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Acceptability of an e-mental health self-help intervention aiming to improve psychological distress among persons experiencing unstable housing in France

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Abstract

Background People experiencing socioeconomic disadvantage are at high risk of having mental health needs. E-mental health tools could help address the mental health needs of this hard-to-reach population. The aim of our study was to explore the acceptability and appropriateness of a mobile-supported website adaptation of WHO's stress management guide "Doing What Matters in Times of Stress" (DWM) among individuals experiencing unstable housing conditions, as well as among relevant health and social care sector professionals working with this population in Paris.

Methods 48 individuals (22 persons experiencing unstable housing conditions and 26 key informants including health care and social workers) participated in a two-phase qualitative study. Participants completed free listing individual interviews (FLI) developed for the study and aiming to investigate access to communication technologies as well as barriers and facilitators of use e-mental health tools, and focus groups (FG) examining barriers and facilitators of use of the DWM online intervention (DWM-OI). All FLIs and FGs were transcribed and content analysis was implemented.

Results DWM-OI was considered a useful tool to help individuals deal with stress, both by individuals experiencing unstable housing conditions and by health care and social professionals. Identified barriers to use included: low literacy, lack of face-to-face interaction, and intermittent accessibility to a smartphone or to the Internet. Some participants experiencing unstable housing conditions requested assistance to use DWM-OI as they would not be entirely at ease with this technology.

Conclusion Our data suggest that the DWM e-mental health intervention (DWM-OI) is probably well-accepted by persons experiencing unstable housing conditions and by healthcare and social workers in contact with this group. However, certain barriers need to be addressed to make this type of e-mental health tool widely accessible to individuals who experience socioeconomic disadvantage.

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Keywords E- Health, Psychological Distress, Unstable Housing, Qualitative Research

Introduction

Mental health is determined by a complex interplay of individual, social and structural stresses and vulnerabilities, including unstable housing conditions [1]. Guided self-help interventions, including e-mental health tools, may be used to widen the means through which people in need can access psychosocial support [2]. Online interventions that can be used on a smartphone may be particularly appealing, due to their anonymity and portability, as well as low cost and ease of access [3].

While there is strong evidence that psychosocial support is effective to address the mental health needs of persons belonging to marginalized groups such as those experiencing socioeconomic disadvantage [4], to date, little is known about whether online versions of such interventions are well-suited for these populations, although there is reason to believe they could be effective [5, 6]. More broadly, the question of the acceptability and usability of IT tools for homeless people/vulnerable populations is an important issue in terms of access to healthcare, especially with the recent development of e-health [7].

As part of the EU H2020 CORONAVIRUS-funded PREparednesS of health systems to reduce mental health and Psychosocial concerns resulting from the COVID-19 pandemic (RESPOND) project, including a consortium of researchers in eight European countries (including France), we aimed to better understand the relevance of an online psychosocial support intervention, prior to testing it in a randomised controlled trial (RCT) which evaluates its effectiveness as part of a stepped-care program combining the DWM website adaptation [8] and a face-to-face psychological intervention named Problem Management Plus (PM+) [9] with the aim of reducing symptoms of depression and anxiety amongst adults experiencing unstable housing. The DWM and PM+ programs were developed prior to the COVID-19 pandemic, but proved particularly useful at a time when population levels of psychological distress in the general population as well as among underserved groups rose.

In France this intervention is being tested among people experiencing unstable housing. This is unfortunately a growing population, mostly living in the Paris area, and in large part composed of migrants. The increased prevalence of mental health problems among persons experiencing unstable housing conditions in comparison with the general population has been reported in studies conducted in the homeless population and among undocumented migrants (approximately 29% of prevalence of depression and 16% of PTSD) [1, 10]. People experiencing unstable housing are a heterogeneous group of persons

without personal housing who are sometimes homeless, sometimes supported by family or friends, and who may during periods of varied lengths access the accommodation system for the homeless, which offers amenities that vary from very single night shelters to accommodation centers where individuals can stay for several months [1].

During the COVID-19 pandemic, homeless people faced unique challenges that could significantly impact their mental health. These arose from a combination of pre-existing vulnerabilities and the specific circumstances created by the COVID-19 pandemic such as social distancing, sense of threat, as well as disruption of essential services and support networks. Yet, actual access to support and mental health services is often limited, particularly for migrants because of language, cultural and mental health care provision barriers [11]. Therefore, it is important to identify accessible and culturally suitable support tools to ensure access to psychological support to members of marginalized groups.

Before launching the RESPOND trial, we conducted the present qualitative study to explore the views of (a) people experiencing unstable housing and (b) key informants including health care and social workers regarding the acceptability and appropriateness of a mobile-supported website adaptation of WHO's stress management guide "Doing What Matters in Times of Stress" (DWM), as well as potential barriers and facilitators for the use of this type of tool. This type of combined approach collecting data both from service users and professionals has been shown to yield richer information than one group alone [12].

Materials and methods

Study design

A two-phase qualitative study following the DIME protocol [13] was conducted in Paris between November 2021 and June 2022. In the first phase, free listing individual interviews (FLI) developed specifically for the present study and described elsewhere [14], investigated barriers and facilitating factors potentially influencing access to e-tools among people experiencing unstable housing conditions [15]. In a second phase, focus groups (FGs) involving semi-structured interviews aiming to evaluate the acceptability and appropriateness of DWM-OI were conducted.

In both study phases, we collected data on participants' sociodemographic characteristics (gender, age, country of origin), literacy and French fluency level.

Data collection

FLIs included a series of questions to which responses were presented as a list. First, participants were asked about problems and issues they may face. Second, they were invited to report tasks and activities implemented to care for themselves. FLIs were conducted in French, Arabic or Dari in-person and lasted no longer than one hour. Interviews were conducted by two researchers: one conducting the interview and taking notes, the other translating. All FLIs were audio recorded. Participants' sociodemographic characteristics (age, gender, country of origin, and occupation) as well as interviewer details were recorded. During the interview, participants were also asked to list all words that came to mind in response to specific questions and provide a brief description.

FGs aimed to gather in-depth information about problems and functions identified in FLIs. FGs.

were implemented on-site and lasted around two hours each. FGs were audio recorded. Participants' sociodemographic characteristics (age, gender, country of origin, and occupation) as well as interviewer details were recorded. FG participants were presented findings from FLIs and asked to describe actions implemented to manage and address them. They were also asked to identify other possible problems and prioritise those that seemed most important.

Recruitment

We recruited people aged > 18 years of age, speaking French or Arabic, experiencing unstable housing conditions and key informants (KIs, including social and health care workers) from accommodation centres for persons who are homeless in Paris and Caen. A meeting about the study aims and procedures was conducted prior to recruitment. Participants were recruited via flyers distributed to all residents and staff of three accommodation centres and through accommodation centre staff or directly. Study participants were interviewed on-site in specially organized research sessions. Efforts were made to ensure sample diversity in terms of geographical origins. Sample size was determined based on prior assumptions relative to data saturation [16].

Data analysis

Data collected from FII and FG were transcribed by the same researcher using an inductive thematic approach [17]. The three FGs conducted in French were transcribed by a member of the RESPOND-France team. The FG in Arabic was translated and transcribed by an interpreter. Themes that emerged from participants' discourse were coded in categories and sub-categories.

All study data were coded into categories and sub-categories of factors related to e-mental health tool use (e.g., facilitators, accessibility, illiteracy, confidence,

culture, translations). Data were triangulated: research findings and themes were independently assessed by two researchers with prior training in qualitative research. Data analyses were aided with the use of Atlas.ti (version 9) and Microsoft Excel.

Results

Sample description

In total, 48 participants (32 in FLIs and 16 in FGs) were included in the study.

Participants included in FLIs were fourteen migrant people experiencing unstable housing conditions (four came from the Democratic Republic of Congo, three from Côte d'Ivoire, three from Algeria, two from Senegal, one from Sao Tomé and one from Albania) all living in Paris and eighteen KIs (eleven in Paris and seven in Caen working as social workers or nurses). Participants experiencing unstable housing conditions were on average 36.7 years old (23–59 years), 73% were male; 46% were undocumented, 50% were asylum seekers, 4% were refugees; 43% had a middle-school or high-school diploma and 69% were literate. KIs were on average 35.6 years old (23–69 years), 81% were female.

Four FGs were conducted (two with people experiencing unstable housing and two with KIs), with four participants in each group. All FG participants lived in Paris. FGs with people experiencing unstable housing conditions included migrants (two from Senegal, two from Syria, two from Libya, one from Algeria and one from the Democratic Republic of Congo). Regarding participants who were migrants, mean age was 36.7 years (23–59 years), 73% were male, 46% were undocumented, 50% had asked for asylum, 4% were refugees, 69% were literate with a majority having a middle-school or high-school diploma (43%). The mean age of KIs was 35.6 years (23–69 years). Of KIs, 81% were female, 50% were social workers, 31% were healthcare workers, and 19% were administrative workers.

Free-listing interviews (FLIs)

In FLIs we investigated access to communication technologies, as well as barriers and facilitators of use of e-mental health tools. 16 out of 22 participants experiencing unstable housing conditions had access to communication technologies, mobile telephones being the most frequently used ($n=14$), followed by a computer/tablet ($n=2$). Online applications most frequently used were YouTube, ($n=14/14$) followed by Facebook ($n=10/14$) and WhatsApp ($n=7/14$). Twelve people reported that e-mental tools could be useful in terms of promoting good mental health (Table 1).

Table 1 Use of electronic devices and online applications among persons experiencing unstable housing conditions taking part in the qualitative RESPOND research study

Use of electronic devices	Frequency	Example	Frequency
	14	Phone	13
Online applications used	39	Computer	1
		Youtube	14
		Facebook	10
		WhatsApp	7
		Google	3
		Instagram	2
		TikTok	2
		Microsoft Office	1

Table 2 Barriers and facilitators of the use of e-health solutions as described by key informants of persons experiencing unstable housing conditions

Applications for mental health – Key informants					
	Example	Frequency (%)	Example	Frequency (%)	
Possible Barriers	Lack of confidence	17	Possible Facilitators	Easy access	18
	Literacy Level	7		Addition to standard care	8
	Lack of access	6		Anonymity	4
	Lack of efficacy	5		Mobility	4
	Language barrier	4		Confidence	3
	Lack of face-to-face interaction	3		Equality	1
				Freedom	1
				Functioning	1
				Reassuring	1

Use of mobile applications to reduce mental distress and anxiety

KIs reported accessibility to be the most important facilitator for the use of mental health applications (44%), followed by potential benefits if used in parallel with standard care (19%). However, most KIs also suggested that potentially lack of face-to-face interactions (40%) was a limitation. Further, some worried that there may be problems with text, image, and audio adaptations for migrants with low literacy levels (17%).

Almost all (86%) persons experiencing unstable housing conditions whom we interviewed felt that mobile apps might be useful to deal with stress and anxiety. Almost all interviewees experiencing unstable housing felt that smartphone apps could be helpful in dealing with stress and anxiety. Factors facilitating use of e-mental

health tools listed by study participants were anonymity, mobility, a high level of confidentiality, equal access, ease of use, as well as reassurance regarding permanent availability. Participants generally considered that this type of tool would be more effective as an addition to standard mental health care rather than a stand-alone. Barriers to the use of e-mental health tools cited included: lack of confidentiality, individuals' low literacy level (in any language), lack of access to the Internet, lack of confidence in the efficacy of DWM-OI, language barriers, and lack of face-to-face interactions. It is notable that, overall, participants experiencing unstable housing conditions reported more facilitating factors regarding the use of e-mental health tools, while social and healthcare workers more frequently expressed concern about barriers (Table 2).

Focus groups interviews (FG)

Acceptability of DWM-OI DWM-OI generated interest among persons experiencing unstable housing conditions as well as among key informants and was generally considered acceptable.

"The procedure looks easy to me, and this is relaxing. I do not want too many troubles - when I am stressed - to log in on an app which is supposed to help me". (Male, person with unstable housing, Focus group 2, Participant#3).

"My first impression is pretty positive. There are not too many things, the visuals are clear, rich and balanced" (Female, KI, Focus group 1, Participant#3).

Persons experiencing unstable housing conditions and key informants perceived the use of DWM-OI to be an addition to standard mental health care.

"The advantage of this application is that it is easily accessible, which can help us while waiting for our appointment with the psychologist (it takes a long time to get an appointment with a psychologist)". (Male, literate person with unstable housing FGD-2, Participant#1).

"Then, being able to do it once a day (or even more), can keep them busy, particularly in expressing their feelings of anxiety". (Female, KI, Focus group 1, Participant#2).

In terms of the app design, participants overwhelmingly complimented the use of the same colours throughout the app, and pointed out the diversity of cultures that were represented in the pictures used. Still, some suggestions were made. For example, a KI suggested:

"The images are good. Having said that, I think there are plenty of great examples (we [can] see families, economic issues, having access to schools...). But if we want the app to be effective, there should be images that persons can identify themselves with. We observe plenty of situations (having access to documents, unemployment, precarity...). They need to see that represented as well so they feel connected to them" (Female, KI FGD-1, Participant#2).

KIs also raised the issue of the lack of human interaction (or assistance beyond the application) and the need for trained-lay support staff to guide, accompany and provide support to persons experiencing unstable housing conditions, so that they could better use DWM-OI. Follow-up in person or via phone were considered as potentially helpful to better understand the app and maintain the user's engagement [18].

"I think it would be useful if some helper could be with them at the first session to show them how to use the app and how to get access" (Female, KI, Focus group 1, Participant#2).

"For me, who doesn't understand much, having someone explain how to use the application is a good idea." (Male, person with unstable housing, Focus group 2, Participant#4).

Interestingly, none of the participants experiencing unstable housing expressed concerns about the lack of acceptability of the DWM-OI. However, KIs expressed concern regarding the confidentiality of the information persons share when using the DWM web application.

Feasibility of DWM-OI Despite the positive feedback regarding DWM-OI, some issues raised could lead to improvements.

During FGDs, KIs emphasized different challenges in terms of literacy that apps like DWM-OI could present:

"We see people in our accommodation centre who do not read, nor write anything, and some of them even do not have a phone. I am concerned these applications will not help them because of these factors" (Female, KI FGD-1, Participant#2).

In contrast to KIs, persons experiencing housing instability did not report concerns with literacy.

"If we have simple images, not too many details and it is easy to understand, of course we will use these applications" (Male, illiterate person with unstable housing FGD-1, Participant#4).

"Indeed, as far as we can easily have access to the application, this could help while we are waiting to have a meeting with a doctor or with a psychologist. We can always ask for one of our roommates to give us a hand to understand if needed. But if it is in our language, we can manage that" (Male, literate person with unstable housing FGD-2, Participant#1).

However, it was suggested by persons with unstable housing conditions and specifically migrants that more audios should be provided to make DWM-OI easier to understand.

"For me, there's a lot of text, and I can't understand it all. But maybe with audios, I'll be able to." (Male, illiterate person with unstable housing FGD-2, Participant#3).

Interestingly, four KIs reported that, because of the lack of an accessible Internet connection, or because of users' unstable situation, there was concern about their ability to access electronic devices and apps. However, the diversity of smartphone models, phone plans and particularly of types of Wi-Fi connexions in the accommodation centers were highlighted during the course of the study:

"The Internet connection is not good enough, and some of them even do not have a smartphone. For this kind of population, there is an important digital divide" (Female, KI, Focus group 2, Participant#1).

"What will participants do when they do not have connexion to the Internet? If there is not an off-line mode, there is a risk they will not complete any module" (Female, KI, Focus group 1, Participant#3).

Concerns about having correct translations of the content of DWM-OI were reported by persons with unstable housing conditions.

"The translation is not good enough, it looks like they used Google translate. Somebody who is competent enough should be in charge of that" (Male, person experiencing unstable housing, Focus group 1, Participant #4).

"One major point is being careful with the text translations for these kinds of topics. If it is translated literally, it could have a wrong meaning that could have an impact on us." (Male, person experiencing unstable housing, Focus group 1, Participant#2).

Participants also expressed concerns about the cultural relevance of some terms used. For example, one Arabic-speaking healthcare worker/social work mentioned:

"Look at this 'unhooking' module, where they talk about 'getting away from their values'. Maybe the images look simple, but these texts are... too complicated to explain. I do not find these sentences easy to explain. What does 'an emotional storm' mean?" (Female, health care/social worker, Focus group 2, Participant#3).

"Personally, I do find it too complex for our population. There are too many obstacles. The literacy level of our population is very low, so this application is indeed too complex for them" (Female, KI FGD-2, Participant#1).

The last topic covered in the focus groups covered different exercises aiming to help participants deal with stress. Both participants experiencing unstable housing and KIs considered the use of audios in the context of the DMW app appropriate for this purpose. In addition, they liked that every week a new module and new exercises were unlocked, and appreciated that they could repeat them as many times as needed. Nonetheless, there were some suggestions. One KI stated:

"The audios look good. But an eight-minute-long exercise... This is way too long. It could discourage people" (Female, health care/social worker, Focus group 1, Participant#3).

Likewise, a person experiencing unstable housing stated:

"The audios look great, but could we have some videos as well? They could show us how to act when we feel stressed" (Male, person with unstable housing, Focus group 1, Participant#2).

One of the aspects of DWM that seemed particularly appreciated were audio recordings, especially those related to exercises associated with relaxation techniques. Nevertheless, study participants generally deemed that it was necessary for support and accompany persons using DWM, to ensure appropriate use.

In our study, both persons experiencing unstable housing conditions and KIs indicated that the modules proposed were culturally well-suited.

"The images are good. They show us... how can I put it to say... they show what we are". (Male, illiterate person experiencing unstable housing FGD-2, Participant#3).

Discussion

Main findings

Our study, based on individual interviews and focus groups conducted with people experiencing unstable

housing conditions, as well as health care and social workers employed in accommodation centres supporting this population, suggests that a smartphone app such as DWM-OI can be acceptable and contribute to addressing the mental health needs of members of marginalized groups. People experiencing socioeconomic disadvantage are at high risk of having mental health problems, yet frequently lack access to health care services, and e-mental health tools could help reduce the gap in access to appropriate support. In that sense our results are consistent with other research regarding e-mental health tools for underserved populations including migrants and refugees, which were considered to be culturally sensitive, but also flexible and time-saving [3, 19]. However, the formulation and content of smartphone apps need to be adapted to broad audiences, with diverse cultural backgrounds and limited literacy levels. Additionally, there is need to consider that among people experiencing socioeconomic disadvantage, access to digital devices as well as the Internet may also be lower than in the general population, thereby hampering access to e-mental health tools [20]. Thus, provision of content that is widely accessible on apps requiring minimum connexion volume could facilitate access and use by members of underserved groups. Moreover, one of the ways to support the use of technology could be mediation by persons who have experienced homelessness. Professionals working with people experiencing social disadvantage appear more concerned about the appropriateness of the e-mental health tools proposed than the users themselves. Overall, while e-mental health tools offer the promise of improving access to mental health support for members of marginalized groups, it is necessary to evaluate actual uptake and effectiveness before disseminating them widely.

Adaptations of e-mental health tools for persons experiencing unstable housing conditions

In our study, people experiencing unstable housing conditions, as well as health care and social workers, indicated that the DMW-OI smartphone app appears to be well-suited to address their mental health needs. However, key informants seemed more concerned about the feasibility of the app with disadvantaged and homeless people than the users themselves. This is particularly the case when it comes to phone ownership and connectivity. To address this difficulty, it might be possible to consider loaning phones to users for the duration of the application.

Reading and comprehension difficulties were also mentioned by key informants and, to a lesser extent, by residents of homeless accommodation centers. To address this issue, the app was redesigned to offer more audios and images, which were piloted with the target

population. Audios with relaxation exercises have been shown to be positively associated with intrinsic motivation and emotional regulation and their inclusion – in different languages – is a particular strength of the DMW-OI app [18].

Because of multiple barriers hindering use of the DMW smartphone app in a self-guided way, including technical difficulties and limited literacy, study participants highlighted the necessity for trained support staff to provide support to people experiencing unstable housing conditions using DWM-OI. Specifically, this support could take the form of follow-up phone calls or text messages aiming to ensure that individuals understand the smartphone app, are engaged with the exercises suggested and that the app corresponds to their needs [21, 22]. This is consistent with a priori research suggesting that hybrid systems combining the use of digital mental health tools with face-to-face discussions with a support person are especially effective [23].

Study limitations and strengths

Our research has limitations which need to be highlighted. First, we conducted interviews and focus groups before study participants actually had the opportunity to use the DMW smartphone app during the recommended 5 weeks, therefore their views regarding the suitability of this e-mental health tool are based on their perceptions rather than actual experience. Second, some of the DMW smartphone app components were not fully developed at the time we conducted this study. We are currently conducting a randomised controlled trial to test the efficacy of the DMW smartphone app as part of a stepped-care programme addressing the mental health needs of people experiencing unstable housing conditions, and at the end of this trial a second wave of qualitative interviews is planned in order to evaluate participants' experience after actual use of this e-mental health tool.

Our study also has strengths which we would like to highlight. First, our study population – people experiencing unstable housing conditions – has received limited research attention and the acceptability of e-mental health tools in this group is not well known. As the number of digital devices and tools accessible to address individuals' health needs grows, it is important to ensure that their dissemination does not increase social inequalities in access to mental health care. Second, we interviewed potential beneficiaries, as well as professionals addressing their health and social needs. The latter group are essential in disseminating health innovations to people who have experienced socioeconomic disadvantage, yet who are not always included in research studies in this area.

Conclusion

Our study suggests that the DWM-OI smartphone app is acceptable and well-suited to address the mental health needs of people experiencing unstable housing conditions, provided they have the necessary equipment and an Internet connection. Ongoing research will serve to test whether this smartphone app – alone or combined with a psychosocial intervention – can help reduce levels of psychological distress in a socioeconomically disadvantaged and culturally diverse population residing in homeless shelters and accommodation centres in the Paris region. It will also help better understand barriers and facilitating factors relative to actual use and efficacy. More broadly, digital interventions may contribute to improving access to mental health care among underserved populations and should be further investigated.

Abbreviations

DWM-OI	Doing What Matters in Times of Stress – Online Intervention
PM+	Problem management plus, individual psychological help for adults impaired by distress in communities exposed to adversity
WHO	World Health Organization
FLI	Free listing individual interviews
FG	Focus group
KI	Key informants

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12889-026-27106-9>.

Supplementary Material 1.

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Authors' contributions

MM and AT are responsible for study design and wrote the protocol for this research. They both contributed to writing the manuscript and share scientific responsibility for the results that are presented. JVM conducted individual interviews and lead focus groups, conducted data analyses and wrote a first draft of the manuscript. NF and PS participated in data interpretation. All authors participated in data interpretation. All authors reviewed and finalised the manuscript.

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Data availability

The datasets used and analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

This study was conducted in accordance with the regulatory and legal standards relative to the conduct of research involving human participants existing in France. The protocol received approval from the Internal Review Board (Comité de protection des personnes Ile de France III, Reference number: 2021-A01595-36) and was declared to France's Data Protection Agency

(Commission Informatique et Libertés, CNIL). All participants gave informed consent prior to taking part in the study.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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