Title: The Impact of Digital Interventions on Help-Seeking behaviour for Mental Health Problems: A systematic literature review

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Abstract

Purpose of review: Interventions which facilitate help-seeking could help individuals to get care earlier on which could also help avert some mental health crises. Delivering interventions via a digital format could mitigate some key barriers to mental health care. We reviewed the literature for digital interventions which facilitate formal or informal help-seeking for mental health problems. We examined the impact of identified interventions on actual and intended help-seeking and attitudes towards help-seeking.

Recent findings: We identified 35 interventions. About half (51%) of studies showed an improvement in at least one help-seeking outcome with the greatest number showing an improvement in help-seeking intentions and the fewest studies showing an improvement in actual behaviour (29%). Findings suggest that interventions which promote active participation and personal involvement through sharing one's own narrative seem to be promising practices to facilitate help-seeking.

Summary: Our findings suggest digital interventions can improve help-seeking for mental health problems among a range of populations. Given specialty mental health resources are scarce, further research needs to consider how these interventions could best target the most vulnerable groups to link them with mental healthcare and how these interventions might facilitate earlier intervention in a way that might reduce need for crisis care and support.

Key Words: Help-seeking, Access to care, Mental health, e-health, Digital interventions, Stigma

Key points

- Digital interventions have the potential to improve help-seeking for mental health problems among a range of populations
- About half (51%) of studies showed an improvement in at least one help-seeking outcome with the greatest number showing an improvement in help-seeking intentions and the fewest studies showing an improvement in actual behaviour (29%).
- Interventions which promote active participation and personal involvement through sharing one's own narrative seem to be promising practices to facilitate help-seeking.

Introduction

Around 40-60% of people with mental health conditions perceive a need for treatment but are not able to access any care.(1-3) A much smaller proportion access adequate care and support.(1-3) This signifies a wide treatment gap, even among those who express a desire to get help and support. Individual and societal factors can impede the help-seeking process (4) both by reducing motivation to initiate help-seeking and impeding ongoing engagement through limited supply of care. Stigma, for example, undermines help-seeking (5) by decreasing willingness to self-identify as having a mental health problem, sometimes in an effort to avoid social exclusion or to avoid the label because of one's own prejudice; but also by limiting investment in needed resources. Acceptability of help-seeking may also be undermined by close friends, family, colleagues and health professionals which further limit sources of support. (6) These barriers are more highly represented among low socioeconomic groups (7) further perpetuating a cycle of disadvantage. Structural and societal factors can further limit access and require practical solutions to empower help-seeking behaviour. (7, 8)

Interventions which facilitate help-seeking could help individuals get care earlier which might avert some mental health crises. Delivering interventions digitally could mitigate some key barriers to mental health services. Using a digital platform could alleviate structural barriers related to time, cost, and transportation which can impede help-seeking from physical services. Being able to access information privately may help counter stigma and encourage individuals to engage with support. Finally, providing users evidence-based information about help-seeking could help empower users to choose types of support they prefer.

Four studies (9-12) have reviewed help-seeking interventions for people with mental health problems. Three of these reviews (9-12) focused on youth and one of those (11) focused on online interventions, though it was published in 2014. This study aimed to systematically review the literature for digital interventions which facilitate formal or informal help-seeking for mental health problems. We examined the impact of the interventions on help-seeking directly (i.e., by increasing actual or intended help-seeking). As a secondary aim, we also explored the indirect impacts (e.g., by reducing key barriers to help-seeking such as mental health literacy or mental health-related service stigma).

Method

Four databases were searched in English in April 2021: Medline, PsycInfo, Cochrane Library, and Embase. A common set of search terms relating to: help-seeking; mental health and illness and randomised controlled trials was used, as well as subject headings specific to each database (Appendix I). There were no restrictions in language or date limits. Experts were identified from corresponding authors of included studies and from the authors' knowledge and were contacted for further recommendations of relevant articles. Reference lists of relevant systematic reviews were searched for additional articles. This review was registered with PROSPERO (PROSPERO2020 CRD42020200125) and methods are reported in line with PRISMA guidelines (Figure 1).

Inclusion and exclusion criteria

Inclusion and exclusion criteria were specified in advance and articles were eligible for inclusion if they met the following criteria: (1) *study design.* They used a randomised controlled trial (RCT) design and included an active or inactive control group; (2) *type of intervention:* digital mental health interventions which aimed to improve help-seeking as

either a primary or secondary study aim. Digital interventions were defined as support, information, or treatments delivered digitally (e.g., an app with information on professional help-seeking for mental health problems). Interventions could be self-guided, supported by non-professionals or by healthcare professionals. The intervention itself must have been delivered entirely digitally, but it could have been applied in a community, research or clinical setting; (3) *Participants and conditions:* interventions which aimed to improve help-seeking for all mental health problems, including subclinical or subthreshold problems. We included the following conditions: mood disorders, psychotic disorders, anxiety disorders, personality disorders, self-harm, suicidal thoughts/ideation, substance misuse, and neurodegenerative disorders (e.g. dementia and Parkinson's disease). Participants with undiagnosed conditions who were screened with validated clinical instruments were also included.

Studies were excluded if they: (1) only included/analysed participants without mental health problems (diagnosed or undiagnosed); (2) if they evaluated universal interventions (such as public campaigns) or (3) included elements delivered face-to-face (i.e., hybrid interventions).

Study Selection

All identified papers were downloaded to Endnote for deduplication and uploaded to Rayyan (https://rayyan.qcri.org/) for screening. After duplicates were removed, title and abstract screening were performed by two reviewers (SH, LJP). For reliability purposes, 10% of all references were initially screened. SH, LJP, GS and SEL then discussed issues raised and refined and clarified inclusion and exclusion criteria together. In the second stage, each reviewer re-screened the initial abstracts considering the group discussion. As inter-rater reliability was greater than 85%, remaining records were then screened individually. SH and LJP then reviewed full text reports of potentially relevant studies and extracted data from

included studies using a pre-piloted form. Any disagreements at either stage were resolved by discussion with SEL and GS.

Quality Assessment

Six quality criteria were adapted from the Evidence for Policy and Practice Information and Co-ordinating Centre and assessed during data extraction (13): (i) aims clearly stated, (ii) design appropriate to stated objectives, (iii) justification given for sample size, (iv) evidence provided of reliability or validity of measures used, (v) statistics accurately reported, and (vi) sample selection was relatively unbiased. (14)

Data extraction and synthesis

Detailed information was extracted on: study design, participant characteristics, study location, intervention details, details of control/comparison conditions, timing of assessment and study results. Missing data were requested from study authors.

We also extracted study characteristics which considered urban design features noted as important for impacting mental health and help-seeking (15) including: green space, active space for exercise, pro-social places to encourage social interaction, safety, sleep, transportation, economic stress and affordability in the city, air pollution. (https://www.urbandesignmentalhealth.com/mind-the-gaps-framework.html).

Because identified studies featured heterogeneous population sub-groups, intervention types and outcomes, we did not conduct a meta-analysis. We conducted a narrative synthesis

Popay, Roberts (16) and extracted the number of comparisons showing a positive effect and the number of comparisons showing statistically significant effects.

Results

Database searching, expert consultation and reference checking yielded 7,034 non-duplicate articles. 35 articles were included following full text review (Figure 1). All included articles are referenced in Appendix 2.

FIGURE 1

Participant characteristics and targets of interventions

Most interventions (57%) focused on the general population with mental health problems rather than a specific target group. Some addressed individuals presenting specific problems including depression or distress (n=14), suicidal ideation or self-harm (n=5), post-traumatic stress disorder (n=2), anxiety (n=5) and alcohol or substance misuse (n=4). Others had a selective preventive intervention focus (n=4), for example, individuals at-risk of dementia by virtue of their age. (Table 1).

TABLE 1

Characteristics of digital help-seeking interventions

More than three-quarters of interventions had an educational component (80%). Less than half included some type of personal involvement (46%), though this was mostly through individual exercises and personal feedback (34%) rather than an opportunity to share personal narratives (11%). A slight majority incorporated active (54%) rather than passive involvement (46%). Most interventions were delivered at a single timepoint (57%) though for many, material was continuously available to participants.

Interventions varied in their perspective and/or therapeutic approach to facilitate help-seeking, and 40% of the studies combined multiple approaches. We characterised approaches into the following nine groups from most to least commonly applied: psychoeducation/mental health literacy (n=23); individual feedback (n=8) cognitive behavioural therapy (n=7); learning through modelling (n=6); anti-stigma (n=5); motivational interviewing (n=2); value affirmation (n=3); theory of planned behaviour (n=1) and gratitude (n=1). A detailed summary of intervention characteristics is included in Appendix 3.

Outcomes assessed

Help-seeking intentions was the most commonly assessed type of help-seeking outcome (n=26). Thirteen studies assessed help-seeking attitudes and fourteen studies help-seeking behaviour. Help-seeking knowledge was assessed by 8 studies. (17-24) Lannin, Vogel (19) assessed help-seeking beliefs. Help-seeking stigma was assessed by 8 studies. (19, 24-30) Most studies assessed some aspect of help-seeking as their primary outcome (n=24), while 11 studies assessed help-seeking as a secondary outcome.

Most studies assessed at least one help-seeking attitude, intention and/or behaviour outcome (*n*=31) and these are described in table 2 in relation to intervention characteristics. Four studies did not assess attitudes, intentions or behaviours and are not included in table 2. (18, 20, 27, 30).

About half of studies (51%) showed an improvement in at least one help-seeking outcome with the greatest number showing an improvement in help-seeking intentions and the fewest in actual behaviour (29%). We were interested in whether there was an association between intervention characteristics and change in help-seeking outcomes. In relation to intervention

components, active vs. passive involvement was associated with greater likelihood of improvement in help-seeking attitudes (50% vs. 20%); intentions (62% vs, 36%) and behaviour (50% vs 0%). Overall, Fishers Exact test suggested active vs. passive interventions were associated with a positive help-seeking outcome (p=0.02).

Although only four interventions incorporated personal involvement through an opportunity to share personal narratives, these interventions tended to have more positive outcomes compared to those without this feature (100% vs 41%, p=0.01)

TABLE 2

Urban mental health and addressing social determinants which could impact help-seeking

Given the majority of people with mental health conditions live in urban areas and this number is increasing, (31) we also considered whether any identified interventions addressed specific barriers/issues present in urban settings. Many features common to urban environments represent social determinants which we know negatively impact mental health (32) and impede help-seeking and could be promoted through digital formats. Only a small number of studies addressed any of these in their intervention. One locally designed help-seeking app Wiljer, Shi (29), for example, used a map-based database to link users with help, with the possibility of adding additional resources and sharing personal experiences. Although this app, did not change help-seeking intentions, other studies (22, 33, 34) providing local resources found mixed findings on help-seeking attitudes, intentions and behaviour. These are further summarized in Appendix 3.

Quality assessment

Most studies met more than four criteria (71%) with the remaining of lower quality: 23% meeting three and 6% meeting 2 criteria. (Table 3).

TABLE 3

Discussion

Our systematic review of digital intervention studies which facilitate formal or informal help-seeking for mental health conditions provides support that help-seeking knowledge, attitudes, intentions and behaviour can be improved through digital interventions among the general public and a range of other more specific target groups. This review builds on previous evidence of effectiveness of help-seeking interventions among the general public (10) and among youth, (9, 11, 12) including one review of digital interventions for youth published in 2014. (11) Possibly because of our broader search strategy and focus on digital search terms, we identified 35 interventions which are significantly more interventions than reported in previous reviews. The most recent reviews from 2020 by Aguirre Velasco (which focused on adolescents) only identified six multimedia/online interventions while the Xu review from 2018 identified 13 studies.

Our review highlighted the potential for digital interventions to improve help-seeking outcomes, including actual behaviour. There is good evidence that principles of face-to-face interventions can be delivered effectively in a digital format and that they may be more cost-effective than face-to-face interventions. (35) The most effective interventions, however, consider and optimise intervention components for the target population. Our review suggests some considerations such as active participation by users and personal involvement including an opportunity to share personal narratives could increase effectiveness of digital

help-seeking interventions. Only a small number of interventions, however, incorporated personal involvement and narrative sharing. Moreover, few studies explored potential mechanisms or pathways to explain how or why help-seeking behaviour changed. Limited understanding of mechanisms has also been noted in previous reviews of face-to-face help-seeking interventions. (9) A better understanding of mechanisms might support development and adaptation of more focused and cost-effective interventions.

Although interventions with active involvement tended to be more effective at promoting help-seeking, over one-third of interventions with passive involvement also resulted in positive help-seeking intentions. Other studies have noted that simple text reminders, (36) phone calls or other types of prompts can increase engagement and use of care. (37) This suggests that low-cost and scalable information type interventions could be used to increase help-seeking. Although further support may be required, to for example, continue engagement and support.

Our review identified several gaps in the field. First, many of the interventions involved signposting and those which did have a social component mainly did so through sharing other people's stories rather than considering more interactive components to allow users to share their own narrative or facilitate online peer support. Although these types of interventions are potentially more complex, they may offer an opportunity to target multiple factors underlying barriers to help-seeking including cognitive, attitudinal and structural aspects. (5, 12)

We also examined whether any interventions considered social determinants/urban mental health features to help individuals overcome help-seeking obstacles through strengthening social cohesion, sharing of information and resources. Although digital interventions have

been developed in these areas, they are not linked with mental health or help-seeking resources. It may be that help-seeking interventions could also incorporate and signpost information about promoting social interactions and support, facilitating transportation and access to places of support, information about accessing other types of relevant social care services which could aid in relation to trauma or economic challenges. It is unclear, and has not been studied, how digital help-seeking interventions affect help-seeking disparities. Help-seeking is related to socio-economic factors, with lower income, for example, being associated with lower help-seeking. Digital interventions should help overcome, rather than deepen such help-seeking inequalities. Finally, most evaluations emphasised attitudinal outcomes and intentions to seek help rather than measuring actual behaviour, which is more challenging. Although some research suggests help-seeking intentions are associated with behaviours, (38) these are not always correlated.

Limitations

Although our findings provide insight about the potential for digital interventions to improve help-seeking, we only reviewed studies published in peer-reviewed journals and our search was only performed in English (though we did not exclude any studies based on language) and so some relevant non-English RCTs and RCTs published in grey literature may have been missed. To address this, experts were consulted and publications of relevant systematic reviews were hand searched but some may still have been missed. The choice to only include RCTs may also mean some relevant quasi-experimental studies were missed. The studies we identified were heterogeneous in terms of the intervention approach, target population and study quality making it difficult to broadly generalise our findings. Populations studied, for

example, included: university students, veterans, teenage mothers, youth with various mental health symptoms, individuals reporting problems with amphetamine use, etc.

Conclusion

This review provides evidence that digital interventions can improve formal and informal help-seeking for mental health problems among a range of populations. Although several gaps remain, interventions which promote active participation and personal involvement through sharing one's own narrative seem promising practices to facilitate help-seeking. Given limited specialty mental health resources, further research should consider how interventions could target the most vulnerable groups to link them with care and how these interventions might facilitate earlier intervention to reduce later need for crisis care and support. Similarly, given scarce resources, encouraging use of, and linking users with other types of evidence-based support strategies such as peer support and online digital support could also help to mitigate burden on the health system.

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Conflicts of Interest

SEL has received consulting fees from Janssen unrelated to this work.

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