportation or scheduling have also been reported (García-Soriano et al., 2014).

Whilst these studies often use surveys to identify barriers from a pre-selected list, recent research has also qualitatively explored the views of people with OCD in a UK sample, reporting similar themes (self-management, lack of awareness, shame) as barriers, at the same time emphasising the impact of stigma which may have been under-reported in survey data (Robinson et al., 2017). Taken together, the existing barriers to accessing mental health support, treatment difficulties and chronicity suggest a pressing need to consider alternative or complementary methods of delivering mental health care for individuals with OCD to reduce the delay in treatment and accessibility to appropriate support. This is corroborated by recent research (Ferreri et al., 2019) and a consensus statement being issued by an international panel of OCD experts calling for more early intervention efforts (Fineberg et al., 2019).

The use of digital technology is an avenue that is receiving attention for its ability to address the unmet mental health needs of the population. In the UK this is being recognised by government and healthcare services (Department of Health and Social Care, 2022; NHS England, 2016), as well as advocation from mental health charities (Centre for Mental Health, 2022). With the widespread ownership and accessibility of smartphones (Statista, 2020), there is a growing body of research examining the potential of mental health applications (MH apps) in particular as a platform to improve mental health care delivery (Neary & Schueller, 2018; Weisel et al., 2019) for a wide range of mental health conditions (Weisel et al., 2019) and general wellbeing (Wasil et al., 2022). MH apps are reported to improve autonomy, whilst increasing self-awareness and self-efficacy of its users (Prentice & Dobson, 2014), leading to promising outcomes in reducing mental health difficulties (Lecomte et al., 2020).

Although meta-analyses indicate that MH apps designed to alleviate depression and anxiety have a small- to moderate effect (Wu et al., 2021), no meta-analyses of apps for treating OCD have yet been published. Nevertheless, recent research has demonstrated the efficacy of CBT-based MH apps in treating OCD (Cerea et al., 2020; Hwang et al., 2021). Multiple studies, including randomized controlled trials (Akin-Sari et al., 2022; Roncero et al., 2019), have shown that using an OCD-specific MH app is linked to a reduction in OCD symptoms and beliefs.

The availability of smartphones gives MH apps the potential to overcome some of the aforementioned barriers to seeking support for OCD, reducing treatment gaps as a result. For example, people with OCD who may need to prioritise work and commitments over treatment, particularly those from lower incomes (Williams et al., 2012), can access support that may otherwise be inaccessible to them (Weisel et al., 2019). Furthermore, the stigma and shame that people often experience in relation to OCD, particularly people from minority groups, may be mitigated by MH apps affording private and anonymous avenues of accessing support (Borghouts et al., 2021). Additionally, mental health literacy may be improved by the educational and validating aspects of mental health support (Chaves et al., 2022), paving the way for individuals to seek further treatment.

For service providers, MH apps may present an opportunity to reduce the costs of delivering support to people with OCD, due to the reduced need for clinician input and scalability of delivering apps across services. Even with human support, app-based treatments have been reported to significantly reduce clinician time. In a study examining the effectiveness of an app-based CBT trial for body dysmorphic disorder, Wilhelm et al. (2022)

claim a significant reduction in clinician time compared to conventional one-to-one therapy. However, whether the effectiveness of the app with reduced clinician involvement was comparable to conventional treatment is difficult to assess, as the study compared app treatment to waitlist controls. Furthermore, Lundström et al. (2022) highlighted a potential 90% reduction of costs in a therapy-guided digital CBT programme for OCD compared to in person treatment, however the effectiveness of in-person was superior to that of the guided digital programme.

In relation to OCD, Cooper et al. (2021) identified several factors related to good treatment outcomes that may be enhanced by the use of technology, such as improving access before symptoms increase in severity, increasing convenience and engagement of homework tasks, and fostering autonomous skills development. Furthermore, such alternative delivery systems are in line with stepped-care approaches for OCD such as that in the UK (NICE, 2006), where those with OCD may start with low intensity interventions, and a stage where MH apps may fit in. If needed, people are stepped up to receive more intense and expert interventions. This is corroborated by a recent review examining the reasons for OCD treatment gap, which concluded a need for technology to be utilised as an early intervention for OCD treatment (Senter et al., 2021).

Despite the promising outcomes that MH apps are beginning to show (Chandrashekar, 2018), the use of apps to support mental health is not without its challenges. Many MH apps lack evidence of their effectiveness or therapeutic underpinning (Weisel et al., 2019), and don’t consider the features of traditional treatment that lead to positive outcomes, such as therapeutic alliance factors (Henson et al., 2019). Lee et al. (2019) reviewed self-help apps for OCD and found that research support was generally limited or non-existent for most self-help programs, with some apps offering ‘poor quality, incomplete, and/or inaccurate’ guidance. Additionally, one significant limitation of MH apps is poor retention, as highlighted in a study by Baumel et al. (2019) showing that after 15 days, only 3.9% of people who download MH apps from commercial app stores continue to use them. This is a key challenge as engagement is considered to be a key factor for MH apps to be effective (Balaskas et al., 2022) and lead to changes in clinical outcomes (Graham et al., 2021).

A factor for poor engagement is argued to be the limited involvement of end users during the development or deployment of MH apps (van Gemert-Pijnen et al., 2011). Berry et al. (2019) emphasise the need to explore the experiences and perspectives of the end users to address issues with engagement and understand how MH apps can be used to deliver accessible and timely mental health care. Indeed, this is being explored across a number of MH conditions including depression (Pung et al., 2018), psychosis (Berry et al., 2019), and bipolar disorder (Nicholas et al., 2015). However, despite the potential benefits of MH apps for people living with OCD, there is a paucity of literature considering their qualitative perspectives towards MH apps. This is despite a growing number of apps designed specifically for OCD difficulties being available in consumer app stores. This area is well-suited for qualitative research which can explore topics without relying on assumptions from previous research (Pistrang & Barker, 2012).

Therefore, the aims of this study are to qualitatively explore how people living with OCD use MH apps to establish: 1) how apps can successfully reduce barriers to accessing mental health support for OCD, and 2) the potential role MH apps may have in supporting OCD symptoms and complimenting conventional therapy. This may feed into future development processes, be considered by mental health providers exploring how OCD apps may fit into mental health provisions, and by clinicians to consider how MH apps could be used to support the treatment process with their clients.

Method

Design

The study explored the perspectives of people living with OCD who have used MH apps using a qualitative research design. Semi-structured interviews were used to enable flexibility, clarification, and validity to the conclusions drawn. The data was analysed using reflexive thematic analysis (RTA) (Braun & Clarke, 2012, 2019). Thematic analysis is recommended by Braun and Clarke (2021) when exploring an area where the sample may not be homogenous, as is reported with OCD (Mataix-Cols et al., 2008); the analytic focus is on detecting themes across the participants' accounts; and the analytic interest is on how individual experiences are located within wider systems, such as the experience of MH apps within OCD support systems. Additionally, RTA was utilised over previous versions of thematic analysis as it considers the researcher's position within the data gathering and analysis process.

Prior to commencing the research, ethical approval was received from Lancaster University Faculty of Health and Medicine Research Ethics Committee (See appendix 4-A).

Participants & Recruitment

Individuals were eligible to participate if they (1) were aged 18 years or older; (2) self-reported a diagnosis of OCD, which may have been given by a health professional or self-diagnosed; (3) had substantially engaged with a MH app to support their OCD difficulties in the past 12 months, and (4) were fluent in English. Participants with self-diagnosed OCD were included, as barriers to treatment and the treatment gap for OCD as described earlier, may mean that the use of MH apps occurred before participants sought, or were waiting for OCD diagnosis. In the end, all participants had OCD as diagnosed by a healthcare professional.

Participants were recruited online through OCD charities (OCD Action, TOP UK, iOCD) who shared the research information and/or poster on their research participation pages, and through social media (Twitter, Reddit, Facebook) where the research was advertised in forums and groups related to OCD. Eligible individuals were invited to make contact via email.

Procedure

A member of the Lancaster University Public Involvement Network (LUPIN) with lived experienced of mental health difficulties reviewed and commented on draft versions of the following documents: advertising poster, participant information sheet, consent form, debrief sheet, and interview schedule. Please refer to Appendix 4-C to 4-G of the ethics section for participant documents.

Potential participants who expressed an interest in the study were provided with a consent form and participation information sheet. If participants consented to take part, an interview was arranged at a time and date convenient to them. Interviews took place remotely using Microsoft Teams software and were video recorded with the participants consent for transcription and analysis. A topic guide was developed to guide the interview process which was informed by qualitative literature (Berry et al., 2019), and through discussion with two academic supervisors which followed a semi-structured format. Semi-structured interviews were conducted as they adopt a flexible approach allowing participants to share perspective from their position as experts in the area. Data was collected through recording and verbatim transcribing of the remote interviews, which was completed by the researcher. Pseudonyms were created to protect the participant's confidentiality.

Following each interview, participants were provided with a debrief document providing details of potential sources of support in the event of any distress after the interview. Participants were made aware they could withdraw from the study at any point and that they did not have to disclose any personal information that they did not wish to. All recordings were stored securely on an encrypted device and erased following completion of the research.

Recruitment took place over a 12-month period, resulting in eight participants taking part in the study. The interviews lasted between 37 and 68 minutes. Four participants identified as female, and four as male. Participants' ages ranged from 22 to 45. An international sample of participants took part, four from USA, three from UK, and one person from Germany. Two OCD apps were predominantly used by the participants. One provided access to remote therapy, OCD psychoeducation, support forums, and the other focused on challenging negative thoughts and mood tracking.

Further participants' characteristics are summarised in Table 1 below.

Table 1

Demographic characteristics of participants

Pseudonym	**Age**	**Ethnicity**	**Gender Identity**	**Education**	**Apps Used**	**Past or Current Use**	**Length of Use**
Marnie	24	White	Female	Masters	NOCD	Past	6 months
Peter	24	White	Male	Undergraduate	NOCD, ggOCD, rOCD	Current	10 years
Freya	26	White	Female	Masters	NOCD, ggOCD, Finch	Past	6 months
Patrick	42	White	Male	Undergraduate	NOCD, Headspace	Current	3 months
Harriet	23	White	Female	Masters	Headspace	Past	2 weeks
Bruce	45	White	Male	Doctorate	OCD App	Current	3 months
Ben	24	White	Male	Undergraduate	NOCD	Current	1 year
Lucy	22	Mixed white and Asian	Female	Undergraduate	NOCD, Insight Timer	Current	3 years

Data Analysis

Data was analysed using reflexive thematic analysis, following the framework established by Braun and Clarke (2019). The researcher established familiarity with the data by transcription, reading and re-reading each interview and generating codes by moving line-by-line through the transcriptions. Subsequently, codes were collated and grouped based on their meanings. These were further refined, named based on the patterns within the data and collated into three themes, which were checked against example data sets. The final analytic stage was producing a coherent and cohesive report of the final themes, presented in the Results section.

Quality

This study conforms to Yardley's four principles "sensitivity to context; commitment and rigour; transparency and coherence; impact and importance." (Yardley, 2000). The study was designed and positioned in the context of relevant literature; descriptions of the methodology were transparent and detailed; analysis of the data was rigorous; and the relevance of the study's findings were discussed in context of the ever-developing area of digital mental health and its context within clinical psychology and the NHS. Discussions with supervisors throughout data collection and analysis stages supported credibility. This helped to reduce researcher influences and bias on the interpretation of themes as much as possible. An audit trail pertaining to the analysis of the data was created and maintained. Appendix 2-B and 2-C illustrates this process through an example of a theme, its corresponding codes, and sample transcript exerts.

Having academic experience in computing as part of the researcher's background in psychology led the researcher to explore the intersection between technology and psychology and how this can be used to improve equity of access to mental health support. Despite not having personal experience of OCD, gaining clinical and academic knowledge of the challenges people living with OCD motivated the researcher to consider how this intersection could be utilised to help those impacted by OCD to overcome the challenges they face in relation to accessing mental health support. A reflective journal was used throughout the process as a way of to 'bracket' the researcher's prior assumptions whilst collecting data and analysing the participants' perspectives. Further reflection of these positions and processes are given in the Critical Appraisal (Section 3).

Results

Analysis of the participants' accounts of using MH apps for their OCD led to the generation of three themes: (1) Finding a way into OCD support; (2) The value of human guidance; and (3) The quandary of connections.

Theme 1: Finding a way into OCD support

The first theme describes the experience of using MH apps as 'Finding a way into OCD support', where apps were used to circumvent the barriers faced by people with OCD when seeking support or treatment through conventional mental health services. Living with OCD was associated with experiencing significant distress, and participants sought MH apps at these junctures to access some support when OCD felt overwhelming in the moment, as described by Freya: "*I was getting a bit desperate and was just looking for ways to help*".

For other participants, MH apps were seen as a gateway to OCD support when conventional treatment was hard to access due to difficulty finding trained ERP therapists, long waiting times or cost of treatment. Ben spoke about the difficulty in finding trained ERP therapists, which was compounded by high costs and long waiting times: "*The big reason I went looking for an app is because it is so hard to find ERP therapists wherever I've ever lived. They usually have a really long waiting list… Um, and they're expensive. And it's just a nightmare to access OCD therapy in daily life*". In contrast, MH apps provided a sense of availability that led to them being seen as a way of improving equity of access to OCD therapy: "*So the fact that the app makes it available to me where I can afford it and I can do it from anywhere. That is like a huge positive that that really makes the app important*" [Ben].

The desire to receive the 'gold standard' treatment of ERP for OCD was counterbalanced by the barrier of ERP requiring exposure to daunting fears and situations. Participants described MH apps as being less formidable than therapy and thus providing a way of supporting their OCD when ERP therapy felt overwhelming or unmanageable. For Peter, the experience of MH apps gave him the perspective that "*the app seems very low stakes and it's some degree pretty low effort and I think that makes them feel not as daunting as going into therapy or especially, like doing exposing yourself to the absolute worst fear every time… I'm like, okay these apps will get me some of the way there".*

Using apps as a "more manageable" way of dealing with OCD was supported by the variety of mechanisms that MH apps used to engage their users, which participants described as helping to reduce the stakes of accessing support in times of need. For some participants, the use of "small exercises, just like little bite-sized things" [Marnie] were felt to be "more achievable than maybe like an ERP exercise that feels a bit more daunting". Within these small exercises, Marnie used the examples of "journal prompt" or "grounding", as being helpful. Despite these being exercises that may often be employed in conventional treatment, the use of a MH app being on an accessible and available smartphone may mean they are more likely to be used in moments of distress.

The experience of stigma around OCD and the feelings of shame when experiencing challenging intrusive thoughts was described as another factor acting as a barrier to seeking traditional face-to-face treatment for OCD. This was particularly pertinent for Lucy, who described "being too ashamed to talk about it [OCD]" for fear of judgement from others, and so she sought out "a private way to try and manage some of these symptoms". The anonymity and flexibility of using a MH app appears to have provided opportunities to recognise, validate and normalise the participants' experiences. For Marnie, this had the impact of reassuring her that these experiences are related to a mental health condition "*when I go on the app it was like a reminder that I do have OCD and the reason I'm thinking about these things is because I have OCD*. In Lucy's experience, the anonymity and flexibility helped her to "*lessen the shame a bit, and realising this is something that is well documented that lots of other people experience"*.

Theme 2: The value of human guidance

Although participants felt MH apps provided a way into OCD support, their use as a sole tool in treating OCD was not viewed favourably. The main contributing factor was the lack of human guidance. Treating OCD was considered to be a difficult journey to make without the support of a professional guiding the process through one-to-one therapy. MH apps were instead considered to be best positioned as a platform to expand guidance outside the limitations of conventional therapy, as noted by Patrick: *"The app I think is more 'how can I fill in the gaps in between [therapy]?'"*.

Participants highlighted the value of external accountability that having a therapist provides, which was not present in self-guided MH apps. Having external accountability was experienced as an imperative aspect of engaging with the process of treating OCD, particularly as treatments such as ERP are challenging in nature. This was conveyed by Peter who described his experience: "*I get a feeling of security from doing one-on-one with a therapist and feeling like someone like someone else is holding me accountable as opposed to these apps which is very much no one's gonna force me to do it. No one's gonna tell me I have to, which I sometimes need frankly*". This sentiment was evident across a number of participants' accounts, where certain aspects of external accountability provided the encouragement to continue engaging with treating OCD. This included the structure that having therapy appointments provide, as described by Freya: *"So like therapy, you know it's appointments so I'm more likely to go to them rather than do something off my own back".*

The emotional connection that is formed when engaging with a therapist was not felt to be present in the experience of using an app, which was instead seen as more of a practical means to support, as conveyed by Bruce: *"It's also about empathy and being connected and I don't really feel connected to the app, you know, I use it as a helpful tool to remind to do my homework in general".* An emotional connection supported engagement with treatment, whereas MH apps did not have an element of *"letting someone down"* or having someone *"who I can be accountable to, either financially or otherwise"* as described by Patrick, which led him to *"feel more associated with the task".*

In the process of treating OCD through exposure tasks, having a therapist initially along the process provided participants with an external perspective, from someone who could recognise when compulsions were replaced with alternative safety behaviours as a way of avoiding uncomfortable feelings. Lucy described her therapist being alongside her whilst practising exposure tasks, permitting them to: "*point out "Hey, you're resisting this compulsion, but now you're doing this instead, or you're avoiding this thing*". However, MH apps were felt to lack this expertise and guidance, as described by Patrick: "*having just resources and no guidance about getting, you know, how to get it done. I think this would be unsuccessful*". As a result, the process of treating OCD symptoms through exposure work, purely via a MH app, was not felt to pick up such behaviours, which was important in treating OCD for Lucy: "*With something that I'm doing on own with an app it's not necessarily gonna be able to really be aware of those kind of things. Which I feel like has been important for me with my OCD. So I think definitely at least at the beginning of my journey it was very helpful to have somebody there to point those kinds of things out to me*".

However, MH apps were valued when used as platforms to enhance the availability and access to professional guidance outside of weekly appointments. One way that participants experienced MH apps as 'filling the gap' between therapy was by recording the experiences of OCD and homework tasks in MH apps that could then be monitored by therapists, who could provide feedback between sessions. This was described by Patrick as having ‘an asynchronous communication’ with a therapist, which helped to provide a clearer picture of the person’s experience of OCD. By recording and monitoring OCD in the moment as opposed to recalling this in sessions, Patrick described his experience as: “*it's led to me being more transparent about what's going on. Having the ability to provide a log at, you know, midnight when I go to bed, right?*”. In providing this information Patrick described the clearer picture that his therapists and he himself would have of his difficulties: “*I think it helps my providers understand where I am. I was thinking it helps me recognise when I've done things that have been successful and maybe identifying patterns that are not successful*”.

In monitoring OCD ‘when it is live’, participants felt that their experience of having an asynchronous connection between sessions to their therapist also helped to shape their ERP exercises and homework tasks. This occurred through participants’ experiences of MH apps informing the therapist of obsessions and compulsions in real time in the context of the person’s life. This was felt to be pertinent with OCD, which was described as “*always evolving, especially when you fight it*”. The use of MH apps also allowed the process of therapy to match the changing and often challenging nature of experiencing OCD, by providing such a connection to the therapist as to continue therapeutic support outside of the weekly session.

> Ben: **“***Because OCD is always like a work in progress. You have to be constantly working on it… That constant communication is key, I think, because having a therapist that you meet once weekly and then if you do nothing after you meet them. Like, that's not really how you defeat OCD… For ERP therapy, it's all about the homework. It's all about what you're doing outside of the outside of session, so being able to talk to them about it is really, really useful*”.

Additionally, participants reported that receiving praise from the therapist through this feedback process was beneficial in encouraging them to continue engaging with homework tasks, particularly ERP which could feel challenging. This was experienced as helpful and encouraging due to the challenging nature of ERP tasks. Ben: "*they [therapists] can see what you're submitting and then they can message you about it and say, 'hey, you did a good job' and they can like, you know, they can praise you for it and make you feel like give you that win… when you're fighting OCD, you gotta really celebrate the wins… because when you fight OCD, it feels wrong*".

Theme 3: The quandary of connection

The stigma and shame that people with OCD experience can lead to an isolative experience, as noted by Harriet: "*So before it seemed like this was very like it's just kind of me who has it and nobody can really help me with it*". The accessibility and anonymity of using a MH app means that the barrier of being connected to a community of people living with OCD becomes easier to overcome. However, there was a common experience of connection to the OCD community as being both a blessing and a curse, where having other people who have experienced what you have experienced brings understanding, but also the potential to multiply the problems.

On one side, MH apps helped facilitate a platform to the OCD community, where for some this may have been the first time they had been connected to other people living with OCD, as was the case for Marnie: "*it was great because it was the first sort of exposure I'd had to other people with OCD"*. Having this connection helped people to feel validated and understand that they were not alone in living with OCD. Ben described his experience as: *"It makes me realise on an experiential level that I'm not alone, like I know it doesn't make it any better really. But I get to feel like empathy from others*". By developing an awareness of other people's stories of living with OCD, participants described feeling a sense of normalisation, which reduced the shame that is often associated in experiencing intrusive thoughts related to OCD. For Lucy, she talked about this experience as: "*it definitely helped me to shift my perspectives in terms of feeling like I'm not the only person who has these kinds of thoughts. Maybe it doesn't necessarily mean that I'm a terrible person*".

Furthermore, by using apps as a way of information gathering of other people's triumphs over OCD, participants felt empowered to continue challenging their own OCD, as described by Patrick: *"It is, I think sometimes helpful to read stories or, or other pieces about people who have gone through certain trial, tribulations, whatever, right, come out the other side of it. It doesn't hurt right I mean it and sometimes it helps me feel like I'm you know I'm not alone and doing stuff".*

However, the accessibility to the OCD community also led to a number of challenges, particularly feeling that these spaces were often overwhelmed with other people using them as a way of reassurance seeking. Marnie described her experience within this space as: "*I started to have a bit of a weird relationship with it because it can be quite triggering, and a lot of the sort of community forums and things just didn't really work for me. It was like a lot of people posting about their own experiences in a way that was sort of taking support from other people".* Freya also shared a similar experience, highlighting the experience of initially perceiving community forums as being therapeutic, but ultimately finding this to be unhelpful: "*People can have the tendency just to fuel each other. It was just "Me too. Me too. Me too". "Yeah, I have this as well". You know, all these, it's just very negative. Nothing constructive".*

When the apps were largely focused on providing a community space, this led to disengagement with the app for some users, as Marnie described: "*But for me, I was like, I* *think I need to focus on myself a little bit more and yeah, not be reading about other people's kind of intrusive thoughts and things. So that's why I stopped using the app".*

In other experiences, the constant availability of being around descriptions of intrusive thoughts and compulsions were described as triggers leading to new worries and compulsions in the participants themselves. This was conveyed by Patrick: *"I will say where I've read a few things and like, oh, that's something I hadn't worried about before, but that's a good one to worry about, right? So it's also sometimes prompted like, maybe a little bit of negative pattern patterning".*

Discussion

The aim of this study was to qualitatively explore the perspectives and experiences of people living with OCD who had used mobile apps to support their mental health. Reflective thematic analysis of the participants' accounts led to three themes being developed. These will be discussed in the context of existing research and their clinical implications, alongside limitations of the current study, and future research recommendations.

Theme one: Finding a way into OCD support.

Accessing mental health support for OCD can be a challenging process for many, as they must face several internal and systemic barriers throughout the journey to treatment (Marques et al., 2010). In this study, the first theme encompassed the participants' experiences of using MH apps as a bridge to OCD support when conventional support was difficult to access. Robinson et al. (2017) describe reaching a crisis point as a negative enabler for people to seek OCD support, which was mirrored in the participants' accounts in this study. However, in this case participants sought support through MH apps as opposed to conventional mental health services due to the presence of barriers related to availability, accessibility and cost, which is in accordance with previous research (García-Soriano et al., 2014).

Additionally, the use of tools and strategies that were brief and less daunting in MH apps meant participants could experience a sense of challenging OCD that sat on a spectrum between succumbing to the compulsions and completing difficult exposure tasks. This is an understandable response, as ERP is anxiety-provoking by design, often perceived as challenging (Olatunji et al., 2009), and a potential factor in therapy disengagement (Aderka et al., 2011). In finding small ways of challenging OCD, it may be that MH apps bolster motivation to change through the perspective of increasing the sense of self-efficacy and readiness for change. This resonates with theoretical perspectives that these factors impact treatment motivation (Drieschner et al., 2004) and treatment outcomes (Pinto et al., 2007).

Moreover, the ego-dystonic nature of intrusive thoughts in OCD commonly leads to feelings of shame and stigma, particularly around thoughts that are sexual or harmful in nature (Glazier et al., 2015). This is a significant barrier to accessing OCD support, for fear of judgement and criminalisation (Robinson et al., 2017; Simonds & Thorpe, 2003). In being able to use MH apps within the privacy of a smartphone, the anonymity that MH apps offer individuals with OCD assisted their use in accessing support whilst dealing with such concerns.

Theme 2: The value of human guidance

MH apps are often positioned to serve as a self-help tool within the first tier of stepped-care models (Hiranandani et al., 2023). However, the picture that emerged within the second theme suggests that human guidance is key in treating OCD, which had become evident to participants when using MH apps without therapist support. Instead, a novel finding from this study was that using MH apps was perceived to supplement conventional therapy by enhancing the availability of professional support outside of therapy. The use of MH apps as a tool to support and augment treatment is a viewpoint that is shared by clinicians regarding MH apps (Berry et al., 2017). This is also somewhat incongruent with prior studies that have shown digital mental health tools to report similar perceived effectiveness as face-to-face delivery (Jenkins-Guarnieri et al., 2015). These findings are particularly relevant for MH apps to be considered as an adjunct in low-intensity interventions (Spurgeon & Wright, 2010), instead of a first step unguided intervention, where the issues of poor engagement and retention may be perpetuated, leading to their potential assets being unrecognised.

In addition, the degree of client engagement in OCD treatment is considered to be a mediating factor in treatment outcomes (Aderka et al., 2011), particularly participation in between-session tasks (Tetley et al., 2011). However, as noted previously, the challenging nature of exposure tasks, in addition to the individual’s social context, can affect motivation and perseverance, and subsequent engagement with ERP homework (Leeuwerik et al., 2023). In this study, MH apps supported engagement with homework tasks, as participants were encouraged by access to regular feedback and praise outside of weekly therapy sessions. This allowed participants to be more open about their experiences, feel encouraged to persevere, and perceive a greater sense of personalisation to their context. However, it is argued that one purpose of practicing ERP between sessions is to consolidate learning and ensure clients take responsibility without the reassurance and safety offered by a therapist (Kazantzis et al., 2005). This raises the dilemma of MH apps potentially encouraging a greater level of reliance on therapists and displacing the locus of control from the client to the therapist.

An element of therapist guidance that participants considered valuable was the role of external accountability. Participants again identified the high level of commitment and discomfort of engaging with ERP tasks as areas where having financial, emotional, and relational accountability helps them to persevere. The self-motivation required to engage with ERP through a MH app was often superseded by the distress of exposure work, meaning extrinsic regulation is helpful in motivating the person's behaviour, fitting within Deci and Ryan (2012)'s self-determination theory (SDT).

Theme 3: The quandary of connection

OCD is a condition that is poorly understood by the general public (Robinson et al., 2019) often leading to feelings of isolation, shame, and stigma in those who live with it (Timpano et al., 2014), as recounted by the participants in this study. MH apps facilitated a platform for peer support through forum spaces and provided for many participants their first sense of connectedness to others going through similar journeys. There is little research exploring the use of peer support and experiences of community forums specifically in OCD; however, these results align with insights from users of general mental health forums (Smith-Merry et al., 2019), who use them to address social isolation, discover social connections, and find information and advice.

SDT (Deci & Ryan, 2012) may also provide a framework to consider the value that participants gained through connection to the OCD community. The SDT model posits that motivation can be considered in relation to three psychological needs, one of these being 'relatedness'. In feeling that an individual's experiences are relatable by other people, MH app forums may facilitate the normalisation of OCD experiences, the reduction of shame and stigma, and the empowerment of individuals to seek OCD treatment. On the other hand, the availability of digital OCD communities was also felt to interplay with the high levels of reassurance seeking present in people with OCD (Kobori et al., 2012), which is used to alleviate intrusive thoughts. This led to community spaces feeling like 'an echo chamber' of triggering content and reassurance seeking. As reassurance can have the same function as compulsions in OCD (Kobori et al., 2012) - and for some participants in this study, lead to disengagement with MH apps - these findings highlight the need for such spaces to require moderation and greater psychoeducation prior to their use.

Limitations

The current study aimed to recruit between 12-15 participants initially to provide an expansive set of data and consider perspectives from a larger sample of participants. However, due to recruitment difficulties, data analysis was begun once eight participants were recruited and interviewed for the study. Despite this, Guest et al. (2006), who have studied saturation of qualitative interviews, have provided evidence that the essential components of themes can be elicited by the analysis of six interviews.

The transferability of qualitative research findings to other contexts and groups (Myers, 2000) is a potential limitation of this present study due to the highly heterogeneous nature of OCD (Mataix-Cols et al., 2008). It is possible that different presentations of OCD are associated with unique experiences and perspectives of OCD. As the utilisation of MH apps continues to grow, it would be beneficial to explore the aims of the current research with a wider group of participants, in order to discern if current themes are transferable across the spectrum of OCD experiences before the use of MH apps becomes more widely adopted.

Additionally, as their ability to improve equity of access to mental health care is a key potential of MH apps - particularly for people who are under-represented in mental health services (Friis-Healy et al., 2021) - the current study was limited by the sample of participants being almost entirely white and western. Researching how MH apps for OCD are experienced by those in minoritized groups is imperative in identifying engagement patterns and whether additional considerations would be helpful to support their implementation.

Clinical Implications

The participants' perspectives in this study suggest that MH apps may be beneficial when people face barriers to seeking or accessing treatment. Increasing awareness of MH apps for OCD may benefit individuals who do not seek treatment from fear of shame and stigma (Glazier et al., 2015), in order to normalise their experience and encourage further treatment seeking (Cooper et al., 2021). Additionally, when conventional services are inaccessible due to cost or availability, MH apps provide a gateway to support. For mental health services, their role may be to increase awareness of MH apps as one option for OCD treatment in a system of care. Information on MH apps could be provided as part of service provision information (e.g., websites, social media, leaflets).

Furthermore, MH apps may be considered by therapists as a way of supplementing conventional one-to-one approaches to improve engagement and treatment outcomes (Cooper et al., 2021). A holistic approach that considers client factors such as experience with ERP as well as internal or extrinsic motivation to change may be helpful in identifying how a MH app can help to overcome client-specific therapeutic barriers (Gershkovich et al., 2021). For example, a client who may struggle to engage with ERP homework tasks, could use a MH app to receive feedback and praise outside of sessions, providing external motivation to maintain engagement. However, a graded approach where therapist input is reduced over time may be helpful to reduce reliance on the therapist and encourage autonomy for the client.

Additionally, the use of specific components of MH apps (Pung et al., 2018) could be encouraged by clinicians, by incorporating MH apps into a client's formulation. For example, if a client struggles to discuss their difficulties with family or friends for fear of judgement, engaging with digital communities may help clients to feel connected and normalise their experiences. However, to mitigate the drawbacks associated with online OCD communities, clinicians should be aware of the risks posed, and consider with clients how to manage content that may be triggering for them. Additionally, it may be beneficial for app developers to have moderation, guidelines, and education around the risks and how community features may be best used by their users to reduce these quandaries. Despite these implications, this is an area where further research is warranted (Prescott et al., 2020) to explore how risks may be mitigated.

Moreover, in instances where commitment to engage with ERP tasks is daunting, brief, less intense exercises may act as a stepping-stone to empower individuals to more challenging practice. In these circumstances, collaboratively considering the utility and limitations of MH apps with clients provides individuals with choice over treatment options and promotes shared decision-making.

Future Research

A key finding from this study was that MH apps can improve engagement with OCD treatments by providing access to therapist guidance outside of weekly sessions. However, it is not clear to what extent the expertise or personal connection of the therapist is key in this. This may be explored by supporting clients with ERP tasks through MH apps as guided by trained coaches compared to clinicians. Quantitative research may explore treatment and homework adherence by clients, whilst qualitative research could be used to explore the clients’ experiences and therapeutic alliance to coaches versus clinicians through MH apps.

A number of participants discussed the experience of engaging with digital forums and communities through MH apps. The benefits and potential limitations of these spaces for OCD support highlight a need for further qualitative exploration, to understand the psychological impact and to identify best practices in how they can be monitored and regulated to overcome the risks of reassurance seeking and triggering new compulsions.

Whilst this has been examined across young peoples' experiences (Hanley et al., 2019; Prescott et al., 2019), there is a lack of literature covering people living with OCD.

The current study has described a number of clinical recommendations for therapists to consider when considering the implementation of MH apps for people living with OCD. However, little is known about the perceptions of therapists' experiences and perspectives of MH apps for OCD. This is pertinent from the present study's finding that participants valued the increased contact with therapists outside of weekly sessions as a key impact from MH app use. Qualitatively exploring this would be helpful in understanding the barriers and facilitators that may exist for healthcare professionals to incorporate digital tools when working with OCD, particularly as this has been explored in MH apps for different conditions (Bucci, Berry, et al., 2019; Reger et al., 2017).

Lastly, a finding from this study related to how MH apps support people living with OCD to access support when faced with internal or systemic barriers to conventional treatment, acting as a steppingstone to further support. This is an area which warrants further exploration to understand the psychological impact of using MH apps in reducing treatment barriers. Qualitatively focusing on this may be helpful in understanding the mechanisms of MH apps which support this process. Additionally, measuring changes in perceived stigma and motivation to change may provide evidence towards the impact of MH apps, supporting their research basis to be further considered by service providers.

Conclusion

This study used reflexive thematic analysis to explore the perspectives of people with OCD on using apps to support their mental health. The three developed themes answered the research questions by highlighting the perceived benefits that MH apps brought when conventional mental health services were difficult to access (e.g., due to the stigma of seeking in person support, long waiting times, lack of OCD recognition etc), whilst acknowledging their limited scope in supporting OCD treatment, where they are best positioned to supplement rather than replace conventional evidence-based treatments. For the participants in this study, MH apps supported their OCD symptoms by increasing access to in the moment support outside of therapy sessions and creating peer support spaces to support their difficulties. The value of guided support also was emphasised, which highlighted the unique aspects of the OCD experience that must be considered by clinicians and service providers if MH apps are to be incorporated into treatment pathways.

References

Aderka, I. M., Anholt, G. E., van Balkom, A. J. L. M., Smit, J. H., Hermesh, H., Hofmann, S. G., & van Oppen, P. (2011). Differences between early and late drop-outs from treatment for obsessive–compulsive disorder. *Journal of Anxiety Disorders*, *25*(7), 918-923. https://doi.org/https://doi.org/10.1016/j.janxdis.2011.05.004

Akin-Sari, B., Inozu, M., Haciomeroglu, A. B., Cekci, B. C., Uzumcu, E., & Doron, G. (2022). Cognitive Training via a mobile application to reduce obsessive-compulsive-related distress and cognitions during the COVID-19 outbreaks: a randomized controlled trial using a subclinical cohort. *Behavior Therapy*, *53*(5), 776-792.

Albert, U., Barbaro, F., Bramante, S., Rosso, G., De Ronchi, D., & Maina, G. (2019). Duration of untreated illness and response to SRI treatment in obsessive-compulsive disorder. *European Psychiatry*, *58*, 19-26.

APA. (2013). Diagnostic and statistical manual of mental disorders. *Am Psychiatric Assoc*, *21*(21), 591-643.

Balaskas, A., Schueller, S. M., Cox, A. L., & Doherty, G. (2022). Understanding users' perspectives on mobile apps for anxiety management. *Front Digit Health*, *4*, 854263. https://doi.org/10.3389/fdgth.2022.854263

Baumel, A., Muench, F., Edan, S., & Kane, J. M. (2019). Objective User Engagement With Mental Health Apps: Systematic Search and Panel-Based Usage Analysis. *Journal of Medical Internet Research*, *21*(9), e14567. https://doi.org/10.2196/14567

Berry, N., Bucci, S., & Lobban, F. (2017). Use of the Internet and Mobile Phones for Self-Management of Severe Mental Health Problems: Qualitative Study of Staff Views. *JMIR Mental Health*, *4*(4), e52. https://doi.org/10.2196/mental.8311

Berry, N., Lobban, F., & Bucci, S. (2019). A qualitative exploration of service user views about using digital health interventions for self-management in severe mental health problems. *BMC Psychiatry*, *19*(1). https://doi.org/10.1186/s12888-018-1979-1

Borghouts, J., Eikey, E., Mark, G., De Leon, C., Schueller, S. M., Schneider, M., Stadnick, N., Zheng, K., Mukamel, D., & Sorkin, D. H. (2021). Barriers to and Facilitators of User Engagement With Digital Mental Health Interventions: Systematic Review. *Journal of Medical Internet Research*, *23*(3), e24387. https://doi.org/10.2196/24387

Brakoulias, V., Starcevic, V., Belloch, A., Brown, C., Ferrao, Y. A., Fontenelle, L. F., Lochner, C., Marazziti, D., Matsunaga, H., Miguel, E. C., Reddy, Y. C. J., Do Rosario, M. C., Shavitt, R. G., Shyam Sundar, A., Stein, D. J., Torres, A. R., & Viswasam, K. (2017). Comorbidity, age of onset and suicidality in obsessive–compulsive disorder (OCD): An international collaboration. *Comprehensive Psychiatry*, *76*, 79-86. https://doi.org/10.1016/j.comppsych.2017.04.002

Braun, V., & Clarke, V. (2012). Thematic analysis. In *APA handbook of research methods in psychology, Vol 2: Research designs: Quantitative, qualitative, neuropsychological, and biological*. (pp. 57-71). American Psychological Association. https://doi.org/10.1037/13620-004

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative research in sport, exercise and health, 11*(4), 589-597. https://doi.org/10.1080/2159676X.2019.1628806

Braun, V., & Clarke, V. (2021). Can I use TA? Should I use TA? Should I not use TA? Comparing reflexive thematic analysis and other pattern-based qualitative analytic approaches. *Counselling and Psychotherapy Research*, *21*(1), 37-47. https://doi.org/10.1002/capr.12360

Bucci, S., Berry, N., Morris, R., Berry, K., Haddock, G., Lewis, S., & Edge, D. (2019). "They Are Not Hard-to-Reach Clients. We Have Just Got Hard-to-Reach Services." Staff Views of Digital Health Tools in Specialist Mental Health Services [Original Research]. *Frontiers in Psychiatry, 10*. https://doi.org/10.3389/fpsyt.2019.00344

Centre for Mental Health. (2022). Connected: Remote technology in mental health services. *https://www.centreformentalhealth.org.uk/*. https://www.centreformentalhealth.org.uk/sites/default/files/publication/download/CentreforMentalHealth_Connected_RemoteTechnology_Briefing.pdf

Cerea, S., Ghisi, M., Bottesi, G., Carraro, E., Broggio, D., & Doron, G. (2020). Reaching reliable change using short, daily, cognitive training exercises delivered on a mobile application: The case of Relationship Obsessive Compulsive Disorder (ROCD) symptoms and cognitions in a subclinical cohort. *Journal of Affective Disorders*, *276*, 775-787. https://doi.org/https://doi.org/10.1016/j.jad.2020.07.043

Chandrashekar, P. (2018). Do mental health mobile apps work: evidence and recommendations for designing high-efficacy mental health mobile apps. *mHealth*, *4*, 6-6. https://doi.org/10.21037/mhealth.2018.03.02

Chaves, A., Arnáez, S., Castilla, D., Roncero, M., & García-Soriano, G. (2022). Enhancing mental health literacy in obsessive-compulsive disorder and reducing stigma via smartphone: A randomized controlled trial protocol. *Internet Interventions*, *29*, 100560. https://doi.org/https://doi.org/10.1016/j.invent.2022.100560

Cooper, D., Champion, S. M., Stavropoulos, L., & Grisham, J. R. (2021). How technology can enhance treatment: A scoping review of clinical interventions for anxiety and obsessive-compulsive spectrum disorders. *British Journal of Clinical Psychology*. https://doi.org/10.1111/bjc.12279 de la Cruz, L. F., Llorens, M., Jassi, A., Krebs, G., Vidal-Ribas, P., Radua, J., Hatch, S. L., Bhugra, D., Heyman, I., Clark, B., & Mataix-Cols, D. (2015). Ethnic inequalities in the use of secondary and tertiary mental health services among patients with obsessive–compulsive disorder. *The British Journal of Psychiatry*, *207*(6), 530-535. https://doi.org/10.1192/bjp.bp.114.154062

Deci, E. L., & Ryan, R. M. (2012). Self-determination theory.

Department of Health and Social Care. (2022). A plan for digital health and social care. *GOV.UK*. https://www.gov.uk/government/publications/a-plan-for-digital-health-and-social-care/a-plan-for-digital-health-and-social-care#section-2-our-vision-for-a-digital-future

Drieschner, K. H., Lammers, S. M. M., & van der Staak, C. P. F. (2004). Treatment motivation: An attempt for clarification of an ambiguous concept. *Clinical Psychology Review*, *23*(8), 1115-1137. https://doi.org/https://doi.org/10.1016/j.cpr.2003.09.003

Ferrando, C., & Selai, C. (2021). A systematic review and meta-analysis on the effectiveness of exposure and response prevention therapy in the treatment of Obsessive-Compulsive Disorder. *Journal of Obsessive-Compulsive and Related Disorders*, *31*, 100684. https://doi.org/https://doi.org/10.1016/j.jocrd.2021.100684

Ferreri, F., Bourla, A., Peretti, C.-S., Segawa, T., Jaafari, N., & Mouchabac, S. (2019). How New Technologies Can Improve Prediction, Assessment, and Intervention in Obsessive-Compulsive Disorder (e-OCD): Review. *JMIR Mental Health*, *6*(12), e11643. https://doi.org/10.2196/11643

Fineberg, N. A., Dell'Osso, B., Albert, U., Maina, G., Geller, D., Carmi, L., Sireau, N., Walitza, S., Grassi, G., Pallanti, S., Hollander, E., Brakoulias, V., Menchon, J. M., Marazziti, D., Ioannidis, K., Apergis-Schoute, A., Stein, D. J., Cath, D. C., Veltman, D. J., . . . Zohar, J. (2019). Early intervention for obsessive compulsive disorder: An expert consensus statement. *European Neuropsychopharmacology*, *29*(4), 549-565. https://doi.org/10.1016/j.euroneuro.2019.02.002

Fisher, P. L., & Wells, A. (2005). How effective are cognitive and behavioral treatments for obsessive–compulsive disorder? A clinical significance analysis. *Behaviour Research and Therapy*, *43*(12), 1543-1558. https://doi.org/10.1016/j.brat.2004.11.007

Friis-Healy, E. A., Nagy, G. A., & Kollins, S. H. (2021). It Is Time to REACT: Opportunities for Digital Mental Health Apps to Reduce Mental Health Disparities in Racially and Ethnically Minoritized Groups. *JMIR Ment Health*, *8*(1), e25456. https://doi.org/10.2196/25456

García-Soriano, G., Rufer, M., Delsignore, A., & Weidt, S. (2014). Factors associated with non-treatment or delayed treatment seeking in OCD sufferers: A review of the literature. *Psychiatry Research*, *220*(1), 1-10. https://doi.org/https://doi.org/10.1016/j.psychres.2014.07.009

Gershkovich, M., Middleton, R., Hezel, D. M., Grimaldi, S., Renna, M., Basaraba, C., Patel, S., & Simpson, H. B. (2021). Integrating Exposure and Response Prevention With a Mobile App to Treat Obsessive-Compulsive Disorder: Feasibility, Acceptability, and Preliminary Effects. *Behavior Therapy*, *52*(2), 394-405. https://doi.org/https://doi.org/10.1016/j.beth.2020.05.001

Glazier, K., Wetterneck, C., Singh, S., & Williams, M. (2015). Stigma and shame as barriers to treatment for obsessive-compulsive and related disorders. *Journal of Depression and Anxiety*, *4*(3), 191.

Goodwin, R., Koenen, K. C., Hellman, F., Guardino, M., & Struening, E. (2002). Helpseeking and access to mental health treatment for obsessive-compulsive disorder. *Acta Psychiatrica Scandinavica*, *106*(2), 143-149. https://doi.org/10.1034/j.1600-0447.2002.01221.x

Graham, A. K., Kwasny, M. J., Lattie, E. G., Greene, C. J., Gupta, N. V., Reddy, M., & Mohr, D. C. (2021). Targeting subjective engagement in experimental therapeutics for digital mental health interventions. *Internet Interv*, *25*, 100403. https://doi.org/10.1016/j.invent.2021.100403

Grover, S., & Dutt, A. (2011). Perceived burden and quality of life of caregivers in obsessive-compulsive disorder. *Psychiatry and Clinical Neurosciences*, *65*(5), 416-422. https://doi.org/10.1111/j.1440-1819.2011.02240.x

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field methods*, *18*(1), 59-82.

Hanley, T., Prescott, J., & Gomez, K. U. (2019). A systematic review exploring how young people use online forums for support around mental health issues. *Journal of Mental Health*, *28*(5), 566-576.

Henson, P., Wisniewski, H., Hollis, C., Keshavan, M., & Torous, J. (2019). Digital mental health apps and the therapeutic alliance: initial review. *BJPsych Open*, *5*(1). https://doi.org/10.1192/bjo.2018.86

Hezel, D. M., Rose, S. V., & Simpson, H. B. (2022). Delay to diagnosis in OCD. *Journal of Obsessive-Compulsive and Related Disorders*, *32*, 100709. https://doi.org/https://doi.org/10.1016/j.jocrd.2022.100709

Hiranandani, S., Ipek, S. I., Wilhelm, S., & Greenberg, J. L. (2023). Digital mental health interventions for obsessive compulsive and related disorders: A brief review of evidence-based interventions and future directions. *Journal of Obsessive-Compulsive and Related Disorders*, *36*, 100765. https://doi.org/https://doi.org/10.1016/j.jocrd.2022.100765

Hwang, H., Bae, S., Hong, J. S., & Han, D. H. (2021). Comparing effectiveness between a mobile app program and traditional cognitive behavior therapy in obsessive-compulsive disorder: evaluation study. *JMIR Mental Health*, *8*(1), e23778.

Jenkins-Guarnieri, M. A., Pruitt, L. D., Luxton, D. D., & Johnson, K. (2015). Patient perceptions of telemental health: Systematic review of direct comparisons to in-person psychotherapeutic treatments. *Telemedicine and e-Health*, *21*(8), 652-660.

Kazantzis, N., Deane, F. P., Ronan, K. R., & L'Abate, L. (2005). *Using homework assignments in cognitive behavior therapy*. Routledge.

Knapp, M., Henderson, J., & Patel, A. (2000). Costs of Obsessive-Compulsive Disorder: A Review. *Obsessive-Compulsive Disorder*, *4*, 253-299.

Kobori, O., Salkovskis, P. M., Read, J., Lounes, N., & Wong, V. (2012). A qualitative study of the investigation of reassurance seeking in obsessive–compulsive disorder. *Journal of Obsessive-Compulsive and Related Disorders*, *1*(1), 25-32. https://doi.org/https://doi.org/10.1016/j.jocrd.2011.09.001

Lecomte, T., Potvin, S., Corbière, M., Guay, S., Samson, C., Cloutier, B., Francoeur, A., Pennou, A., & Khazaal, Y. (2020). Mobile Apps for Mental Health Issues: Meta-Review of Meta-Analyses. *JMIR mHealth and uHealth*, *8*(5), e17458. https://doi.org/10.2196/17458

Lee, E. B., Hoepfl, C., Werner, C., & McIngvale, E. (2019). A review of tech-based self-help treatment programs for Obsessive-Compulsive Disorder. *Journal of Obsessive-Compulsive and Related Disorders*, *23*, 100473. https://doi.org/https://doi.org/10.1016/j.jocrd.2019.100473

Leeuwerik, T., Caradonna, G., Cavanagh, K., Forrester, E., Jones, A. M., Lea, L., Rosten, C., & Strauss, C. (2023). A thematic analysis of barriers and facilitators to participant engagement in group exposure and response prevention therapy for obsessive–compulsive disorder. *Psychology and Psychotherapy: Theory, Research and Practice*, *96*(1), 129-147. https://doi.org/10.1111/papt.12430

Lundström, L., Flygare, O., Andersson, E., Enander, J., Bottai, M., Ivanov, V. Z., Boberg, J., Pascal, D., Mataix-Cols, D., & Rück, C. (2022). Effect of Internet-Based vs Face-to-Face Cognitive Behavioral Therapy for Adults With Obsessive-Compulsive Disorder. *JAMA Network Open*, *5*(3), e221967. https://doi.org/10.1001/jamanetworkopen.2022.1967

Macy, A. S., Theo, J. N., Kaufmann, S. C., Ghazzaoui, R. B., Pawlowski, P. A., Fakhry, H. I., Cassmassi, B. J., & IsHak, W. W. (2013). Quality of life in obsessive compulsive disorder. *CNS Spectrums*, *18*(1), 21-33.

Marques, L., Leblanc, N. J., Weingarden, H. M., Timpano, K. R., Jenike, M., & Wilhelm, S. (2010). Barriers to treatment and service utilization in an internet sample of individuals with obsessive-compulsive symptoms. *Depression and Anxiety*, *27*(5), 470-475. https://doi.org/10.1002/da.20694

Mataix-Cols, D., Nakatani, E., Micali, N., & Heyman, I. (2008). Structure of obsessive-compulsive symptoms in pediatric OCD. *J Am Acad Child Adolesc Psychiatry*, *47*(7), 773-778. https://doi.org/10.1097/CHI.0b013e31816b73c0

Neary, M., & Schueller, S. M. (2018). State of the Field of Mental Health Apps. *Cognitive and Behavioral Practice*, *25*(4), 531-537. https://doi.org/10.1016/j.cbpra.2018.01.002

NHS England. (2016). *The Five Year Forward View for Mental Health*. https://www.england.nhs.uk/wp-content/uploads/2016/02/Mental-Health-Taskforce-FYFV-final.pdf

NICE. (2006). Obsessive-compulsive disorder: core interventions in the treatment of obsessive-compulsive disorder and body dysmorphic disorder.

Nicholas, J., Larsen, M. E., Proudfoot, J., & Christensen, H. (2015). Mobile Apps for Bipolar Disorder: A Systematic Review of Features and Content Quality. *Journal of Medical Internet Research*, *17*(8), e198. https://doi.org/10.2196/jmir.4581

Nicolini, H., Salin-Pascual, R., Cabrera, B., & Lanzagorta, N. (2018). Influence of Culture in Obsessive-compulsive Disorder and Its Treatment. *Current Psychiatry Reviews*, *13*(4), 285-292. https://doi.org/10.2174/2211556007666180115105935

Ociskova, M., Prasko, J., Cerna, M., Jelenova, D., Kamaradova, D., Latalova, K., & Sedlackova, Z. (2013). Obsessive compulsive disorder and stigmatization. *Activitas Nervosa Superior Rediviva*, *55*(1-2), 19-26.

Olatunji, B. O., Deacon, B. J., & Abramowitz, J. S. (2009). The Cruelest Cure? Ethical Issues in the Implementation of Exposure-Based Treatments. *Cognitive and Behavioral Practice*, *16*(2), 172-180. https://doi.org/https://doi.org/10.1016/j.cbpra.2008.07.003

Pinto, A., Pinto, A. M., Neziroglu, F., & Yaryura-Tobias, J. A. (2007). Motivation to change as a predictor of treatment response in obsessive compulsive disorder. *Ann Clin Psychiatry*, *19*(2), 83-87. https://doi.org/10.1080/10401230701334747

Pistrang, N., & Barker, C. (2012). Varieties of qualitative research: A pragmatic approach to selecting methods. In *APA handbook of research methods in psychology, Vol 2: Research designs: Quantitative, qualitative, neuropsychological, and biological.* (pp. 5-18). American Psychological Association. https://doi.org/10.1037/13620-001

Prentice, J. L., & Dobson, K. S. (2014). A review of the risks and benefits associated with mobile phone applications for psychological interventions. *Canadian Psychology / Psychologie canadienne*, *55*, 282-290. https://doi.org/10.1037/a0038113

Prescott, J., Hanley, T., & Ujhelyi Gomez, K. (2019). Why do young people use online forums for mental health and emotional support? Benefits and challenges. *British Journal of Guidance & Counselling*, *47*(3), 317-327.

Pung, A., Fletcher, S. L., & Gunn, J. M. (2018). Mobile App Use by Primary Care Patients to Manage Their Depressive Symptoms: Qualitative Study. *Journal of Medical Internet Research*, *20*(9), e10035. https://doi.org/10.2196/10035

Reger, G. M., Browne, K. C., Campellone, T. R., Simons, C., Kuhn, E., Fortney, J. C., Sayre, G. G., & Reisinger, H. S. (2017). Barriers and facilitators to mobile application use during PTSD treatment: Clinician adoption of PE coach. *Professional Psychology: Research and Practice*, *48*, 510-517. https://doi.org/10.1037/pro0000153

Reid, J. E., Laws, K. R., Drummond, L., Vismara, M., Grancini, B., Mpavaenda, D., & Fineberg, N. A. (2021). Cognitive behavioural therapy with exposure and response prevention in the treatment of obsessive-compulsive disorder: A systematic review and meta-analysis of randomised controlled trials. *Comprehensive Psychiatry*, *106*, 152223. https://doi.org/https://doi.org/10.1016/j.comppsych.2021.152223

Robinson, K. J., Rose, D., & Salkovskis, P. M. (2017). Seeking help for obsessive compulsive disorder (OCD): a qualitative study of the enablers and barriers conducted by a researcher with personal experience of OCD. *Psychology and Psychotherapy: Theory, Research and Practice*, *90*(2), 193-211. https://doi.org/10.1111/papt.12090

Robinson, P., Turk, D., Jilka, S., & Cella, M. (2019). Measuring attitudes towards mental health using social media: investigating stigma and trivialisation. *Social psychiatry and psychiatric epidemiology*, *54*, 51-58.

Roncero, M., Belloch, A., & Doron, G. (2019). Can brief, daily training using a mobile app help change maladaptive beliefs? Crossover randomized controlled trial. *JMIR mHealth and uHealth*, *7*(2), e11443.

Schwartz, C., Schlegl, S., Kuelz, A. K., & Voderholzer, U. (2013). Treatment-seeking in OCD community cases and psychological treatment actually provided to treatment-seeking patients: A systematic review. *Journal of Obsessive-Compulsive and Related Disorders*, *2*(4), 448-456. https://doi.org/10.1016/j.jocrd.2013.10.006

Senter, M. S., Patel, S. R., Dixon, L. B., Myers, R. W., & Simpson, H. B. (2021). Defining and Addressing Gaps in Care for Obsessive-Compulsive Disorder in the United States. *Psychiatric Services*, *72*(7), 784-793. https://doi.org/10.1176/appi.ps.202000296

Simonds, L. M., & Thorpe, S. J. (2003). Attitudes toward obsessive-compulsive disorders: An experimental investigation. *Social psychiatry and psychiatric epidemiology*, *38*, 331-336.

Smith-Merry, J., Goggin, G., Campbell, A., McKenzie, K., Ridout, B., & Baylosis, C. (2019). Social connection and online engagement: insights from interviews with users of a mental health online forum. *JMIR Mental Health*, *6*(3), e11084.

Spurgeon, J. A., & Wright, J. H. (2010). Computer-assisted cognitive-behavioral therapy. *Current psychiatry reports*, *12*, 547-552.

Statista. (2020). *Smartphone usage in the United Kingdom (UK) 2012-2019, by age*. https://www.statista.com/statistics/300402/smartphone-usage-in-the-uk-by-age/#:%7E:text=Smartphone%20usage%20in%20the%20United%20Kingdom%20has%20increased%20across%20all,to%2080%20percent%20by%202019

Subramaniam, M., Soh, P., Vaingankar, J. A., Picco, L., & Chong, S. A. (2013). Quality of Life in Obsessive-Compulsive Disorder: Impact of the Disorder and of Treatment. *CNS drugs*, *27*(5), 367-383. https://doi.org/10.1007/s40263-013-0056-z

Tetley, A., Jinks, M., Huband, N., & Howells, K. (2011). A systematic review of measures of therapeutic engagement in psychosocial and psychological treatment. *Journal of Clinical Psychology*, *67*(9), 927-941. https://doi.org/https://doi.org/10.1002/jclp.20811

Timpano, K. R., Çek, D., Rubenstein, L. M., Murphy, D., & Schmidt, N. B. (2014). Exploring the Association Between Obsessive-Compulsive Symptoms and Loneliness: Consideration of Specificity and Gender. *J Cogn Psychother*, *28*(4), 264-273. https://doi.org/10.1891/0889-8391.28.4.264

van Gemert-Pijnen, J. E., Nijland, N., van Limburg, M., Ossebaard, H. C., Kelders, S. M., Eysenbach, G., & Seydel, E. R. (2011). A holistic framework to improve the uptake and impact of eHealth technologies. *Journal of Medical Internet Research*, *13*(4), e1672.

Veale, D., & Roberts, A. (2014). Obsessive-compulsive disorder. *BMJ*, *348*(apr07 6), g2183-g2183. https://doi.org/10.1136/bmj.g2183

Wahl, K., Kordon, A., Kuelz, K. A., Voderholzer, U., Hohagen, F., & Zurowski, B. (2010). Obsessive-Compulsive Disorder (OCD) is still an unrecognised disorder: A study on the recognition of OCD in psychiatric outpatients. *European Psychiatry*, *25*(7), 374-377. https://doi.org/https://doi.org/10.1016/j.eurpsy.2009.12.003

Wasil, A. R., Palermo, E. H., Lorenzo-Luaces, L., & DeRubeis, R. J. (2022). Is There an App for That? A Review of Popular Apps for Depression, Anxiety, and Well-Being. *Cognitive and Behavioral Practice*, *29*(4), 883-901. https://doi.org/https://doi.org/10.1016/j.cbpra.2021.07.001

Weisel, K. K., Fuhrmann, L. M., Berking, M., Baumeister, H., Cuijpers, P., & Ebert, D. D. (2019). Standalone smartphone apps for mental health—a systematic review and meta-analysis. *npj Digital Medicine*, *2*(1). https://doi.org/10.1038/s41746-019-0188-8

WHO. (2017). *Depression and other common mental disorders: global health estimates*.

Wilhelm, S., Weingarden, H., Greenberg, J. L., Hoeppner, S. S., Snorrason, I., Bernstein, E. E., Mccoy, T. H., & Harrison, O. T. (2022). Efficacy of App-Based Cognitive Behavioral Therapy for Body Dysmorphic Disorder with Coach Support: Initial Randomized Controlled Clinical Trial. *Psychotherapy and psychosomatics*, *91*(4), 277-285. https://doi.org/10.1159/000524628

Williams, M., Sawyer, B., Ellsworth, M., Singh, S., & Tellawi, G. (2017). Obsessive-compulsive and related disorders in ethnoracial minorities: Attitudes, stigma, and barriers to treatment. In *The Wiley handbook of obsessive compulsive disorders, Vol. 1-2* (pp. 847-872). Wiley Blackwell. https://doi.org/10.1002/9781118890233.ch48

Williams, M. T., Domanico, J., Marques, L., Leblanc, N. J., & Turkheimer, E. (2012). Barriers to treatment among African Americans with obsessive-compulsive disorder.

Journal of Anxiety Disorders, *26*(4), 555-563. https://doi.org/10.1016/j.janxdis.2012.02.009

Wu, A., Scult, M. A., Barnes, E. D., Betancourt, J. A., Falk, A., & Gunning, F. M. (2021). Smartphone apps for depression and anxiety: a systematic review and meta-analysis of techniques to increase engagement. *npj Digital Medicine*, *4*(1). https://doi.org/10.1038/s41746-021-00386-8

Zheng, H., Luo, G., Yao, S., Wang, S., Guo, G., Quan, D., & Gao, J. (2021). Predictors for 12-month long-term outcome in patients with obsessive-compulsive disorder: The influence of duration of untreated illness and age at onset. *Journal of Psychiatric Research*, *144*, 202-207. https://doi.org/https://doi.org/10.1016/j.jpsychires.2021.10.019

Appendix 2-A: Practitioner Points for Submission to Journal

Practitioner Points:

- Mental health apps provide a valuable alternative to mental health support when barriers to conventional treatment exist.
- Using mental health apps with support helps to expand access to therapist guidance outside of weekly therapy sessions.
- Using mental health apps with therapist guidance is valuable in increasing adherence to treatment engagement.
- Mental health apps reduce loneliness of experiencing OCD by providing a platform to connect with a community of people living with OCD.

Appendix 2-B: Example of Initial Coded Transcript

Excerpt from interview with Lucy

R: And what was it that led you to look for apps in particular at the time? P: I think I knew I was experiencing these symptoms and wanted to be able to admit to myself and maybe start doing something about it. But I wasn't fully ready at the time to actually talk to my therapist about it. And so I think it was kind of just a middle ground. I won't completely bottle it up, I can try to work to work through some of these thoughts in some way on my own if I have an app that's tailored towards these kinds of symptoms. But I don't have to go through the anxiety of sharing it with another human being in front of me. So it was a middle ground I guess that felt more comfortable and doable at the time.	Symptom acknowledgement Readiness for disclosure Preference for OCD specific app Fear of judgement with people Middle ground Safety Emotional Comfort
R: How did having that middle ground help you at the time? P: I think it did definitely help to admit to myself that I was having these symptoms and it definitely helped with the psychoeducation piece of it. Learning a little more about OCD and OCD symptoms. I guess putting down your obsessions and they had lots of examples and stuff and it definitely helped me to shift my perspectives in terms of feeling like… I'm not the only person who has these kinds of thoughts. Maybe it doesn't necessarily mean that I'm a terrible person. So it gave me an outlet to dip my toe into at least being open about some these thoughts with myself if nobody else yet.	Symptom acknowledgement Self awareness Psychoeducation Middle grounds feels more comfortable and doable Sense of belonging Changing perspective Sense of normalisation Gateway to support Individual exploration
R: And how is that having that space was helpful to you? P: Just being able to have some recognition that these are thoughts that you know a lot of people with similar symptoms to me experience. Kind of start the process of learning a little more about what these kind of these thoughts… like how they work and the intrusive nature of them. Being able to start understanding a little better, you know, that okay maybe this isn't totally shameful.	Sense of belonging Sense of normalisation Validation Connecting with others Reducing Isolation Gateway to OCD treatment
R: And what was it about the app in particular that helped with that process? P: With that app in particular I remember they had a lot of information on there about OCD, and even though I still wasn't fully ready to think like 'Oh maybe I do have OCD' I did know that I was having some of those symptoms at least. A lot of the app was a lot of information about OCD and different articles from clinicians and stuff. And then the actual kind of interactive parts of the app, some of it was like putting your obsessions and kind of different examples of 'here's some common things that people with OCD might think about and have trouble with'. I think just kind of starting to see like 'Okay it's not just me, I'm not the only person in the world dealing with these kind of thoughts'.	Psychoeducation Developing awareness Interactive elements of self-reflection Sense of normalisation Sense of normalisation Validation
R: What is about that process that helps you to feel better? P: I think definitely it helped to lessen that shame a bit, and realising this is something that is well documented that lots of other people experience, and even though it took me a while to open up about it to other people. I would kind of spring some of it to different therapists, it took me a while to say 'hey I think I'm experiencing OCD symptoms'. It definitely started the process of me being able to sort of not be so ashamed about and learning that I could open up about this to people.	Reducing shame Connecting with others Catalyst to recognising OCD Catalyst to seeking support Reducing shame

Appendix 2-C: Example of Codes and Quotes for Theme 3

Analysis trail for Theme 3: Quandary of Connection

Theme	Preliminary Sub-themes	Example Codes	Example Quotes
Quandary of Connection	Understanding that I'm not alone	Social connection	"It makes me realise on an experiential level that I'm not alone" "when you meet with other people with OCD there's like camaraderie Like, You feel like, a connection to a group" "So before it seemed like this was very like it's just kind of me who has it and nobody can really help me with it. But then like hearing her talk about like her experiences and how like she got help and stuff was like really nice and it was able, we were able to connect over it"
		Normalisation	"Just being able to have some recognition... a lot of people with similar symptoms to me experience." "very helpful to actually see that there are so many other people in the field that suffer from the same endless symptoms and maybe the same topics which are obviously not always that easy to talk about" "I think it's always good to see that there's a community of people who have a similar experience"
		Validation	"Realising this is something that is well documented that lots of other people experience." "Just to me remind me that I wasn't the only person in the world because sometimes I thought that was like the only person left, you know?"
	Discovering strategies through peers	Helpful discoveries	"I think sometimes helpful to read stories or, or other pieces about people who have gone through certain trial, tribulations, whatever, right, come out the other side of it" "reading about their particular stories and things that's going on with them seems to help"
		Empowerment through connection	"Connection to a group that that can empathise whether you're struggling in life. Um, and that gives you more like fighting like spirit." "gives me an impetus to try to fight like OCD more"

Risks of communities	Triggering	“I started to have a bit of a weird relationship with it because it can be quite triggering, and a lot of the sort of community forums and things just didn’t really work for me” “I need to focus on myself a little bit more and yeah, not be reading about other people’s kind of intrusive thoughts and things” “People can have the tendency just to fuel each other” “I feel like for some things forums can be a bit of a spiral, and I think OCD is one of them. You know, people set each other off. Unintentionally, but still. I did try forums but I didn’t get on with it”
	Reassurance Seeking	“like a lot of people posting about their own experiences in a way that was sort of taking support from other people” “people were seeking reassurance on there as a compulsion and which is something that I do, but didn’t find it helpful to engage on a forum where other people were doing that as well.”
	Unhelpful discoveries	“I think it was just it gave me new and ideas for things I’d never thought about but then just popped into my head and in the context of OCD it was all just like a bit much” “You know, all these, it’s just very negative. Nothing constructive” “I will say where I’ve read a few things and like, oh, that’s something I hadn’t worried about before, but that’s a good one to worry about, right? So it’s also sometimes prompted like, maybe a little bit of negative pattern patterning”

Section 3: Critical Appraisal

Critical Reflections

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Critical Appraisal

The aim of this critical appraisal is initially to summarise the findings of the systematic literature review and the research paper, considering links between the two. I will then explore the strengths and limitations of the research paper, alongside clinical implications, and scope for future research. Lastly, I will reflect on my motivations for conducting research within this topic area and the reflexive thematic analysis used to analyse the data.

Research Findings

The research paper explored the perspectives of people living with Obsessive Compulsive Disorder (OCD) who have used apps to support their mental health. Reflexive thematic analysis (RTA) (Braun et al., 2023) was used to analyse the participants' accounts, which yielded the following themes: (1) Finding a way into OCD support; (3) The value of human guidance; and (3) The quandary of connections. These findings were discussed in the context of current literature, potential implications for reducing barriers to mental health support, and enhancing treatment outcomes when used as an adjunct to one-to-one therapy.

In the systematic literature review, thematic synthesis (Thomas & Harden, 2008) was used to explore young people (YP)'s perspectives of using mental health apps from current qualitative literature. This led to three themes being identified: (1) Readily available bite-sized support, (2) Reclaiming agency, and (3) Opportunities to connect. Similar to the research paper, the findings were considered in relation to their contribution to existing literature and their clinical implications for the use of mental health (MH) apps to support YP's mental health.

Although the two papers focused on different populations of interest, there were areas of commonalities noted between the two sets of findings. The theme of using MH apps as an access point to connect with other people experiencing similar difficulties emerged from both papers. Mental health difficulties continue to be stigmatised in public narratives (Sickel et al., 2014), leading to feelings of shame within individuals. This shame acts as a barrier to seeking support, as people express concerns around judgement and exclusion (Clement et al., 2015). Therefore, in being able to access platforms where similar experiences are shared, YP and people with OCD both described a sense of normalisation and validation of their experiences. Similarly, both groups highlighted the value gained from being able to access mental health support that is easily available and can be accessed within the privacy of a smartphone, highlighting the opportunity to use MH apps when stigma impacts acts as a barrier to seeking conventional mental health support for YP (Saporito et al., 2011) and people living with OCD (Glazier et al., 2015). As a result MH apps may be viewed as a stepping stone to MH support when barriers would impede this access otherwise.

A key difference that emerged between the two sets of findings concerned the concept of autonomy and agency. For YP, using MH apps helped them to gain a sense of control and autonomy over how they managed their mental health. Part of this was related to the highly prevalent preference for using MH apps to access support through brief exercises. This may be related to control, allowing YP to dictate how MH support can fit within their schedules, compared to conventional MH support where YP may feel they have less autonomy (Wilson & Deane, 2012). On the other hand, for people living with OCD, MH apps provided a platform with increased contact with therapists to provide the external accountability to maintain engagement with challenging OCD. As such, it may be that MH apps impact the level of control that people believe they have in relation to their health, also known as the health locus of control (HLOC) (Strudler et al., 1978). In this case, MH apps may facilitate an internal belief of control in YP through autonomy and agency, and an external belief of control for people living with OCD who gained more access to therapist guidance.

Strengths and Limitations of Research Paper

Participants

There is limited research qualitatively exploring the experiences of people living with OCD, and particularly their interactions and experiences with digital mental health platforms. A key strength of this research was in capturing the voices of people living with OCD, which led to novel findings in considering their needs and perspectives of how MH apps could be best positioned to support them. Additionally, the study highlights the importance of co-production of services delivering mental health care, which allow the needs of the end-user to form development and deployment of such support. This was evident in this study from the participants' experiences going against the common view of MH apps being largely viewed as a standalone system of support (Weisel et al., 2019).

Despite these strengths, a number of limitations exist within the research study, which will be explored. Whilst the study recruited participants across multiple countries, the participants were all from white, westernised university-educated backgrounds, apart from one participant who identified as Asian-American. OCD is a heterogenous condition (Mataix-Cols et al., 2008), which is also impacted by the context of the person's sociocultural environment, leading to variability in the experience of OCD and what barriers to treatment the individual faces. Therefore, it is important to be aware that the findings from this study do not present a universal perspective of MH apps by people living with OCD, as it is unknown whether these factors (culture, religion etc) also impact upon the experiences of using MH apps. Thus, if MH apps are to be a viable pathway for reducing disparities in mental health access to under-represented groups living with OCD, it would be helpful for future research to examine the perspectives of minority groups in relation to their experiences of MH apps. Recruitment may be aided by techniques which place a greater emphasis on increasing awareness of the research in minority focused spaces (e.g., community and religious centres, etc.).

Recruitment challenges and the limits of conducting research within the confines of a clinical training programme meant that the initial aim of recruiting a larger sample size for data collection was not met. Despite contacting OCD support groups through an OCD charity, I did not receive a response to my request to advertise the research study to group members. Whilst app stores indicated that large numbers of people have downloaded OCD apps, reaching those who had used MH apps and were willing to participate in a study proved to be a challenge. However, providing an incentive through a raffle prize, incorporated into the recruitment process following an approved amendment of the ethics application, aided in recruiting additional participants.

In spite of these difficulties, the focus of the interviews and data collection through the study was on ‘information power’ (Malterud et al., 2016), where the quality of the data can be considered to hold value when data collection is more relevant to the research question. Furthermore, Guest et al. (2006), studying saturation of qualitative interviews, have provided evidence that the essential components of themes can be elicited by the analysis of six interviews. Consequently, after analysis of the eight interviews in the current research paper, which was supported by research supervision, the themes that ensued provided novel and valuable contributions to the understanding of the research aims. Nonetheless, a larger and more diverse sample may have permitted a greater complexity and richness to the data gathered, which provides scope for future research to contribute additionally to this topic.

Data Collection

Prior to the current research, I had not had experience of conducting qualitative research interviews, and I therefore encountered a number of challenges, which formed part of the learning process.

On reflection, I have considered one aspect of this to be the influence of existing literature that has explored qualitative perspectives of MH app users. A number of these studies have been conducted with the aim of examining the acceptability and usability of MH apps as the focus, to either promote the evidence basis of the MH app in question (Grist et al., 2018) or to highlight how people with mental health difficulties are willing to use apps to manage their difficulties (Chan & Honey, 2022). Whilst the focus of this research was to explore the psychological perspectives of MH app use, I noticed that in my initial interviews, there were points when I had focused on people's preferences rather than their cognitive and emotional processes, which may have been influenced by these previous studies. Additionally, as conducting research interviews was novel to me, I have reflected on my anxiety around this which may have pulled me to focus the interview guide on solely steering the questions, likewise missing out on opportunities to expand certain responses further. However, research supervision, where I was able to conduct a pilot interview, and the feedback I received from my supervisors following my initial interview recordings were valuable in helping me to notice these tendencies. The use of a reflective journal was also helpful in identifying my own thoughts and feelings following the initial interviews, which I was able to explore in supervision meetings. As the recruitment process continued, I was able to feel accustomed to the interview guide and less anxious before and during the interviews, which allowed me to focus on exploring the participants' responses further.

During the interview process, I was aware that speaking about experiences of OCD can be challenging for people, particularly as fear of judgement can be a common experience (Robinson et al., 2017). From my own experience of working clinically with people with OCD, I have observed the validation clients experience from discussing a history of their diagnosis. As a result, I began the interviews by allowing participants to talk about their journey with OCD, which I felt was valuable in aiding rapport-building. However, whilst transcribing the interviews, I observed that this took up a large portion of the interview time for participants who wished to describe their experiences in detail, before MH apps came into the picture. In the future, collecting this information as part of the demographic details may help to provide more of a time structure whilst also providing context for the pathway to MH app use.

Another challenging aspect of the research process I noticed was differentiating between my role as a therapist and my role as a researcher during interviews. When participants discussed difficult experiences, I recognised the pull to respond in a therapeutic manner, most likely due to my familiarity with a clinician role compared to the new researcher role I was in. I explored this in my reflective journal following one interview:

"*I really noticed myself wanting to put on my 'therapist role' hat in that interview when hearing the distressing experiences participants described in their OCD journey. I think I was able to acknowledge this emphatically through my body language and verbal responses but still focused on the research questions*".

I recognised that providing participants with an information sheet and explaining the aims of the research prior to the interview helped to set the boundaries of the interview process. Additionally, participants were provided a debrief document following the interview that directed them to relevant support services and OCD charities should they experience any distress following the interview. I felt that these steps were helpful in ensuring the principle of ethical research that 'risk of harm should be no greater than that encountered in ordinary life' (Oates et al., 2021).

Quality of Findings

To support the validity and relevance of the outcomes from the research paper, guidelines provided by Yardley (2008) were implemented and engaged with throughout the research process. From my own experience and interest in the role of technology in mental health, I was aware of the assumptions and narratives I had of MH apps presenting a valuable opportunity to improve equity of access to mental health support. Additionally, my knowledge of OCD from the literature base (Clark, 2006) and experiences of working with people with OCD in clinical practice would have impacted my assumptions about the condition. Therefore, having an awareness of these suppositions was imperative (Finlay, 2002), as they could be put to one side to some extent during the research process through the use of “bracketing” (Gearing, 2004).

Firstly, I found that receiving supervision from both research supervisors was an invaluable process to provide expertise and perspective during the data collection, analysis process, theme development, and in facilitating reflections of my own position throughout the study. Furthermore, developing an understanding of the heterogenous nature of OCD was helpful in recognising that my previous experiences of working with people with OCD may not reflect how OCD manifests for the participants in the study. Additionally, I made use of a reflective diary to document my initial considerations for choosing the topic and specific research questions, reflections throughout the data collection, and the evolving interpretations of the data during data analysis. I believe that this process allowed me to recognise my position and remain open to the participants’ perspectives. Lastly, peer supervision was utilised throughout the process, supporting development of an open procedure through discussion and reflections with peers. By implementing such processes, my aim was to enhance the trustworthiness, validity and quality of the research presented.

In relation to the systematic literature review, the quality of findings of the included studies were assessed using the Critical Appraisal Skills Programme (CASP) tool where based on the scores, consistent strengths across the papers were observed in two criteria: appropriate recruitment strategies being utilised, and clear statements of findings being provided. These strengths provide credence to the themes identified in this review represent the specific qualitive experiences of YP following the use of a MH app use. Whilst two studies also considered the views of clinicians or caregivers, they were explicit in which quotes came from YP, allowing these to be included in this review. On the other hand, a consistent area of limitation was observed in relation to the consideration of the relationship between researcher and participants. This is pertinent in this area of research where researchers may also occupy the role of app developers, potentially impacting their bias and influence whilst developing research questions and data collection. Whilst it is unclear whether this impacted the results of the included papers, which may be a result of publication limitations, the current review used participant quotes to verify each theme and ensure the themes reflected their experiences.

Clinical Implications & Future Research

The findings of this research bring to light a few key areas for clinical practice and future research implications. The first theme highlighted how people with OCD in this study experienced MH apps to facilitate support when facing barriers that make conventional mental health support difficult to access. Within this, there were a range of barriers highlighting differing subjective experiences. This showed the need to consider a holistic approach when incorporating MH apps into mental health care provisions or as adjunct to conventional 1-1 therapy. From a service provider perspective, promoting the use of MH apps through communication channels (e.g. social media) and points of access (e.g. emergency rooms) may provide an avenue for people who face barriers to treatment to access support, paving the way for them to understand their experiences from a normalisation perspective (Glazier et al., 2015), encouraging treatment seeking and validation (Cooper et al., 2021).

However, it is important to note a caveat when considering incorporating MH apps; they often lack an evidence basis of their theoretical underpinnings or clinical effectiveness (Neary & Schueller, 2018). Issues with digital literacy and time constraints may mean that clinicians are not able to independently review MH apps based on their contents or research evidence before implementing them into their practice. As such, clinicians may benefit from identifying MH apps through organisations that provide this information through a framework of reviewing MH apps based on their content and evidence basis. Whilst this information is currently available, there remains a need to provide training for clinicians in digital literacy around MH apps. This would provide opportunities for clinicians to consider how specific aspects of MH apps could be used to increase treatment outcomes in conventional therapy. Furthermore, future research exploring the attitudes of clinicians towards the use of MH apps for people with OCD may prove beneficial in understanding the barriers and potential facilitators of their use, whilst identifying the areas of support that clinicians may require to consider MH apps further.

The heterogenous nature of OCD as exemplified by the varying experiences of participants in this study suggests a clinical implication for clinicians to identify specific areas within the context of the client’s experience of OCD, where MH apps could specifically be incorporated to provide additional support or to enhance therapeutic outcomes. This highlights a need for the use of MH apps to be informed by the process of psychological formulations. As highlighted by the value of social connections that participants noted in this study, a client who struggles with feelings of shame and lack of validation from their social relationships may benefit from using MH apps to connect to OCD forums. Again, this is an area requiring the consideration of the caveat that community spaces may be challenging to some people, and so discussion would be key before this is recommended. This may also provide an area for future research, as digital community spaces for OCD are becoming increasingly prevalent through MH apps, social media platforms, and digital forums. Exploring the experiences of these spaces through qualitative frameworks may be helpful in understanding how people interact with them, the psychological impact of using them, and how they can be best managed to reduce the negative impact. This has occurred in research with YPs' experiences (Hanley et al., 2019) and general mental health forums (McCosker, 2018), but not specifically in people with OCD.

Reflexivity

Why This Research?

My interest in exploring this area of research stemmed from a number of areas of my own life and clinical experience. I have always been interested in technology and had the opportunity to complete an intercalated year of computer science as part of my psychology degree. This experience led to my interest in exploring the intersection between technology and mental health. Part of this has derived from my own cultural background, where I have witnessed stigmatising narratives around mental health in addition to significant cultural and systemic barriers which prevent people from accessing mental health support. As a result, I have been interested in considering how technology - particularly apps, which are so prevalent in our daily lives - can be utilised to reduce or overcome the barriers to mental health support for different populations.

The focus of the research topic on people with OCD stemmed from my experience of working with a number of people living with OCD early on in my clinical training. In hearing the difficult journeys people faced from the onset of OCD, where shame and stigma were prevalent in the challenges of going through the mental healthcare system, I was able to become aware of the obstacles that either stopped or delayed access to appropriate and timely mental health support. In addition, incorporating exposure work in my interventions highlighted the challenging nature of ERP, which clients often found too difficult to complete between sessions. Consequently, I became interested in considering whether smartphones and apps could support this process. In exploring the available literature and evidence base of MH apps through a narrative review, I found a growing field of quantitative research into OCD apps (Cerea et al., 2020; Gershkovich et al., 2021; Roncero et al., 2018), but no studies exploring the experiences or perspectives of people with OCD on MH apps from a qualitative lens. I felt this research would contribute to a growing body of literature exploring the perspectives of people with different mental health conditions towards MH apps (Dederichs et al., 2021; Goodwin et al., 2016; Holtz et al., 2020).

Upon exploring the literature for the research paper, I came across a number of qualitative studies looking at YP's views and experiences of different mental health apps. This made me reflect on my clinical placement working with YP, where I discovered how established smartphones were in their lives, and in some ways formed part of their identity. I considered how MH apps may help YP to manage the long waiting times they faced to access support and difficulty in trusting and opening up to mental health professionals (Aguirre Velasco et al., 2020). Synthesising the perspectives from current research would help inform how YP viewed MH apps and how they may be best placed in reducing the challenges and barriers that are present for YP struggling with mental health difficulties.

Reflexive Thematic Analysis

As previously noted, I approached the research from a position of zero experience conducting qualitative research and considered different approaches to data analysis (RTA, Interpretative phenomenological analysis (IPA), Grounded theory). In designing the research paper, factors such as the heterogenous nature of OCD, the sampling across multiple countries, and variability in MH app use meant that RTA was more appropriate compared to IPA (Smith et al., 1999), as it provided a greater level of flexibility to identify patterned meaning across a dataset that had not been explored previously (Braun & Clarke, 2019). In addition, my limited experience within this topic lent itself to using RTA, as Braun and Clarke (2019) note that the subjectivity of the researcher is seen as a lens through which the data is understood and analysed in RTA, rather than a negative source of bias.

Whilst IPA and RTA both provide the flexibility not to be defined by a specific epistemological position, when considering the context of the factors noted above, RTA was considered suitable, being in line with my own stance of critical realism (Fletcher, 2017). In the context of this research, critical realism assumes that there is an underlying reality, as exemplified by the participants’ accounts of how they used MH apps - but it assumes that this reality is examined through subjective experiences, which relates to the research experience of exploring participants’ different experiences of OCD, how MH apps impacted barriers to treatment, and the psychological effect of engaging with MH apps. An inductive approach to RTA was used, as this allows for themes to be developed from the participants’ personal accounts, as opposed to depending on pre-established themes or a fixed theoretical framework - appropriate given the lack of previous research in this area. Meaning of the data was acquired using both semantic and latent analysis, to capture the explicit experiences of the participants and the concepts and assumptions underpinning such experiences respectively.

Grounded theory (Thornberg & Charmaz, 2014) is also a methodology that was considered. The objective of grounded theory as a methodology is to generate new theories based on data examining people's actions and the processes behind them. Considering the goals of my research and the focus on understanding peoples’ experiences and beliefs as opposed to constructing a theory, grounded theory was not deemed to be a suitable methodological approach for the study. Additionally, the larger sample size required for a suitable set of data in grounded theory may have proved challenging given the recruitment difficulties that were present in this study. Conversely, the findings of this study have highlighted different processes and contexts that lead people with OCD to incorporate MH apps into their lives, which may align with future research using grounded theory to develop a model of pathways to MH apps. This may support the current research and elucidate further how MH apps could fit within current service provisions.

Overall, it can be debated that attempting to determine a single ideal methodology to analyse qualitative data is both impractical and futile (Braun & Clarke, 2021). It may be that alternative methods could have been utilised in this study, which could have resulted in similar valuable results. The crucial factor is aligning the research design and procedure with the aims of the research, the researcher's epistemological position, and the relevant aspects of the topic being explored (Levitt et al., 2017).

References

Aguirre Velasco, A., Cruz, I. S. S., Billings, J., Jimenez, M., & Rowe, S. (2020). What are the barriers, facilitators and interventions targeting help-seeking behaviours for common mental health problems in adolescents? A systematic review. *BMC Psychiatry*, *20*(1). https://doi.org/10.1186/s12888-020-02659-0

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative research in sport, exercise and health*, *11*(4), 589-597.

Braun, V., & Clarke, V. (2021). Can I use TA? Should I use TA? Should I not use TA? Comparing reflexive thematic analysis and other pattern-based qualitative analytic approaches. *Counselling and Psychotherapy Research*, *21*(1), 37-47. https://doi.org/10.1002/capr.12360

Braun, V., Clarke, V., & Hayfield, N. (2023). Thematic analysis: A reflexive approach. In. SAGE Publications.

Cerea, S., Ghisi, M., Bottesi, G., Carraro, E., Broggio, D., & Doron, G. (2020). Reaching reliable change using short, daily, cognitive training exercises delivered on a mobile application: The case of Relationship Obsessive Compulsive Disorder (ROCD) symptoms and cognitions in a subclinical cohort. *Journal of Affective Disorders*, *276*, 775-787. https://doi.org/https://doi.org/10.1016/j.jad.2020.07.043

Chan, A. H. Y., & Honey, M. L. (2022). User perceptions of mobile digital apps for mental health: Acceptability and usability-An integrative review. *Journal of psychiatric and mental health nursing*, *29*(1), 147-168.

Clark, D. A. (2006). *Cognitive-Behavioral Therapy for OCD*. Guilford Publications. https://books.google.co.uk/books?id=rFFinoEm6jsC

Clement, Schauman, O., Graham, T., Maggioni, F., Evans-Lacko, S., Bezborodovs, N., Morgan, C., Rüsch, N., Brown, J. S., & Thornicroft, G. (2015). What is the impact of mental health-related stigma on help-seeking? A systematic review of quantitative and qualitative studies. *Psychological Medicine*, *45*(1), 11-27.

Cooper, D., Champion, S. M., Stavropoulos, L., & Grisham, J. R. (2021). How technology can enhance treatment: A scoping review of clinical interventions for anxiety and obsessive-compulsive spectrum disorders. *British Journal of Clinical Psychology*. https://doi.org/10.1111/bjc.12279

Dederichs, M., Weber, J., Pischke, C. R., Angerer, P., & Apolinário-Hagen, J. (2021). Exploring medical students' views on digital mental health interventions: A qualitative study. *Internet Interventions*, *25*, 100398. https://doi.org/https://doi.org/10.1016/j.invent.2021.100398

Finlay, L. (2002). "Outing" the researcher: The provenance, process, and practice of reflexivity. *Qualitative health research*, *12*(4), 531-545.

Gearing, R. E. (2004). Bracketing in research: A typology. *Qualitative health research*, *14*(10), 1429-1452.

Gershkovich, M., Middleton, R., Hezel, D. M., Grimaldi, S., Renna, M., Basaraba, C., Patel, S., & Simpson, H. B. (2021). Integrating Exposure and Response Prevention With a Mobile App to Treat Obsessive-Compulsive Disorder: Feasibility, Acceptability, and Preliminary Effects. *Behavior Therapy*, *52*(2), 394-405. https://doi.org/https://doi.org/10.1016/j.beth.2020.05.001

Glazier, K., Wetterneck, C., Singh, S., & Williams, M. (2015). Stigma and shame as barriers to treatment for obsessive-compulsive and related disorders. *Journal of Depression and Anxiety*, *4*(3), 191.

Goodwin, J., Cummins, J., Behan, L., & O'Brien, S. M. (2016). Development of a mental health smartphone app: perspectives of mental health service users. *Journal of Mental Health*, *25*(5), 434-440. https://doi.org/10.3109/09638237.2015.1124392

Grist, R., Porter, J., & Stallard, P. (2018). Acceptability, use, and safety of a mobile phone app (BlueIce) for young people who self-harm: Qualitative study of service users' experience. *JMIR Mental Health*, *5*(1). https://doi.org/doi:

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field methods*, *18*(1), 59-82.

Hanley, T., Prescott, J., & Gomez, K. U. (2019). A systematic review exploring how young people use online forums for support around mental health issues. *Journal of Mental Health*, *28*(5), 566-576. https://doi.org/10.1080/09638237.2019.1630725

Holtz, B. E., McCarroll, A. M., & Mitchell, K. M. (2020). Perceptions and Attitudes Toward a Mobile Phone App for Mental Health for College Students: Qualitative Focus Group Study. *JMIR Form Res*, *4*(8), e18347. https://doi.org/10.2196/18347

Levitt, H. M., Motulsky, S. L., Wertz, F. J., Morrow, S. L., & Ponterotto, J. G. (2017). Recommendations for designing and reviewing qualitative research in psychology: Promoting methodological integrity. *Qualitative Psychology*, *4*(1), 2.

Malterud, K., Siersma, V. D., & Guassora, A. D. (2016). Sample Size in Qualitative Interview Studies: Guided by Information Power. *Qual Health Res*, *26*(13), 1753-1760. https://doi.org/10.1177/1049732315617444

Mataix-Cols, D., Nakatani, E., Micali, N., & Heyman, I. (2008). Structure of obsessive-compulsive symptoms in pediatric OCD. *J Am Acad Child Adolesc Psychiatry*, *47*(7), 773-778. https://doi.org/10.1097/CHI.0b013e31816b73c0

McCosker, A. (2018). Engaging mental health online: Insights from beyondblue’s forum influencers. *New Media & Society*, *20*(12), 4748-4764. https://doi.org/10.1177/1461444818784303

Neary, M., & Schueller, S. M. (2018). State of the Field of Mental Health Apps. *Cognitive and Behavioral Practice*, *25*(4), 531-537. https://doi.org/10.1016/j.cbpra.2018.01.002

Oates, J., Carpenter, D., Fisher, M., Goodson, S., Hannah, B., Kwiatowski, R., Prutton, K., Reeves, D., & Wainwright, T. (2021). BPS code of human research ethics.

Robinson, K. J., Rose, D., & Salkovskis, P. M. (2017). Seeking help for obsessive compulsive disorder (OCD): a qualitative study of the enablers and barriers conducted by a researcher with personal experience of OCD. *Psychology and Psychotherapy: Theory, Research and Practice*, *90*(2), 193-211. https://doi.org/10.1111/papt.12090

Roncero, M., Belloch, A., & Doron, G. (2018). A novel approach to challenging OCD related beliefs using a mobile-app: An exploratory study. *Journal of Behavior Therapy and Experimental Psychiatry*, *59*, 157-160. https://doi.org/https://doi.org/10.1016/j.jbtep.2018.01.008

Saporito, J. M., Ryan, C., & Teachman, B. A. (2011). Reducing stigma toward seeking mental health treatment among adolescents. *Stigma research and action*, *1*(2), 9.

Sickel, A. E., Seacat, J. D., & Nabors, N. A. (2014). Mental health stigma update: A review of consequences. *Advances in mental health*, *12*(3), 202-215. https://doi.org/10.1080/18374905.2014.11081898

Smith, J. A., Jarman, M., & Osborn, M. (1999). Doing interpretative phenomenological analysis. *Qualitative health psychology: Theories and methods*, *1*, 218-240.

Strudler, Barbara, & Kenneth. (1978). Locus of control and health: A review of the literature. *Health education monographs*, *6*(1), 107-117.

Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Medical Research Methodology*, *8*(1), 45. https://doi.org/10.1186/1471-2288-8-45

Thornberg, R., & Charmaz, K. (2014). Grounded theory and theoretical coding. *The SAGE handbook of qualitative data analysis*, *5*, 153-169.

Weisel, K. K., Fuhrmann, L. M., Berking, M., Baumeister, H., Cuijpers, P., & Ebert, D. D. (2019). Standalone smartphone apps for mental health—a systematic review and meta-analysis. *npj Digital Medicine*, *2*(1). https://doi.org/10.1038/s41746-019-0188-8

Wilson, C. J., & Deane, F. P. (2012). Brief report: Need for autonomy and other perceived barriers relating to adolescents' intentions to seek professional mental health care. *Journal of Adolescence*, *35*(1), 233-237. https://doi.org/10.1016/j.adolescence.2010.06.011

Yardley, L. (2008). Demonstrating validity in qualitative psychology. *Qualitative Psychology: A Practical Guide to Research Methods, Vol. 2,* 235-251.

Section 4: Ethics Form

Ethics proposal for the empirical study: The perspectives of people with OCD on using mobile applications to support their mental health

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Word count: 3838 (excluding references, tables and appendices)

Ethics Form

Faculty of Health and Medicine Research Ethics Committee (FHMREC)

Lancaster University

Application for Ethical Approval for Research

for additional advice on completing this form, hover cursor over 'guidance'.

Guidance on completing this form is also available as a word document

Title of Project: The perspectives of people with OCD on using mobile applications to support their mental health

Name of applicant/researcher: Faromarz Nasiri

ACP ID number (if applicable)*:

Funding source (if applicable)

Grant code (if applicable):

***If your project has *not* been costed on ACP, you will also need to complete the Governance Checklist [link].**

Type of study

☐ Involves existing documents/data only, or the evaluation of an existing project with no direct contact with human participants. **Complete sections one, *two* and four of this form**

☒ Includes *direct* involvement by human subjects. **Complete sections one, *three* and four of this form**

SECTION ONE

1. Appointment/position held by applicant and Division within FHM Trainee Clinical Psychologist; Division of Health Research

2. Contact information for applicant:

E-mail: f.nasiri@lancaster.ac.uk

Telephone: 07590824411

Address:

Division of Health Research, Lancaster University

Health Innovation One

Sir John Fisher Drive,

Lancaster University

Lancaster, LA1 4AT

3. **Names and appointments of all members of the research team (including degree where applicable)**

Research Supervisor

Dr Ian Smith, Research Director, Doctorate in Clinical Psychology, Lancaster University

E-mail: i.smith@lancaster.ac.uk

Dr Miriam Sturdee, Computing and Communications, Lancaster University

Email: m.sturdee@lancaster.ac.uk

3. If this is a student project, please indicate what type of project by marking the relevant box/deleting as appropriate: (please note that UG and taught masters projects should complete **FHMREC form UG-tPG**, following the procedures set out on the FHMREC website

PG Diploma ☐ Masters by research ☐ PhD Thesis ☐ PhD Pall. Care ☐

PhD Pub. Health ☐ PhD Org. Health & Well Being ☐ PhD Mental Health ☐ MD ☐

DClinPsy SRP ☐ [if SRP Service Evaluation, please also indicate here: ☐] DClinPsy Thesis ☒

4. Project supervisor(s), if different from applicant: Dr Ian Smith, Dr Miriam Sturdee

5. **Appointment held by supervisor(s) and institution(s) where based (if applicable)**: See above (question 3)

SECTION TWO

Complete this section if your project involves existing documents/data only, or the evaluation of an existing project with no direct contact with human participants

1. Anticipated project dates (month and year)
Start date: End date:

2. Please state the aims and objectives of the project (no more than 150 words, in lay-person's language):

Data Management

For additional guidance on data management, please go to Research Data Management *webpage, or email the RDM support email:* rdm@lancaster.ac.uk

3. Please describe briefly the data or records to be studied, or the evaluation to be undertaken.

4a. How will any data or records be obtained?

4b. Will you be gathering data from websites, discussion forums and on-line 'chat-rooms'

4c. If yes, where relevant has permission / agreement been secured from the website moderator?

4d. If you are only using those sites that are open access and do not require registration, have you made your intentions clear to other site users?

4e. If no, please give your reasons

5. What plans are in place for the storage, back-up, security and documentation of data (electronic, digital, paper, etc)? Note who will be responsible for deleting the data at the end of the storage period. Please ensure that your plans comply with General Data Protection Regulation (GDPR) and the (UK) Data Protection Act 2018.

6a. Is the secondary data you will be using in the public domain?

6b. If NO, please indicate the original purpose for which the data was collected, and comment on whether consent was gathered for additional later use of the data.

Please answer the following question *only* if you have not completed a Data Management Plan for an external funder

7a. How will you share and preserve the data underpinning your publications for at least 10 years e.g. PURE?

7b. Are there any restrictions on sharing your data?

8. Confidentiality and Anonymity

a. Will you take the necessary steps to assure the anonymity of subjects, including in subsequent publications?

b. How will the confidentiality and anonymity of participants who provided the original data be maintained?

9. What are the plans for dissemination of findings from the research?

10. What other ethical considerations (if any), not previously noted on this application, do you think there are in the proposed study? How will these issues be addressed?

SECTION THREE

Complete this section if your project includes *direct* involvement by human subjects

1. Summary of research protocol in lay terms (indicative maximum length 150 words):

Mental health apps are being increasingly used by individuals to support their difficulties. However, they also come with challenges such as low uptake and lack of sustained engagement, that can be addressed by considering the experiences of the individuals using them to inform their development and recommendation. Whilst this has been considered for individuals with difficulties such as depression or psychosis, there is little research with those who experience OCD. Therefore, this study will use a qualitative approach to identify themes around the barriers and facilitators of using mental health apps to support difficulties associated with OCD. Individual interviews will be conducted with 12-15 adult participants who have used a mental health app in the last 12 months. Participants will be recruited through OCD charities where the research will be advertised. The identified themes will be discussed in the write up with reference to what they can tell health professionals, services, and developers about the best way of creating and recommending apps that are engaging, acceptable and sustainable.

2. **Anticipated project dates (month and year only**)

Start date: April 2022 End date: March 2023

Data Collection and Management

For additional guidance on data management, please go to Research Data Management *webpage, or email the RDM support email:* rdm@lancaster.ac.uk

3. Please describe the sample of participants to be studied (including maximum & minimum number, age, gender):

Participants will be individuals with a self-reported diagnosis of OCD who have substantially engaged with a mental health app(s) to support their OCD difficulties. The participants' OCD diagnosis may have been given by a health professional or self-diagnosed. Participants will have used a mental health app in the past 12 months. This time frame was chosen to allow participants recent exposure to mental health apps and be able to reflect on their experiences of this.

Participants will be male and female, and over the age of 18 - there will be no maximum age limit stipulated for this study. Participants will be required to speak English, as there are no financial resources to fund the use of interpreters.

12-15 participants will be recruited to ensure sufficient data for analysis. Recruitment will be stopped when data sufficiency is reached; that is, based on analysis of transcripts, no additional themes are being generated.

If fewer than 12 participants are recruited, a second route of recruitment will be used as described further in section 4. Due to time limitations, if fewer than 12 participants are recruited overall, analysis will be conducted with the data available from the participants recruited.

4. How will participants be recruited and from where? Be as specific as possible. Ensure that you provide the *full versions* of all recruitment materials you intend to use with this application (eg adverts, flyers, posters).

Two stages of recruitment have been planned, the second of which will only take place if the target number of participants cannot be gained from the first stage.

Recruitment will in the first stage occur through OCD organisations and charities (e.g., OCD-UK, OCD Action, TOP UK, Anxiety UK). Contact has been made with these organisations with three (OCD Action, TOP UK, iOCD Foundation) having responded stating their requirements for research to be advertised on their websites (i.e., research information and ethics approval documents). TOP UK will also advertise the project on social media platforms. Anxiety UK has a submission form for research to be listed on their research participation page.

If a sufficient number of participants are not recruited at this stage, the student researcher will create social media accounts (on Twitter and Reddit), related to the study and share the recruitment poster on social media inviting interested eligible individuals to make contact via email.

The student researcher will also share the recruitment poster within Facebook groups related to OCD. The student researcher's Facebook profile is private therefore personal information will not be accessible to members of the public. In addition, accounts related to OCD on Instagram will be contacted to share the recruitment poster through their accounts.

5. Briefly describe your data collection and analysis methods, and the rationale for their use.

Semi-structured qualitative interviews will be used, using thematic analysis as described by Braun and Clarke (2006), to identify common themes across participant accounts.

Interview data will be transcribed by the student researcher.

Participants will also complete a demographics and technology use questionnaire to contextualise the sample.

6. What plan is in place for the storage, back-up, security and documentation of data (electronic, digital, paper, etc.)? Note who will be responsible for deleting the data at the end of the storage period. Please ensure that your plans comply with General Data Protection Regulation (GDPR) and the (UK) Data Protection Act 2018.

For the duration of the research project, data will be stored electronically on the university's secure encrypted server or in university-approved cloud-based storage.

Once the research is completed, video and audio recordings of interviews will be deleted, and the anonymised transcriptions of interviews will be transferred electronically to the Doctorate in Clinical Psychology Research Co-Ordinator using a secure method supported by the University. These transcripts will be stored for 10 years before being deleted.

7. Will audio or video recording take place? ☐ no ☒ audio ☒ video

a. Please confirm that portable devices (laptop, USB drive etc) will be encrypted where they are used for identifiable data. If it is not possible to encrypt your portable devices, please comment on the steps you will take to protect the data.

Dependent upon the software chosen by the participant, video may be recorded using in-application features (e.g. recording directly within Microsoft Teams). These files will be stored on the university's secure encrypted server or University-approved secure cloud storage. Should this not be an option (that is, if the interview is completed in a program without this facility or in person), audio will be recorded using a digital audio recorder; this device cannot be encrypted, and data will therefore be transferred, as soon as practicable following completion of each interview, to the university's secure encrypted server or University-approved secure cloud storage.

b What arrangements have been made for audio/video data storage? At what point in the research will tapes/digital recordings/files be destroyed?

Video and/or audio recordings of interviews will be stored on the university's secure encrypted server or university-approved secure cloud storage until the research has been examined; at this point, the video/audio files will be deleted.

Please answer the following questions *only* if you have not completed a Data Management Plan for an external funder

8a. How will you share and preserve the data underpinning your publications for at least 10 years e.g. PURE?

Once the research is completed, video and audio recordings of interviews will be deleted, and the anonymised transcriptions of interviews will be transferred electronically to the Doctorate in Clinical Psychology Research Co-Ordinator using a secure method supported by the University. These transcripts will be stored for 10 years before being deleted.

8b. Are there any restrictions on sharing your data ?

This research project will involve a small sample, thus there is a small risk that participants may be identifiable through their responses. As a result, data will not be shared.

If any participant requests a copy of their data, this will be provided to them by the researcher at the end of their participation in the study.

9. Consent
a. Will you take all necessary steps to obtain the voluntary and informed consent of the prospective participant(s) or, in the case of individual(s) not capable of giving informed consent, the permission of a legally authorised representative in accordance with applicable law? yes

b. Detail the procedure you will use for obtaining consent?
Participants will receive the Participant Information Sheet and Consent Form prior to the interview.

If the interview is conducted remotely (as is anticipated will be the case with most participants) via Microsoft Teams or telephone. then the participant will complete the consent form in advance and return it via email prior to the interview. In the event that the participant has not completed the consent form prior to the remote interview, the contents of the consent form will be read over the phone or via Microsoft Teams. A record of verbal consent will be made and stored as a separate recording, stored on the University server; separate to the interview.

If the interview is being conducted in person and the consent form has not been completed beforehand, then the participant will be provided the consent form to read and sign prior to starting the interview.

Participants can stop the study at any point (by choosing not to take part in the interview).

10. What discomfort (including psychological eg distressing or sensitive topics), inconvenience or danger could be caused by participation in the project? Please indicate plans to address these potential risks. State the timescales within which participants may withdraw from the study, noting your reasons.

No major discomfort or distress is anticipated from participation in this project; however, it is possible that participants will find it upsetting to talk about their mental health condition or potential negative experiences with a mental health app. If a participant does become distressed during the interview, then the researcher will offer to stop the interview and will offer the participant a break. The participant will then be given the option of either stopping, continuing with the interview or arranging to complete the interview at a later date.

Participants will be given the contact information of relevant support services (i.e., OCD-UK) as part of their participant information sheet and debrief sheet in case of experiencing distress. Participants will also be advised to contact their GP if they require support.

Participants are welcome to withdraw from the study at any time before or during the interview and up to 2 weeks following their interview when it is expected that the interview will have been transcribed.

11. What potential risks may exist for the researcher(s)? Please indicate plans to address such risks (for example, noting the support available to you; counselling considerations arising from the sensitive or distressing nature of the research/topic; details of the lone worker plan you will follow, and the steps you will take).

All contact with participants and organisations will be made through the researcher's University e-mail account or a University mobile phone for research purposes.

Due to the small number of participants required, lone working will be avoided if possible. The preferred route for interviews will be remotely.

However, to provide participant choice, in-person interviews will be offered. If this is to occur in the participant's home or place of work, the Lone Worker Policy of University of Lancaster will be adhered to. The trainee will assign a buddy (from their cohort) who they will give interview details to. These details will include where the researcher is going to conduct their interview and with whom; this information will be enclosed in an envelope or a password protected document. The researcher will contact the buddy when they leave the interview. If the buddy does not hear from the researcher then they will attempt to contact the researcher themselves. However, if the buddy cannot get in contact with the researcher then they will open the envelope/document and telephone the police.

If the study is advertised on social media by the researcher, an account will be made for each platform used with the username relating to the study so that personal social media accounts are not used.

12. Whilst we do not generally expect direct benefits to participants as a result of this research, please state here any that result from completion of the study.

There may be no direct benefit to participation in this study, however, it is hoped that participants may find it validating to talk about their perspectives of using mental health apps and therefore may find it a positive experience to participate in this study. Furthermore, it is hoped that this research will inform the future development and consideration of mental health apps, particularly for people with OCD.

13. Details of any incentives/payments (including out-of-pocket expenses) made to participants:

~~Participants will not be paid to take part~~. It is anticipated that most interviews will take place remotely, and will not incur expenses. However, if an interview were to take place in person, participants will be provided expenses up to £20 for travel costs. It is possible that not all potential participants will have access to video calling equipment (e.g., webcam/microphone), however given the nature of the study which focuses on mobile applications this is considered unlikely.

Due to difficulties in recruiting enough participants for the research project, a financial incentive will be offered to participants in the form of being entered into a prize draw to win a £50 Amazon voucher. Participants which have previously taken part in the study will be offered entry into this prize draw by emailing them on the email address they initially contacted the student researcher. The voucher will be paid for using the student researcher's CPD budget as part of the DClinpsy programme. This has been agreed by the DClinPsy research coordinator and research director.

The incentive will not impact the anonymity of the participants. If participants enter into the participation prize draw, they will be informed that their email addresses will be stored in a secure file. This will be destroyed 1 week after the final interview has been completed and a winner is randomly selected. The winner will be emailed to inform them of their prize winnings.

14. Confidentiality and Anonymity

a. Will you take the necessary steps to assure the anonymity of subjects, including in subsequent publications? yes

b. Please include details of how the confidentiality and anonymity of participants will be ensured, and the limits to confidentiality.

The personal information that participants provide will be kept confidential. The data collected for this study will be stored securely and only the researchers conducting this study will have access to the raw data.

Audio recordings from the interviews will be kept until thesis examination and then securely destroyed. Lancaster University will keep copies of the interview transcriptions and the consent forms electronically for 10 years after the study has finished or 10 years from publication, whichever is longer. At the end of this time, they will be securely destroyed. Files held on the computer will be encrypted (meaning no one other than the researchers can access them) and the computer itself will be password protected. The typed transcript interviews will be made anonymous by removing any identifying information. Anonymised direct quotations may be used in the report or in publications of the study. Therefore, confidentiality cannot be guaranteed but anonymity will be as far as is possible. Personal demographic data collected by the researcher will be confidential and will be kept separately to interview responses.

15. If relevant, describe the involvement of your target participant group in the *design and conduct* of your research.

Contact was made with the organisers of an OCD support group network in order for individuals with lived experience of OCD to provide feedback on the supporting materials that will be provided to participants, however no response was received.

Subsequently, a member of the Lancaster University Public Involvement Network (LUPIN) with lived experienced of mental health difficulties reviewed the following documents: advertising poster, participant information sheet, consent form, debrief sheet, and topic guide.

16. What are the plans for dissemination of findings from the research? If you are a student, include here your thesis.

Data will be seen only by members of the research team including the student and supervisors.

In terms of dissemination, the research project will form part of the applicant's thesis. A presentation on the thesis project will be given to members of the Doctorate in Clinical Psychology department and other interested parties.

In addition, publication will be sought in appropriate academic and/or professional journal(s) so that findings can contribute to improvements in the care of the target population.

17. What particular ethical considerations, not previously noted on this application, do you think there are in the proposed study? Are there any matters about which you wish to seek guidance from the FHMREC?

SECTION FOUR: signature

Applicant electronic signature: Faromarz Nasiri Date 01/09/2021

Student applicants: please tick to confirm that your supervisor has reviewed your application, and that they are happy for the application to proceed to ethical review ☒

Project Supervisor name (if applicable): Dr Ian Smith Date application discussed 01/10/2021

Submission Guidance

1. Submit your FHMREC application by email to Becky Case (fhmresearchsupport@lancaster.ac.uk) as two separate documents:
    i. **FHMREC application form.** Before submitting, ensure all guidance comments are hidden by going into 'Review' in the menu above then choosing *show markup>balloons>show all revisions in line.*
    ii. **Supporting materials.** Collate the following materials for your study, if relevant, into a single word document:
        a. Your full research proposal (background, literature review, methodology/methods, ethical considerations).
        b. Advertising materials (posters, e-mails)
        c. Letters/emails of invitation to participate
        d. Participant information sheets

   e. Consent forms
   f. Questionnaires, surveys, demographic sheets
   g. Interview schedules, interview question guides, focus group scripts
   h. Debriefing sheets, resource lists

Please note that you DO NOT need to submit pre-existing measures or handbooks which support your work, but which cannot be amended following ethical review. These should simply be referred to in your application form.

2. Submission deadlines:
   i. Projects including direct involvement of human subjects **[section 3 of the form was completed]**. The *electronic* version of your application should be submitted to Becky Case **by the committee deadline date.** Committee meeting dates and application submission dates are listed on the FHMREC website. Prior to the FHMREC meeting you may be contacted by the lead reviewer for further clarification of your application. Please ensure you are available to attend the committee meeting (either in person or via telephone) on the day that your application is considered, if required to do so.
   ii. The following projects will normally be dealt with via chair's action, and may be submitted at any time. **[Section 3 of the form has *not* been completed, and is not required].** Those involving:
      a. existing documents/data only;
      b. the evaluation of an existing project with no direct contact with human participants;
      c. service evaluations.

3. **You must submit this application from your Lancaster University email address, and copy your supervisor in to the email in which you submit this application**

Appendices

Appendix 4-A: Ethics Committee Approval Letter

Lancaster University

Applicant: Faromarz Nasiri
Supervisor: Dr Ian Smith
Department: DHR
FHMREC Reference: FHMREC21025

01 December 2021

Re: FHMREC21025
The perspectives of people with OCD on using mobile applications to support their mental health

Dear Faromarz,

Thank you for submitting your research ethics application for the above project for review by the **Faculty of Health and Medicine Research Ethics Committee (FHMREC)**. The application was recommended for approval by FHMREC, and on behalf of the Chair of the Committee, I can confirm that approval has been granted for this research project.

As principal investigator your responsibilities include:

- ensuring that (where applicable) all the necessary legal and regulatory requirements in order to conduct the research are met, and the necessary licenses and approvals have been obtained;
- reporting any ethics-related issues that occur during the course of the research or arising from the research to the Research Ethics Officer at the email address below (e.g. unforeseen ethical issues, complaints about the conduct of the research, adverse reactions such as extreme distress);
- submitting details of proposed substantive amendments to the protocol to the Research Ethics Officer for approval.

Please contact me if you have any queries or require further information.

Email: fhmresearchsupport@lancaster.ac.uk

Yours sincerely,

T. Morley

Tom Morley,
Research Ethics Officer, Secretary to FHMREC.

Appendix 4-B: Research Protocol

Thesis Research Protocol

Title: The perspectives of people with OCD on using mobile applications to support their mental health

Name of applicant: Faromarz Nasiri

Supervisor: Dr Ian Smith

Version number: 1.2

Introduction

Obsessive compulsive disorder (OCD) is a debilitating mental disorder with a prevalence rate of 1-3% (Veale & Roberts, 2014). Without appropriate treatment, symptoms often worsen, which can have a profound negative impact on people's lives. Whilst research and treatment for OCD has improved in the last few decades, in the UK there is reported to be a seven-year gap between the onset of symptoms and treatment being sought (Stobie, Taylor, Quigley, Ewing, & Salkovskis, 2007). Multiple barriers to treatment contribute to this problem, including stigma, as well as financial and logistical factors (Marques et al., 2010). According to a systematic review by Schwartz, Schlegl, Kuelz, and Voderholzer (2013), on average, only 18–30% of individuals with OCD, from an international sample, receive the highest standard of evidence-based care, exposure and response prevention (ERP). Depending on the criteria used, individuals receiving ERP experience remission rates between 25-60% (Fisher & Wells, 2005).

The variability in response to OCD treatment is thought to be impacted by a number of factors, including the length of therapy, compliance with homework, how exposure therapy is conducted, and clinician adherence to evidence-based practice (Cooper, Champion, Stavropoulos, & Grisham, 2021). Taken together, the existing barriers, treatment difficulties, chronicity, as well as additional pressures the Covid-19 pandemic is likely to place on current mental health provisions (Centre for Mental Health, 2020), highlights the pressing need to consider alternative or complementary methods of delivering mental health care for individuals with OCD.

Technology is an avenue which is receiving increasing attention in being able to address mental health needs which has been recognised by the National Health Service (NHS England, 2016). In particular, due to their widespread ownership and accessibility (Statista, 2020), there is a growing body of research examining the potential of smartphones and mobile applications ("apps") as a platform to improve mental health care delivery (Neary & Schueller, 2018; Weisel et al., 2019). Benefits of mental health apps have been reported as reducing the threshold to accessibility to care / treatment, empowering individuals with treatment choice, and reducing the reliance of direct input from clinicians (Weisel et al., 2019). In relation to OCD, Cooper et al. (2021) identified several factors related to treatment outcomes that may be enhanced by the use of technology, such as improving access before symptoms increase in severity, increasing convenience and engagement of homework tasks, and fostering autonomous skills development. Furthermore, such alternative delivery systems are in line with the stepped-care approach for OCD (NICE, 2006), where those with

OCD may start with low intensity interventions (such as a self-help app), and if needed, step up to receiving more intense and expert interventions.

Despite the promising outcomes mental health apps are beginning to show (Chandrashekar, 2018), the use of mobile apps to support mental health is not without its challenges, as many mental health apps lack evidence of their effectiveness or therapeutic underpinning (Weisel et al., 2019), and fail to consider features of traditional treatment that lead to positive outcomes such as the therapeutic alliance (Henson, Wisniewski, Hollis, Keshavan, & Torous, 2019). One significant limitation of digital health interventions and particularly mental health apps is also poor retention, with Baumel, Muench, Edan, and Kane (2019) reporting real world retention rates of 3.9% after 15 days. A failure to consider the service user's perspectives of using mental health apps is thought to play a significant part in this (Bucci, Schwannauer, & Berry, 2019). Whilst this is beginning to be explored in areas such as depression (Pung, Fletcher, & Gunn, 2018), psychosis (Berry, Lobban, & Bucci, 2019), and bipolar disorder (Nicholas, Fogarty, Boydell, & Christensen, 2017), there is a paucity in literature considering the perspective of people with OCD towards mental health apps. This is despite a growing number of apps designed specifically for OCD difficulties being available in consumer app stores.

In order for mental health apps to be a viable source of support and treatment for OCD and to ensure they are engaging, acceptable and sustainable, there is a need to qualitatively explore end-user's perspective of using mental health apps to support their OCD difficulties, to identify the barriers and facilitators of their use. This will facilitate the understanding of the potential role mobile apps may have in supporting OCD symptoms, which can feed into future development processes, be considered by organisations in considering how apps may be recommended in the stepped care model, and also by clinicians to consider how mental health apps could be used an adjunct to the treatment process with their clients.

Therefore, the primary objective of this study is to qualitatively explore the perspectives of people with OCD on using mental health apps to identify the barriers and facilitators to their use.

Method

Participants

Participants will be adults aged 18 years or older, with a self-reported diagnosis of OCD who have substantially engaged with a mental health app to support their OCD difficulties. The participants' OCD diagnosis may have been given by a health professional or self-diagnosed. Participants will have installed and used a mental health app in the past 12 months. This time frame was chosen to allow participants recent exposure to mental health apps and be able to reflect on their experience of this.

Participants will be required to speak English, as there are no financial resources available to fund the use of interpreters.

12-15 participants will be recruited to ensure sufficient data for analysis. Recruitment will be stopped when data sufficiency is reached; that is, based on analysis of transcripts, no additional themes are being generated.

Two stages of recruitment have been planned, the second of which will only take place if the target number of participants cannot be gained from the first stage.

In the first stage, participants will be recruited through OCD organisations and charities (e.g., OCD-UK, OCD Action, TOP UK, Anxiety UK) who will advertise the study on their research participation pages and social media platforms.

If a sufficient number of participants are not recruited at this stage, the student researcher will create social media handle/account related to the study and share the recruitment poster on Twitter and OCD-related Reddit subreddits, inviting interested eligible individuals to make contact via email.

Design

The study will use a qualitative methodology informed by a thematic analysis approach (Braun & Clarke, 2006). An individual semi-structured interview will be conducted with each participant. This will be recorded and then transcribed by the student researcher, prior to analysis.

Materials

An interview schedule will be used to guide interviews with participants. This can be found in Appendix 1.

Procedure

When potential participants contact the student researcher to express interest, by making contact via email in response to the advertising poster, they will be sent the Participant Information Sheet (Appendix 2) and Consent Form (Appendix 3) via email. Participants will be encouraged to ask any questions before deciding whether to take part. If they are happy to participate, after receiving the information sheet and consent form, a convenient time and means of interview will be agreed.

Interviews will primarily take place remotely via video conferencing software such as Microsoft Teams due to the nature of the study being advertised across the UK. Participants will also be provided the option of having the interview conducted via telephone, and if they are based in the North West, conducted in person.

Consent will be gained by participants returning the completed consent form to the researcher via email. If the participant has not completed this prior to the interview, verbal consent will be gained by reading out each item from the consent form for the participant to verbally agree and asking the participant to give overall verbal consent to take part. This process will be audio-recorded separately to the rest of the interview.

Interviews will be video and/or audio-recorded to allow for later transcription and analysis.

A debrief sheet will be emailed to each participant at the end of their interview. This will give details of potential sources of support in the event of any distress following the interview. Participants will be asked if they would like to receive a copy of the finished research project, and details taken (email address) to allow the student researcher to send this if desired. These details will be stored separately to all other information, to protect participants' anonymity.

Proposed analysis

The study will use thematic analysis (Braun & Clarke, 2006) to identify analyse, and report common themes within data. This is applicable to this study as the aim is to draw out themes of barriers and facilitating factors of app use in relation to OCD, and then move onto interpret why these were helpful or unhelpful.

In addition, thematic analysis is recommended by Braun and Clarke (2006) when exploring an area that may be under-researched, or if the research involves exploring the perspectives of participants that are not known, which applies to the intended population being studied.

Practical issues (e.g., costs/logistics)

Participants who wish to have a face-to-face interview will be advised that their travel costs up to the value of £20 will be reimbursed.

If there are issues with recruiting enough participants from UK based OCD organisations, contact has been made with International OCD Foundation who have agreed to advertise the study, which would expand the study to their international audience.

Due to difficulties in recruiting enough participants for the research project, a financial incentive will be offered to participants in the form of being entered into a prize draw to win a £50 Amazon voucher. Participants which have previously taken part in the study will be offered entry into this prize draw by emailing them on the email address they initially contacted the student researcher. The voucher will be paid for using the student researcher's CPD budget as part of the DClinpsy programme. This has been agreed by the DClinPsy research coordinator and research director.

The incentive will not impact the anonymity of the participants. If participants enter into the participation prize draw, their email addresses will be stored in a password protected file. This will be destroyed 1 week after the final interview has been completed and a winner is randomly selected. The winner will be emailed to inform them of their prize winnings.

Ethical concerns

Confidentiality

All data will be stored electronically on the university's secure encrypted server or in university-approved secure cloud storage. All identifying or personal data (e.g. names and email addresses) will be stored separately from interview transcripts in password-protected files. Audio-recorded verbal consent will be stored separately from all interview data.

Confidentiality will be discussed with each participant prior to their interview. This will include explaining the circumstances in which confidentiality may be broken – if the researcher has concerns that the participant, or someone else, may be at risk. Given that participants will possibly be completing the interviews from home, they will be encouraged to find a quiet, private space where they are not likely to be interrupted and where they feel comfortable to discuss personal matters such as their mental health.

Anonymity

Quotations will be anonymised as far as possible. Interviews will be anonymised at the point of transcription, with potential identifiers removed. No individually identifying data will be used in the writeup of the study.

Distress Management

No major discomfort or distress is anticipated from participation in this project; however, it is possible that participants will find it upsetting to talk about their mental health condition or potential negative experiences with a mental health app. If a participant does become distressed during the interview, then the researcher will offer to stop the interview and will offer the participant a break. The participant will then be given the option of either stopping, continuing with the interview or arranging to complete the interview at a later date.

Participants will be given the contact information of relevant support services (i.e., OCD-UK) as part of their participant information sheet in case of experiencing distress. Participants will also be advised to contact their GP if they require support.

At any point in the interview participants can terminate the interview and their data can be withdrawn. In addition, participants will be able to withdraw their data two weeks after the interview is completed without giving any reason.

Data Storage

All interviews will be video- and/or audio-recorded to allow for later transcription and analysis. Once each interview is completed, the recording(s) will be uploaded directly to the Lancaster University secure network drive or secure cloud storage and deleted from Microsoft Teams. If the interview takes place over the phone or in person, and is recorded via a portable audio recording device, the recording(s) will be transferred to Lancaster University's secure network drive or secure cloud storage as soon as possible, since the portable device cannot be encrypted. The file will then be deleted from the audio recorder. Given the likely remote nature of the interviews, it is anticipated that this will be done immediately following completion of the interview, however, for any time-period between interviewing and uploading the recording, the portable device will be stored securely and kept with the student researcher. All other portable devices used for data storage (e.g., laptops, memory sticks) will be encrypted.

All electronic documents will be password-protected and stored securely on Lancaster University's encrypted network drive or university-approved secure cloud storage. Once the research is completed, video and audio recordings of interviews will be deleted, and the anonymised transcriptions of interviews will be transferred electronically to the Doctorate in Clinical Psychology Research Co-Ordinator using a secure method supported by the University. These transcripts will be stored for 10 years before being deleted.

Files containing participants' personal or identifying information will be kept in a password-protected file, separate from the anonymised transcripts. An ID number will be used to match participants' identifying information to their transcripts. Video or audio recordings of consent will be held by the Doctorate in Clinical Psychology programme for ten years following completion of the research; these will be transferred electronically using a secure method and stored separately to other data. All other personal information will be deleted following the research being completed.

Safety of Researchers

No direct risk of harm to the researcher is anticipated. Should any interviews occur in person, the Lone Worker policy will be adhered to involving the following:

The researcher will assign a buddy (from their cohort) who they will give interview details to. These details will include where the researcher is going to conduct their interview and with whom; this information will be enclosed in an envelope or a password protected document. The researcher will contact the buddy when they leave the interview. If the buddy does not hear from the researcher then they will attempt to contact the researcher themselves. However, if the buddy cannot get in contact with the researcher then they will open the envelope/document and telephone the appropriate authority. The envelope/document will be destroyed following completion of the interview.

Informed Consent

Potential participants will be given information about the nature and purpose of the research. They will be given opportunity to ask any questions, before deciding whether to take part. It will also be made clear (on the information sheet and verbally) that participants can withdraw their data up to two weeks following their interview.

Timescale

October – December 2021: Submit ethics proposal for ethical approval.
Decide on topic for systematic literature review chapter and begin

January-March 2022: Obtain ethical approval for study
Draft introduction and method of systematic literature review chapter

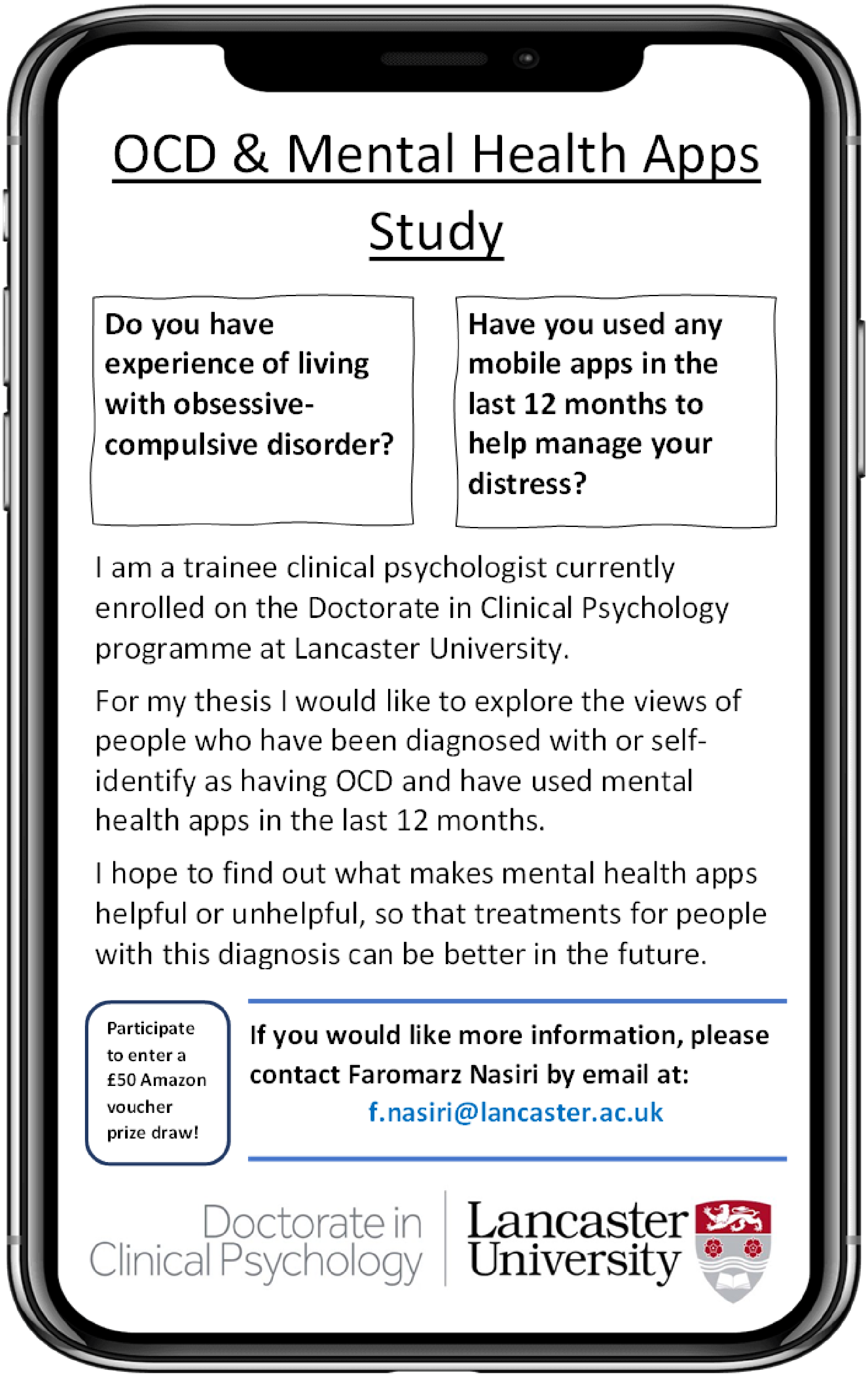
April – June 2022: Draft introduction and method for empirical paper
Data collection
Begin analysis

July-September 2022: Complete data collection
Review literature for systematic review
Identify topic for critical appraisal chapter

October-December 2022: Draft results and discussion of systematic literature review chapter
Complete analysis of data
Draft results and discussion of empirical paper

January- March 2023: Draft critical appraisal
Final drafts of other chapters
Final formatting of thesis
Submit thesis

Appendix 4-C: Recruitment Poster



OCD & Mental Health Apps Study

Do you have experience of living with obsessive-compulsive disorder?

Have you used any mobile apps in the last 12 months to help manage your distress?

I am a trainee clinical psychologist currently enrolled on the Doctorate in Clinical Psychology programme at Lancaster University.

For my thesis I would like to explore the views of people who have been diagnosed with or self-identify as having OCD and have used mental health apps in the last 12 months.

I hope to find out what makes mental health apps helpful or unhelpful, so that treatments for people with this diagnosis can be better in the future.

Participate to enter a £50 Amazon voucher prize draw!

If you would like more information, please contact Faromarz Nasiri by email at:

f.nasiri@lancaster.ac.uk

Doctorate in Clinical Psychology | Lancaster University

Appendix 4-D: Participant Information Sheet

Participant Information Sheet

The perspectives of people with OCD on using mobile applications to support their mental health

For further information about how Lancaster University processes personal data for research purposes and your data rights please visit our webpage: www.lancaster.ac.uk/research/data-protection

My name is Faromarz Nasiri and I am conducting this research as a trainee clinical psychologist on the Doctorate in Clinical Psychology programme at Lancaster University, Lancaster, United Kingdom.

What is the study about?
The purpose of this study is to explore the perspectives of individuals with obsessive compulsive disorder of using mental health applications to support their difficulties. It is hoped that this will help to identify themes around the barriers and facilitators of mental health apps to support OCD difficulties.

Why have I been approached?
We are asking individuals to take part who have a diagnosis or self-diagnosis of OCD and have substantially engaged with a mental health app in the last year to support difficulties associated with their OCD. Individuals who are over the age of 18 and fluent in English are eligible to take part in the study.

Do I have to take part?
No. It's completely up to you to decide whether or not you take part. Whatever decision you make, you do not have to give a reason.

What will I be asked to do if I take part?
If you do decide to participate, this will require about an hour of your time to take part in an interview with the researcher (Faromarz). The interview can be conducted over remotely over Microsoft Teams, or via telephone or face-to-face. You can ask any questions before the interview starts and then you will be asked to complete a consent form prior to taking part in the interview. All interviews will be recorded on a digital recorder or via the recording feature on Microsoft Teams.

Will my data be Identifiable?
The data collected for this study will be stored securely and only the researchers conducting this study will have access to this data:

- Recordings from the interviews will be kept until thesis examination (Summer 2023) and then securely destroyed.
- Lancaster University will keep copies of the interview transcriptions and the consent forms electronically for 10 years after the study has finished or 10 years from publication, whichever is longer. At the end of this time, they will be securely destroyed.
- Files held on the computer will be encrypted (meaning no one other than the researchers can access them) and the computer itself will be password protected
- The typed transcript interviews will be made anonymous by removing any identifying information. Anonymised direct quotations may be used in the report or in publications of

the study. Therefore, confidentiality cannot be guaranteed but anonymity will be as far as is possible.

- Personal demographic data collected by the researcher will be confidential and will be kept separately to interview responses. These will be destroyed after thesis examination.
- If participants enter into the participation prize draw for a £50 Amazon voucher, their email addresses will be stored in a secure file. This will be securely destroyed 1 week after the final interview has been completed and a winner is randomly selected. The winner will be emailed to inform them of their prize winnings.

There are some limits to confidentiality: if what is said in the interview makes me think that you, or someone else, is at significant risk of harm, I will have to break confidentiality and speak to a member of staff about this. If possible, I will tell you if I have to do this.

What will happen to the results?
The results will be summarised and reported as part of my doctorate thesis and will be submitted for publication in an academic or professional journal.

Are there any risks?
There are no risks anticipated with participating in this study. However, if you experience any distress following participation you are encouraged to inform the researcher and contact the resources provided at the end of this sheet.

Are there any benefits to taking part?
There will be no direct benefit to participation in this study, however, it is hoped that participants may find it validating to talk about their perspectives of using mental health apps and therefore may find it a positive experience to participate in this study. Furthermore, it is hoped that this research will inform the future development and consideration of mental health apps, particularly for people with OCD.

Who has reviewed the project?
This study has been reviewed and approved by the Faculty of Health and Medicine Research Ethics Committee at Lancaster University.

Where can I obtain further information about the study if I need it?
If you have any questions about the study, please contact the main researcher:

Researcher
Faromarz Nasiri
Trainee Clinical Psychologist, Doctorate in Clinical Psychology, Faculty of Health and Medicine,
Lancaster University, Lancaster, LA1 4YT
E-mail: f.nasiri@lancaster.ac.uk

Research Supervisor
Dr Ian Smith, Research Director, Doctorate in Clinical Psychology, Lancaster University
E-mail: i.smith@lancaster.ac.uk

Complaints
If you wish to make a complaint or raise concerns about any aspect of this study and do not want to speak to the researcher, you can contact:

Dr Ian Smith
Tel: (01524) 592282
Research Director, Doctorate in Clinical Psychology; Email: i.smith@lancaster.ac.uk
Faculty of Health and Medicine
Lancaster University
Lancaster
LA1 4YT

If you wish to speak to someone outside of the Clinical Psychology Doctorate Programme, you may also contact:

Dr Laura Machin Tel: +44 (0)1524 594973
Chair of FHM REC Email: l.machin@lancaster.ac.uk
Faculty of Health and Medicine
(Lancaster Medical School)
Lancaster University
Lancaster
LA1 4YG

Thank you for taking the time to read this information sheet.

Resources in the event of distress
Should you feel distressed either as a result of taking part, or in the future, the following resources may be of assistance.

OCD-UK
www.ocduk.org
01332 588112 (Monday-Friday 9:30am-3:30pm)

OCD Action
www.ocdaction.org.uk
0300 636 5478 (Monday-Friday 9:30am-8pm)

If you are feeling generally distressed**,** the Samaritans are available 24 hours a day to provide confidential emotional support for people who are experiencing feelings of distress, despair, or suicidal thoughts.
www.samaritans.org
116 123 (free to call from within the UK and Ireland), 24 hours a day
Email: jo@samaritans.org

Appendix 4-E: Consent Form

Consent Form

Study Title: The perspectives of people with OCD on using mobile applications to support their mental health

We are asking if you would like to take part in a research project which aims to explore the perspectives of individuals with obsessive compulsive disorder of using mental health applications to support their difficulties.

Before you consent to participating in the study we ask that you read the participant information sheet and mark each box below with your initials if you agree. If you have any questions or queries before signing the consent form please speak to the trainee, [Faromarz Nasiri].

1. I confirm that I have read the information sheet and fully understand what isexpected of me within this study ☐
2. I confirm that I have had the opportunity to ask any questions and to have themanswered. ☐
3. I understand that my interview will be audio or video recorded and then made into an anonymised written transcript. ☐
4. I understand that audio or video recordings will be kept until the research project has been examined. ☐
5. I understand that my participation is voluntary and that I am free to withdraw at anytime without giving any reason, without my medical care or legal rights being affected. ☐
6. I understand that once my data have been anonymised and incorporated into themes it might not be possible for it to be withdrawn, though every attempt will bemade to extract my data, up to the point of publication. ☐
7. I understand that the information from my interview will be pooled with other participants’ responses, anonymised and may be published; all reasonable steps willbe taken to protect the anonymity of the participants involved in this project. ☐
8. I consent to information and quotations from my interview being used in reports,conferences, and training events. ☐
9. I understand that the researcher will discuss data with their supervisor as needed. ☐
10. I understand that any information I give will remain confidential and anonymous unless it is thought that there is a risk of harm to myself or others, in which case theprincipal investigator may need to share this information with their research supervisor. ☐
11. I consent to Lancaster University keeping written transcriptions of the interview for10 years after the study has finished. ☐

12. I understand that if I agree to be entered into the prize draw my email address will be stored for the purpose of this and will be deleted after the prize draw has been drawn. ☐

13. I consent to take part in the above study. ☐

Name of Participant________________________

Signature__________________________________

Date ______________________________________

Name of Researcher________________________

Signature__________________________________

Date ______________________________________

Appendix 4-F: Interview Schedule

Interview Schedule – Version 1.1 04/10/2021

The perspectives of people with OCD on using mobile applications to support their mental health

Introduction

Welcome participant, introduce self, and thank participant for attending the interview.

Answer any questions the participant may have.

Provide outline of interview procedure (i.e., I will be asking questions about their perspectives, length of interview ~60 minutes)

Consent

Re-confirm participant's informed consent prior to participating in the interview.

If the consent form has not been completed prior to the interview, begin separate recording to the interview, and read out each statement from the consent form and ask the participant to verbally agree to each, and to give overall verbal consent to participate. End recording.

Demographic and Context Questions – On separate sheet

Age

Ethnicity

Gender identity

Education level

App(s) used

Length of app use

Timing of app use (current or past)

Interview – Begin Recording

General Smartphone Use

- E.g., how often they use their smartphone?

Mental Health App Used

- What prompted you to first consider this/these app(s)?
- Why did you choose this/these particular app(s)?

General App Use

- When did you use this/these app(s)?
    - Probe – what events make you more likely to use the app(s)?
- How often did you use this/these app(s)?
- What did you do with or how did you use this app(s)?

Facilitators of app use

- What was helpful about the app(s) that you used?
    - Prompt – are there any features that helped you to use the app?
    - Probe – How did these features help you to use the app?
- In what ways did you use the app to support your mental health?

Barriers of app use

- What was unhelpful about the app that you used?
    - Prompt – Where there any features which you found unhelpful?
    - Probe – Did you have any concerns about using an app to support your mental health?
- If you stopped using the app, what made you stop?

Any other

- Is there anything else about your experience or perspective of using mental health apps to support OCD which I haven't asked about?

Appendix 4-G: Participant Debrief

Participant Debrief Sheet

Thank you for taking the time to participate in this research study looking at perspectives of people with obsessive-compulsive disorder on using mobile applications to support their mental health.

Should you experience any distress, either as a result of taking part in this research or in the future, and you are already receiving support from a mental health service, I advise you to speak to your named nurse, care co-ordinator, psychiatrist or psychologist.

If you are not under a mental health service, I would advise you to speak directly to your General Practitioner (GP) who will be able to direct you to services that provide mental health support. Alternatively, there are mental health charities which can offer support and advice (please see below).

If you decide after the interview that you do not wish for your data to be used in this research, you have the right to request for your data to be removed from the study and permanently deleted up to 2 weeks following the interview. Please contact Faromarz Nasiri via email on f.nasiri@lancaster.ac.uk if you wish to do this. You will not be asked for a reason for your withdrawal.

If you have any questions or concerns regarding any aspect of this research study, or wish to receive a summary of the research outcomes please feel free to contact the researcher, Faromarz Nasiri, on the above email address.

In addition, should you wish to receive a copy of the interview transcript or would be happy to be approached to review and comment on the themes produced from the analysis, please let the researcher know.

Please keep a copy of this debrief sheet for your future reference.

Thank you once again for participating in this study and I wish you all the best for the future.

Faromarz Nasiri
Trainee Clinical Psychologist
Lancaster University
Email: f.nasiri@lancaster.ac.uk

Mental Health Charities/Resources

OCD Charities:

OCD-UK
www.ocduk.org
01332 588112 (Monday-Friday 9:30am-3:30pm)

OCD Action
www.ocdaction.org.uk
0300 636 5478 (Monday-Friday 9:30am-8pm)

If you are feeling generally distressed, the Samaritans are available 24 hours a day to provide confidential emotional support for people who are experiencing feelings of distress, despair, or suicidal thoughts.

www.samaritans.org

116 123 (free to call from within the UK and Ireland), 24 hours a day

Email: jo@samaritans.org