CHAPTER 5

Barriers to Implementing a Web-guided Intervention in Low Resourced Communities: Lessons from a South African Pilot Study

ABSTRACT

In low- and middle-income countries (LAMIC) almost 80% of people with mental health problems receive no help for it. This treatment gap is mainly due to a scarcity of human, mental health and financial resources which are also caused by policies in LAMIC. Internet-guided, brief and simple interventions may increase access to treatment and lower the threshold for sufferers to seek help. This paper illustrates methods used and barriers encountered implementing low cost web-guided self-help in LAMIC communities. Data on the feasibility and acceptability of a web-guided intervention were collected, based on the low take-up of such self-help in deprived South African communities which lack access to mental health services. The low take-up appears to be due to a lack of computers, of internet access, and of literacy. Although acquaintance with and interest in using computers and Internet is rapidly spreading, anxiety about their use and the lack of relevant skills are still very much present. The lessons learned point to alternative ways of conducting ICT mental health interventions in developing countries.

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INTRODUCTION

About 30% of South African adults have had at least one DSM-IV disorder in their lifetime, including 16% with an anxiety disorder and 10% with a mood disorder (1). Depression and anxiety disorders can be chronic (2), severely impair quality of life (3), are associated with excess mortality (4), and incur substantial societal costs (5). Worldwide, major depression is the second most disabling medical disorder after HIV/AIDS (6). In South Africa, psychiatric disorders were ranked as the third most disabling condition, after HIV/ AIDS and other infectious diseases (7). In addition many HIV/AIDS sufferers have comorbid mental disorders (8).

In South Africa, as in many other low- and middle-income countries (LAMIC), mental illnesses are often under diagnosed and inadequately treated despite their frequency (9) and resources to treat them are scarce and unevenly distributed (10-14). When treated at all, mental health problems are largely managed face to face in primary care by psychiatric nurses and other healthcare workers who have large workloads and often lack training in mental health (15). In a recent survey, only a quarter of South Africans with a recent DSM-IV diagnosis of anxiety disorders or depression had been treated in the year preceding the interview (16).

A lack of mental health resources forced more innovative mental health intervention developments, resulting in a move to simplified treatments for common mental disorders (CMDs), mainly anxiety and depression, which are low-cost and easily accessible. This together with the rapid global expansion of the Internet and other communication technology offers new ways by which CMD sufferers can access effective brief treatment, especially if they lack funds and/or cannot get to a suitable therapist. In an attempt to widen cost-effective access to scarce mental health resources, evidence based treatments have been offered over the Internet.

A meta-analysis, of 12 studies, compared internet-based and computerized interventions for depression with control groups or face to face interventions. An overall effect size of 0.4 was found, indicating a moderate effect (17). The outcomes are enhanced when users receive support, with an effect size of 0.61 for supported interventions and 0.25 for unsupported computerized interventions (17). Similar results were found in another meta-analysis of 12

RCT's comparing computerized versus non-computerizes interventions for anxiety and depression. Interventions with therapist support had a large mean effect size and interventions without therapist support had a small mean effect size (18). This meta-analysis also found better effect sizes for computerized interventions aimed at anxiety than for interventions targeting depression (18). A meta-analysis of 23 RCT's on computerized interventions versus non-computerized interventions for anxiety found no difference in effectiveness between the two types of interventions (19). Computer-aided psychotherapy also had similar efficacy across various anxiety disorders and types of delivery (Internet, PC, laptop) (19). Computer-aided CBT self-help systems are recommended by NICE (National Institute for Clinical Excellence) for patients suffering from anxiety and depression (20).

A major advantage of internet-based interventions is that most require little therapist time. Further benefits are that they allow users to work at their own pace, may diminish stigma, obviate the need to schedule appointments with a therapist (so saving time and travel costs), and facilitate disclosure of sensitive information (21;22). However, internet-accessed self-help is not easily used by people who are illiterate or unfamiliar with the relevant technologies. Technophobia may prevent people from using computer aided self-help. In addition, internet access is often nonexistent or limited, reducing the benefit of internet self-help interventions in many LAMICs (23).

Internet-based interventions seem to be a promising line of treatment in areas lacking mental health professionals, making it important to understand barriers for its use. This paper illustrates methods used and barriers encountered implementing online PST adapted for deprived low-to middle-income South African communities. Our attempt to recruit participants proved abortive, the extensive recruitment exercise resulted in 5 responses, volunteering to use the online PST program. None of these 5 completed the PST program; 3 of them said this was because they were too busy with university studies. During our recruitment activities the interest of people in a program for their mental health problems was evident, but they indicated not to be interested in an online program. We therefore decided to adapt the online PST to a booklet version, to evaluate use of that PST booklet (24), and to collect more data on

why PST was not used online. Users were asked to complete a questionnaire about their computer and internet skills in order to understand the obstacles impeding online-PST use in their communities. Results from the 79 respondents to this survey shed some light on the feasibility and acceptability of online self-help in low–income and computer-illiterate populations.

METHODS

Development of the web-guided self-help for South African communities

The Dutch PST (problem solving therapy) website 'Allesondercontrole.nl' was translated into English, Xhosa and Afrikaans, the three official languages spoken in South Africa's Western Cape Province. The accuracy of the translations was checked by back-translating the English version (called 'Taking control') and Afrikaans version (called 'Vat beheer') into Dutch and the Xhosa version (called 'Lawula ubomi bakho') into English. A team of experts adapted the case vignettes to make them relevant to our population by identifying three themes of major relevance: HIV/AIDS, unemployment, and trauma due to violence. Three comprehensive clinical vignettes were constructed around these site-specific topics and were reviewed by South African experts in psychology, psychiatry and social work.

Subjects

The aim was to recruit a sample of 100 subjects, since this is sufficient to detect a standardised moderate effect size (d) of 0.40, (with alpha 0.05, and 1 – beta of 0.80). The subjects were volunteers from different communities who felt that they had mental health problems. People were excluded if they had suicidal plans as opposed to just suicidal thoughts, a history of past severe mental health problems, or were not literate enough in English, Afrikaans or Xhosa to work through the intervention.

In 2007, 88% of South Africans over age 15 were literate (25). The percentage of adults aged over 20 said to be functionally literate (at least 7 years of education) were: Langa 79%, Khayelitsha 76%, Manenberg 77%, Mamre 88% (25). When the present study began there was no information regarding computer literacy in these communities. Extensive computer or Internet experience was not needed, as technical assistance was arranged in each setting (in library or Internet café) and the website was kept as simple as possible.

Internet and computer access

Before recruiting subjects we visited staff at facilities that offered Internet access. We familiarized them with our project, and arranged payment for Internet use, if necessary. Each site has a public library where members have free use of the Internet for 45 minutes per day - we arranged that library staff would assist participants who needed technical help to use the Internet. The researcher preserved confidentiality of the identity of subjects wanting to use a specific Internet cafe by buying them a membership card with 5 hours of free Internet access there and obtaining agreement from café staff to help users utilise the Internet. In Mamre only one Internet access point was identified - the public library with 5 computers. Khayelitsha, Langa and Manenberg too each had a public library with 5 computers giving Internet access, but often one or two were not working. Collaboration was established with 2 Internet cafes at all online-PST-delivery sites except for Mamre. When participants wanted to use another Internet café which was more convenient for them, we would organise that.

Recruitment

After fieldwork and visits to several communities, we offered web-based PST in 4 different communities each of which had limited access to mental health care but did have some Internet access. The 4 communities represented many of the communities in Cape Town that lack easy access to mental health services, i.e. an urbanizing black township (Khayelitsha), a more

established black township (Langa), a coloured township (Manenberg), and a rural community (Mamre). These terms are intended not to reify these categories, but rather because they help shed light on denote disparities between communities continuing 14 years after the end of apartheid.

Web-guided PST users were initially recruited with pamphlets and posters on notice boards of community libraries, community centres and public health facilities, by giving short talks on the PST program in English, Xhosa or Afrikaans in such settings for groups of people, and approached church leaders at community churches and NGOs at each site. When the recruitment proved to be difficult we also tried to recruit web-guided PST users from groups of people likely to have computer and Internet experience by giving talks and handing out pamphlets at Internet cafes and computer-training schools in the designated communities, and by placing posters at the University of the Western Cape (UWC), most of whose students come from those communities.

Intervention

In 2008, volunteers were invited to access our PST website weekly for 5 weeks, read the screens, print out homework assignments to do between sessions, and return to the website the next week to go through the next session. We offered brief phone support (in the user's own language) during their 5 weeks of working through the program, and to support users' homework by weekly phone calls from coaches, who were the project manager and assistant trained in web-guided coaching by P. Cuijpers.

The website gave basic instructions suitable for users with minimal experience of a computer or the Internet. Users merely had to access the website, read its screens and print the homework sheets, and could ask for hands-on assistance from library or Internet-café staff.

Adaptation to booklet PST and access and literacy questionnaire

When our attempt to recruit participants for the online PST proved abortive, we decided to adapt the online PST to a booklet version, to evaluate use of that PST booklet (24), and to collect more data on why PST was not used online. During our recruitment activities the interest of people in a program for their mental health problems was evident, but they indicated not to be interested in an online program.

An access and literacy questionnaire was filled out by booklet PST users. Since we couldn't find a fitting existing questionnaire for the information we wanted to collect, we created a new questionnaire. Our computer literacy and access questionnaire has two parts and was available in English, Xhosa and Afrikaans. Part one has questions about computer and internet usage and access. Part two evaluates people's attitudes to computers. Participants completed the questionnaire after they had used the PST booklet.

RESULTS

Recruitment web-guided PST

The extensive recruitment exercise resulted in 5 responses, volunteering to use the online PST program. None of these 5 completed the PST program; 3 of them said this was because they were too busy with university studies.

Characteristics of population booklet PST

TABLE 1 shows demographic characteristics of the 79 people who answered the questionnaire about computer and Internet experience. Their mean age was 37; 34% were male; 37% were black and 63% coloured. Most lived in Manenberg (56%), followed by Khayelitsha (25%). Only 31% had finished high school, 26% had not finished primary school, 29% were employed, and 42% were married. In general, in the Cape Town Metropolitan area only 27% of the people are

unemployed (25), while in our sample 71% was unemployed. Nobody in our sample had finished an educational level higher than grade 12 (high school) and 26% had not finished primary school, while in for example the Capetonian white population 36% finishes higher education and only 1.3% never finishes primary school (25). The reported demographic data in table 1 confirm that the study population is indeed the targeted deprived and dislocated population.

TABLE 1 Survey respondents' demographic characteristics and computer/internet experience

	% of total Sample	% of people with computer/internet experience				
		None	**<1yr**	**1-3yrs**	**3-5yrs**	**>5yrs**
Total sample **N=79**		**41/57**	18/13	9/5	26/20	8/5
Age: 18-29	48	20/43	26/26	17/6	26/17	11/9
30-39	21	27/40	7/7	7/7	53/47	7/0
40-49	18	64/71	7/0	0/21	41/0	7/7
50+	13	80/100	20/0	0/0	0/0	0/0
Sex: Female	66	51/69	12/10	6/0	26/18	6/4
Male	34	15/31	31/19	15/15	27/27	12/8
Ethnic background:						
Xhosa	37	21/36	11/0	7/4	57/57	4/4
Coloured	63	47/66	23/21	11/6	9/0	10/6
Living location:						
Khayelitsha	25	35/41	6/0	0/0	53/53	6/6
Manenberg	56	58/80	18/16	8/3	11/0	5/3
Cape flats other	19	23/31	39/31	15/23	0/0	23/15
*Currently married:*Yes	42	52/65	6/0	0/0	36/32	6/3
No	58	27/48	27/23	16/9	21/14	9/7
Employed: Yes	29	18/27	9/5	5/0	64/64	4/4
No	71	45/66	23/17	11/7	11/4	9/6
Education:						
No general	26	63/79	21/11	5/0	5/5	5/5
NQF1 (Gr9)	11	38/63	50/37	0/0	0/0	12/0
NQF2 (Gr10)	16	50/67	17/25	25/8	8/0	0/0
NQF3 (Gr11)	16	33/33	0/8	8/17	33/25	25/17
NQF4 (Gr12)	31	13/39	13/4	9/0	61/52	4/4

Feasibility and acceptability of a web-guided intervention

Of the total booklet PST users, 41% said they had no computer experience, and 57% had no Internet experience (TABLE 1). TABLE 2 shows that 69% had some access to a computer and 59% had access to the Internet. TABLE 3 reflects the attitudes of people with and without experience in using computers and an online program. In the computer-experienced group 30% reported anxiety about using a computer, in the non-experienced group 48%. However, 75% of the people with computer experience and 90% of those without such experience said they would have liked to have used the PST program on the computer, while 89% of the people with computer experience and 65% of those without such experience said they would go to the library or Internet café to do so.

TABLE 2: Perceived computer and Internet access (in percentages)

Access	Computer	Internet
None	31%	41%
Home	31%	23%
Library/school	22%	21%
Friend/family	10%	10%
Internet café	6%	5%

TABLE 3: Percentage of people agreeing with following statements

	% Some experience	% No experience
I would like to work more on a computer in future	93	80
I am confident about my computer skills	74	-
I feel comfortable with computers	83	63
I like computers	91	63
I am confident about my Internet skills	76	-
(If I had the skills) I would have liked to do PST program on computer	75	90
I would go to library or Internet café to use PST program	89	65
I am frightened by computers	0	21
I avoid computers because they are unfamiliar	4	13
I feel anxious about using a computer	30	48

DISCUSSION

The results indicate that the lack of access to a computer and the Internet and the lack of basic computer (41%) and Internet literacy (57%) among community members probably played a role in the poor take-up of our web-guided program. Of respondents with computer and internet skills, 30% said they were anxious about working on a computer. In contrast, a large majority said they'd like to work more on a computer in the future, feel comfortable with computers, and like computers. Our results suggest that at the time we did this pilot study the use of online self-help for common mental disorders was not feasible in disadvantaged communities in Cape Town, South Africa.

When interpreting these findings one must consider that since we used convenience sampling. The respondents were all people volunteering to participate in an intervention for their mental health problems from low-resourced areas, therefore these findings may not hold for the general South African population. Studies into the acceptability and feasibility of web-guided programs in middle to high income South African populations should be conducted to get a more general idea of the usability of web-guided interventions in South Africa.

The setting in which online treatments are offered can influence their uptake and adherence (26). Using Internet cafés and public libraries has pros and cons. Their main benefit is that they make help available when people need it. However, an important downside is their potential lack of privacy bringing a risk of stigma when dealing with sensitive issues like mental health problems. Data on this issue would be important to collect in future research. Some subjects mentioned problems of travel time & costs and restricted opening hours regarding access to libraries and Internet cafes, but we have no systematic data on this. Even when Internet access is available, unfamiliarity with and fear of the relevant technology can make the use of an online intervention difficult if not impossible.

Access to e-interventions may be eased by using cell (mobile) phones as a medium for health interventions. Mobile phones are used by people from most socio-economic backgrounds, cultures and ages in South Africa and other low- and middle-income countries

(27;28) and give more mobility, access and privacy than PCs do. The 'digital divide' along the socio-economic gradient is less prevalent with cellphone than PC use (29). People with minimal technological skills use mobile phones more easily than they do the computer and Internet. Recently-introduced SMART phones give quick access to the Internet, while cellphone networks cost less to implement over large areas than landline connections do (30;31). Another advantage of a mobile phone is a higher degree of portability, access and privacy.

Health interventions via mobile short-message services (SMS) are fairly new. A few studies reported on the value of SMS to remind patients of scheduled medical appointments, coordinate medical staff, deliver medical test results, and monitor patients' side effects after treatment (32). In a recent review, SMS interventions fostered short-term preventive health behaviours and self-management (33). In South Africa mobile-phone use improved adherence in taking antiTB medication (34;35) and the monitoring of HIV patients (36). Barriers to cellphone use are the sharing of mobile phones (32) and limits to their information-carrying capacity (an SMS is limited to 160 characters).

Although acquaintance with and interest in using computers and Internet is rapidly spreading, anxiety about their use and the lack of relevant skills are still very much present. These can be barriers to the successful implementation of internet interventions and have implications for future studies in communities with low levels of computer literacy. Such studies should include a detailed feasibility and acceptability enquiry into the attitudes of community members towards computers and the use of the internet, into other possible obstacles to implementation, and methods to overcome such barriers. Such knowledge could facilitate the provision of access to web-guided self-help by people who lack mental health care.

The current pilot study examined barriers to the potential use of internet-guided interventions for common mental disorders in deprived communities in Cape Town, South Africa. The lessons learned point to alternative ways of conducting ICT mental health interventions in developing countries. Familiarity with computers and especially with cellphones offering Internet access and other functions formerly restricted to PCs is spreading rapidly in

South Africa and other LAMICs. Better use of web-guided self-help might be found in a few years time. Until then, self-help-book guidance in face-to-face groups might be more practicable to expand access to help in deprived communities.

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