BARRIERS AND CONTRIBUTORS TO SUCCESS IN TELEMEDICINE: A QUALITATIVE STUDY OF A STRUGGLING TELEPSYCHIATRY PROJECT AND A SAMPLING OF HIGHLY SUCCESSFUL PROGRAMMES

Carolyn Lauckner PhD[1] and Pamela Whitten PhD[1]

University of Georgia, Athens, Georgia, USA

Abstract

Telemedicine programmes, though popular and increasingly effective, can sometimes fail with little indication as to why they did so. This study provides first a qualitative analysis of the authors' failed telepsychiatry project, and second, an interview study completed with personnel from successful telepsychiatry programmes. Together, these shed light on what went wrong with the authors' project, and also provide insight about critical factors for telepsychiatry success. Findings suggest the sophistication or features of the technology are not key factors in failure or success. Instead, community, patient-based, and study-specific barriers were most commonly cited as issues that inhibited study recruitment and enrolment. Based on these findings, recommendations are provided to address common barriers and increase the likelihood of success in telepsychiatry.

Keywords: telemedicine; mental health; psychiatry; videoconferencing; hospitals, rural.

Introduction

Telemedicine increases access and reduces barriers to healthcare for individuals who might not be able to receive it otherwise. Research on telepsychiatry has shown it to be clinically effective for treating a variety of mental health conditions, including depression,[1] panic disorders,[2] and post-traumatic stress disorder.[3] Additionally, patients who have used telepsychiatry express great satisfaction with the care delivery model, noting that they felt able to present the same information over video as they could in person,[4] and that they preferred to use telepsychiatry over travelling to see a psychiatrist.[5] These services are especially valuable for individuals in rural areas, who would otherwise have to travel long distances to reach a psychiatrist.

With these past successes in mind, the authors endeavoured to test the feasibility of a telepsychiatry intervention delivered to cancer patients who showed signs of depression and lived in rural areas. Previous studies have used telepsychiatry in this context with success, showing decreases in anxiety and improvements in quality of life.[6] Cancer patients have also been highly satisfied with mental health services delivered via videoconferencing, saying they would recommend it to other patients and felt comfortable seeing a psychologist in this manner.[7] Thus, the authors were surprised to encounter significant difficulty with enrolling cancer patients in their telepsychiatry project, and subsequently with maintaining partnerships with rural hospitals who saw little benefit due to the lack of telepsychiatry activity. To provide lessons to future telepsychiatry providers and researchers, a qualitative interview study was completed to examine potential reasons for these failures. Several different types of barriers to telepsychiatry were examined: patient-related, organizational, technological, community, study design, provider-related, and cancer-related. Overall, the goal was to determine how researchers can best utilize telepsychiatry to achieve maximum impact for both patients and providers.

Methods

Recruitment and Participants

This study consisted of a series of semi-structured phone interviews containing open-ended and Likert-style questions. Two types of participants were recruited via e-mail invitations: health professionals or staff located at the remote sites of the authors' telepsychiatry project in Michigan and Indiana, and researchers or health professionals associated with apparently

successful telepsychiatry programmes across North America. No incentives were offered for participation, and the interviews took approximately 15-25 minutes. There were 14 participants total, most of whom were female (79%), and who represented nurses, programme directors, researchers, chief operating officers, psychiatrists, and project managers / coordinators for telepsychiatry programmes. Interviewees were from ten different states (MI, IN, AZ, WI, CA, IL, SC, WV, NC), as well as Ontario and the District of Columbia.

Questionnaire

The questionnaire delivered to personnel involved with the authors' telepsychiatry project began with a basic open-ended question: "Why do you think patients have declined to participate in this telepsychiatry project?" The questionnaire delivered to individuals from outside telepsychiatry programmes, conversely, did not assume recruitment difficulties and instead asked individuals to first describe their programme. After, they were asked about the process of recruitment or enrolment. Following these open-ended questions, respondents were given a series of statements describing potential barriers to recruitment, which were generated based on previous research in this area and the researchers' own experiences in telepsychiatry. Respondents were asked to indicate if they agreed or disagreed with each statement. Questions were shared among researchers to check for face validity and coherence. Internal reliability was not assessed because these questions were not meant to form a unidimensional scale, but to simply investigate the presence or absence of barriers. Only individuals affiliated with the authors' project were asked about cancer-specific and provider-specific barriers. These questions are provided in Table 1 for reference, along with their associated frequencies of agreement.

Analyses

As a descriptive study, the only statistics calculated were frequency of responses. Some questions were not applicable to all respondents, so percentages are calculated based on those who were able to provide a response (sample size for each question is indicated in Table 1). Open-ended questions were transcribed and content analysed qualitatively to identify common themes and to cull representative quotations to provide further context regarding the quantitative results.

Results

Characteristics of the telepsychiatry programmes

Four individuals were nurses or study coordinators for the authors' telepsychiatry project, which had three study sites. This feasibility project required active recruiting of cancer patients who showed signs of depression. Cancer patients visiting the facilities were provided a written handout with information about the study, were administered consent forms if interested in participating, and then responded to a series of screening instruments. If their scores on these instruments indicated at least moderate levels of depression, they were offered enrolment in the study. Those who were enrolled saw a psychiatrist over video on four separate occasions. At the end of the study, nine patients had been enrolled.

The other 10 participants were from telepsychiatry programmes across North America. All of these programmes offered on-demand services, such that there was little actual recruitment of patients - most patients were referred to telepsychiatry by other physicians. Seven of the programmes involved a university and community health organisation partnership, and four were actively involved in or planning to do research. Five programmes mentioned doing work in child psychiatry, and three mentioned working closely with Medicaid or medical assistance programmes. Interestingly, three programmes indicated that they have successfully used online scheduling for managing their telepsychiatry programme. All ten programmes had achieved growth and success, with five being in operation for 10 years or more, while the other five had been providing services for at least four years. In spite of their success, though, these programmes still encountered barriers to implementation, discussed below.

Close-ended responses: barriers

Table 1 shows patient-related barriers and community barriers were relatively common, as were study-related barriers for those who actively recruited patients. Technology barriers and organisational barriers were not commonly cited.

Open-ended responses: barriers

Several respondents, when asked about barriers to recruitment or enrolment, mentioned that many patients believed that they did not need the help of a psychiatrist. This was stated by several of the medical

Table 1. Identified barriers to recruitment and enrolment.

Type of Barrier	Questionnaire Statement	Frequency (%)	
		Agree	*Disagree*
Patient	The patient has a stigma toward mental health (n=12)	58.3	41.7
	The patient believes that they don't need any mental health help (n=12)	66.7	33.3
	The patient distrusts/dislikes video-based psychiatry (n=12)	41.7	58.3
Organisational	There are not enough staff required to recruit patients (n=12)	25.0	75.0
	There was not enough input solicited from nurses/staff during the planning stages (n=11)	9.1	90.9
	There are not enough time to recruit/enrol patients (n=11)	0.0	100.0
	There are problems with fitting recruitment/enrolment into the typical workflow (n=12)	33.3	66.7
Technological	There is not enough technical support for using the equipment (n=13)	7.7	92.3
	There is not a reliable Internet connection (n=14)	14.3	85.7
	The telepsychiatry equipment is difficult to use. (n=11)	0.0	100.0
Study design	The recruitment materials (e.g., study flyer) are ineffective. (n=7)	57.1	42.9
	The recruitment/enrolment process does not encourage participation very well (n=9)	44.4	55.6
Community	There is already psychological support available for patients (n=11)	63.6	36.4
	The hospital/clinic is too far away from patients' homes (n=11)	63.6	36.4
	There has not been consistent contact between the project managers and health professionals (n=13)	7.7	92.3
	There is not an on-site advocate for the telepsychiatry project (n=13)	15.4	84.6
Cancer	The patient's treatment schedule prevents telepsychiatry appointments (n=4)	25.0	75.0
	The patient's side effects from treatment prevent telepsychiatry appointments (n=4)	25.0	75.0
	The patient has a good prognosis (n=4)	100.0	0.0
Provider	I do not know enough about the telepsychiatry project (n=4)	25.0	75.0
	The telepsychiatry programme is considered unnecessary by me or other nurses (n=3)	0.0	100.0
	The telepsychiatry programme is not a real priority for me/other staff (n=4)	75.0	25.0

personnel involved in the authors' telepsychiatry study, such as the participant who said:
"I'd think they'd really benefit so I'd go in and talk to them one-on-one and ask them…and they'd say 'No, I'm not down at all. I'm fine.'"

This even occurred among the on-demand programmes, which typically relied on referrals and did little actual recruitment. One participant said:
"Patients just resist it…[They say] 'I'm not sick, I just need somebody to talk to.'"

Other individuals commented on complicated screening or enrolment procedures, which could deter individuals from participating. This was another problem that was especially cited by several health professionals in the authors' programme, which required a two-instrument screening procedure to indicate if participants had signs of depression. One nurse involved with recruitment stated:
"For them to have to read through as much as it appears they have to read through, and to answer those questions, and then based on those answers they may or may not meet criteria…I think it's a little complicated."

Another participant from an outside telepsychiatry programme mentioned state requirements for achieving written consent for patients, which sometimes intimidated participants.

Health professionals themselves sometimes contributed to problems with telepsychiatry. Some respondents reported that a lack of good professionals was an issue, as their patient demand exceeded their ability to employ and retain the required psychiatrists. Other personnel-related problems were related to the quality of those working on the project. In one case, health professionals were not always "on board" and thus did not devote time to recruiting patients. Another participant reported that the quality and availability of study coordinators had had a negative impact on enrolling patients, saying:
"You get variable quality of the local clinic coordinators … so you're at the mercy of the clinic coordinators in terms of booking patients in."

A final issue reflected by participants was that of transportation. A professional working in an especially rural area with individuals on medical assistance stated:
"Public transportation is very limited in almost every county we operate in… There's times that they don't have a ride available at the time of the appointment."

In the authors' cancer-related telepsychiatry programme, this issue was complicated even further by the fact that patients were frequently coming into the hospital for treatment. One nurse said:
"a lot of our patients do not have finances or means of transportation to come here beyond their bare minimum of this is what you have to do, you have to come on these days for your treatment."

Hence, in some cases, there were still relatively large issues of access that could not be overcome, even by telepsychiatry.

Discussion

The results gleaned from this research point to one conclusion: technology is not the key to success or failure in telepsychiatry projects. The actual videoconferencing tools used did little to negatively affect patient recruitment, enrolment, or experiences. The environment, health professionals, and patients around which the technology is placed are much more likely to have a profound impact on the success or failure of a programme. A key factor, which represents a stark contrast between the successful outside programmes surveyed and the authors' own telepsychiatry programme, is that of the health context. All of the outside programmes operated within already-established mental health facilities and existing patient bases. Individuals came to them for help of their own volition or were referred by existing medical professionals. This was different from the context of a cancer clinic, where both patients and health professionals were not prepared to discuss mental health issues. This was a likely contributor to the lack of participation, as patients were preoccupied with cancer treatment schedules and side effects. Although understandable, this has concerning implications for the flexibility of telepsychiatry programmes. If a mental health context is needed for success, then there are many patients who may not be getting the psychiatric help they need, simply because they do not have access to mental health facilities or do not realise they would benefit from mental health help. Future research should seek to determine ways of bringing mental healthcare into other health contexts, such as through orientation programmes about psychiatric care, immediate consults with psychiatrists to provide patients with an introduction to the technology, or other educational materials.

In addition to this important problem, there are other barriers to telepsychiatry that could potentially

be addressed through the use of technology. The following sections will discuss technological solutions for meeting these needs and improving the state of telepsychiatry programmes.

Technology for screening patients

Many individuals reported that the process of screening and enrolling patients occasionally hampered participation. One potential solution for addressing these issues is to use technology-based screening procedures. Using a laptop- or tablet-based programme, patients could walk themselves through a series of screening instruments, such as depression or anxiety questionnaires. This would reduce the amount of work for health professionals, making the process much easier for both parties involved. It would also engage the patients in the process of enrolment by giving them control over their own participation and educating them about their own mental health status in the process. This would likely decrease the number of patients who believe that they do not need help, while also increasing patient empowerment due to more knowledge about their condition. Such a procedure would enable automatic data capturing, which reduces paperwork and allows for easier record-keeping. There is also potential for these responses to be synced with the patients' medical record, which would be very valuable in a health landscape that is increasingly reliant on electronic data. Creating such a technology-based screening procedure would not be difficult or expensive, and could have a profound impact on the success of patient enrolment.

Technology for increasing access

Another commonly cited problem was that of distance. Even with telepsychiatry many individuals had trouble getting to their rural health providers for telepsychiatry sessions. One of the respondents indicated that their programme was exploring the use of mobile-based telepsychiatry, which raises HIPAA concerns in the US but would overcome these barriers of access. Mobile videoconferencing is commonplace now on smartphones, either through the use of Skype or FaceTime. Additionally, especially if users are on a WiFi connection, video chatting software can be both reliable and easy to use. Such mobile platforms would also allow for on-demand telepsychiatry, such as if individuals are in the middle of an episode, are in a public place, or need immediate help. This would expand the reach and applications of telepsychiatry significantly and would be an important step forward in the field. Even if mobile telepsychiatry is too difficult to develop, personal computer based telepsychiatry would decrease access barriers. If patients could access a psychiatrist through their home computer, then the amount of enrolments would likely increase, while the number of missed appointments would decrease. One of the respondents indicated that their telepsychiatry programme actually operates a website, in which anyone can pay by the hour and see a psychiatrist using their own computer. Such practices are likely to be the future of telepsychiatry.

There is, however, one primary issue that would need to be addressed if these approaches were attempted: security and privacy. Current HIPAA regulations require encrypted connections for patient/provider conversations, which are especially difficult to attain with mobile platforms. Although unlikely, it would be possible to break into a connection and listen on a call if the proper encryption was not used. This is less of an issue with home computers, as secure websites and connections are now commonplace and are easy to implement. Hopefully, recent developments in the regulation of mobile health, such as the FDA's released guidance on mHealth apps, will lead to clear protocols for enhancing security on mobile devices.

Technology for evaluation and feedback

A final way in which technology can improve telepsychiatry is through facilitating evaluation and feedback, from both patients and health professionals. Several individuals reported that a key to their success was monitoring patient and provider satisfaction on a regular basis. Just as technology can be used to deliver screening instruments, it could also be used to deliver instruments for evaluating patient satisfaction and outcomes. Depending on the software being used to facilitate videoconferencing, assessments for patients could be built-in and delivered automatically at the conclusion of each session. Short questions about the quality of the call, the utility of the guidance received, and behavioural intentions to comply with treatment recommendations would be valuable metrics for determining programme success. These questionnaires could also be delivered to psychiatrists facilitating the sessions as a way of assessing their satisfaction with the service. Because so many projects reported difficulty with recruiting and maintaining qualified psychiatrists, routine assessments such as these would

allow project managers to gauge their current needs, while also allowing psychiatrists to feel as though their opinions are valued.

Conclusions

Previous research and the authors' personal experiences have made it clear that telemedicine, even if carefully planned and well-intentioned, can often fail. Inspired by negative experiences with our own telepsychiatry project, our subsequent study examined contributing factors to recruitment and enrolment difficulties. Based on interviews with project staff, as well as with representatives from several sustained projects across North America, it became clear that technology is likely not the primary barrier to telemedicine success. Instead, it is more probable that the contextual factors of telemedicine implementation have a significant impact on success. The most common barriers uncovered by this study were a lack of perceived patient need, problems with the recruitment process, and issues with transporting patients to the rural health clinics. Motivated by these barriers, several methods for capitalising on technology and increasing its impact to address these problems were discussed. Using technology to facilitate automated screening and evaluation procedures and to facilitate telepsychiatry consultations from within patient homes could greatly decrease barriers and maximize the value of technology within interventions.

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Corresponding author:
Dr. Carolyn Lauckner
316 Ramsey Center
University of Georgia
Athens, GA 30602
clauck@uga.edu

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