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ORIGINAL PAPER

Is Telemental Health Services a Viable Alternative to Traditional Psychotherapy for Deaf Individuals?

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Abstract Access to mental health treatment is a vital part of a comprehensive health care plan. Deaf individuals often have difficulty accessing mental health services. Four-hundred twenty-two participants completed an anonymous questionnaire about their perspectives of telemental health services for deaf individuals. Results showed that several variables, such as if the participant was unable to receive another type of psychotherapy and whether the therapist was ASL-fluent, were significantly related to whether the respondent would use TMH. The participants reported that TMH services are a viable option for treating a variety of mental health issues. Telemental health services can act as a bridge between consumers of mental health care and their providers allowing accessible and equitable health-care opportunities.

Keywords Telemental health · Telepractice · Deaf · Mental health

Introduction

Access to mental health care is an important component of a comprehensive plan to address disparities in health care (Sequist 2011). Some groups, such as those living in rural areas, members of underserved populations, members of minority groups, those who are poor, and individuals with disabilities, face additional challenges (Afrin and Critchfeld 1997; Behl and Kahn 2015; Chan et al. 2014; Johnson 2014; Mohr 2009; Sequist 2011; Shore 2013). There are a number of reasons for reduced access to services (Behl and Kahn 2015; Blasier et al. 2013; Chan et al. 2014; Gibson et al. 2010; Mohr 2009; Santa Ana and Stallings 2013; Sequist 2011). Insurance companies often do not cover telemental health services. Clinicians may not often refer clients to specialty services, especially if these services are unknown to the provider. The availability of such specialists is often limited or non-existent, especially in rural areas. Finally, the availability of providers who are culturally and linguistically competent is severely lacking. As a result, individuals from at-risk populations can have limited or no access to the healthcare they need. Limited access to mental health care can lead to worsened outcomes and the progression or worsening of a mental illness (Sequist 2011).

The deaf community is recognized as a minority population with its own cultural traditions and values (Wilson and Schild 2014). Often called an "invisible minority," deaf individuals face disparities medical and mental health treatment. According to U.S. Census Bureau (2014) approximately 12.6% of the U.S. population in 2014 reported being disabled. Approximately 6.2% of the population reported having a hearing difficulty. Using this estimate, approximately 19,500,000 United States citizens have some degree of hearing loss, yet the number of those with hearing loss who communicate primarily using American Sign Language (ASL) is much smaller; the exact number of these individuals is unknown (Census Bureau 2014; National Institute for Communication Disorders 2015). Though census data do not include sign language as an alternative language at home, estimates of sign language users vary widely from 100,000 to 500,000 in the United States to 15,000,000 worldwide (Census Bureau 2014; Mitchell et al. 2006; Schein and Delk 1974).

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Some research studies indicate that an estimated 80–90% of deaf individuals with chronic mental illness are not able to access services (Behl and Kahn 2015; Blasier et al. 2013; Cabral et al. 2013; Wilson and Schild 2014). Barriers to accessibility include: (a) inability for hearing providers to communicate with their deaf patients, (b) poor interpretation or unavailability of qualified interpreters, (c) limited English language skills by deaf patients which prevent adequate discussion of symptoms, (d) a lack of culturally competent providers who are familiar with deaf culture and are fluent in ASL, and (e) lack of specifically-targeted services for deaf individuals. The added complexity of communication barriers between health care providers and their deaf patients can create insurmountable difficulties and legal liabilities. These barriers make mental health services underutilized, which in turn, reduces the availability of the resources for deaf people.

Research indicates that deaf individuals prefer mental health providers who are fluent in ASL and who understand deaf culture (Afrin and Critchfeld 1997; Blasier et al. 2013; Cabral et al. 2013). Even when interpreters are provided, a deaf consumer may not divulge information because of concerns about confidentiality, fear of stigma, and concerns about the interpreter's ASL fluency. Negative experiences with non-signing mental health providers can lead to distrust and resistance toward the mental health system.

Because of the lack of accessible services for deaf individuals, including interpreters, the hospital may often be the first stop when a mental health crisis occurs (Wilson and Schild 2014). Hospitals are required by law to provide interpreters. However, there may be long waits for an interpreter to be secured and arrive at the hospital, thereby causing further isolation when a deaf individual is in crisis. Qualified interpreters are often hard to obtain, especially in rural areas. Often non-signing providers are unable to assess whether an interpreter possesses the skills necessary to work with someone who has a mental health problem. In cases where the interpreter is not truly qualified, more harm can be done with inaccurate assessments, diagnosis, medications, and other treatments.

Telemental health services, psychotherapy and psychiatry services delivered through videoconferencing or other electronic modalities, can help reduce these disparities (Afrin and Critchfeld 1997; Pruitt et al. 2014; Sequist 2011; Shore 2013; Sorocco et al. 2013). The provision of mental health services using videoconferencing, psychiatry in particular, has been in use since the 1950s through the US Department of Veteran's Affairs (Chan et al. 2014; Shore 2013). Numerous studies document the effectiveness and efficacy of telemental health services with non-disabled populations (Chan et al. 2014; Choi et al. 2014; Hailey et al. 2008; Montero-Marin et al. 2013; O'Reilly et al. 2005; Pruitt et al. 2014; Richards and Vigano 2013; Sorocco et al.

2013). The research indicates that TMH services can be used in treating many psychiatric issues, even with individuals who have psychotic and delusional disorders, cognitive delays, and physical disabilities (i.e., sensory impairments) (Choi et al. 2014; Montero-Marin et al. 2013; Santa Ana and Stallings 2013; Shore 2013). Studies show that telemental health services are cost-saving because of decreased travel of specialists, improved care coordination, and cost avoidance through early treatment (Blasier et al. 2013; Chan et al. 2014; Gibson et al. 2010; Mohr 2009; Pruitt et al. 2014; Sorocco et al. 2013).

Telemental health services are particularly suited for treatment of deaf individuals (Afrin and Critchfeld 1997; Wilson and Schild 2014). Visually-oriented technology is familiar to many deaf individuals through their personal use of the videophone, video relay services (VRS), video remote interpreting (VRI), and other visual technology and social media applications (e.g., FaceTime, Skype) (Behl and Kahn 2015). Signed communication and nonverbal context cues, such as body language and physical expressiveness, is easily conveyed through video technology (Stredler-Brown 2012; Wilson and Schild 2014). Deaf individuals report increased satisfaction, decreased travel costs, increased savings in time, and improved accessibility when using telehealth technology (Wilson and Schild 2014).

In summary, telemental health services are an effective way to reduce disparities in health care and increase accessibility among deaf individuals. Specialty services targeted for deaf consumers are not widely available. Making services available using providers who are culturally and linguistically competent through video technology is a way to reach a population that is often overlooked and underserved.

Purpose

The purpose of this project is to explore the potential benefits and challenges involved with telemental health services with deaf individuals who use ASL as their primary language. In particular, the study seeks to explore whether deaf individuals think that telemental health services are a viable alternative to traditional face-to-face psychotherapy.

Methodology

Participants

Inclusion criteria for the study included deaf adults over 18 years old who used ASL as their primary language; all other were screened out from participation. The sample included 422 deaf individuals, 239 women and 166 men (58.6 and 40.7% of the sample respectively), who use ASL as their primary language. Seventeen individuals did not indicate

gender. The majority of the sample, 84.1 % (n = 355) were between the ages of 18–29 years old; 12.3 % (n = 51) were between 30 and 49 years old; 2.4 % (n = 10) were between 50 and 65 years old. Six participants did not reveal their age group. See Table 1 for the racial composition of the sample.

Measures

Participants completed an anonymous paper-and-pencil questionnaire about their perspectives of mental health services for deaf individuals (see Appendix 1). Items were evaluated using the Flesch–Kincaid analysis indicating that the writing level was at a sixth grade reading level. This type of questionnaire was used to avoid problems with using an ASL-translated instrument, such as those that can occur with translation and back translation (Crowe 2002).

Items were categorized into three categories: (1) seven items about knowledge and use of telemental health services (TMH), (2) four items about demographics, and (3) 12 items about types of problems that could potentially be addressed by TMH technology. Knowledge and use of TMH services asked participants about their familiarity with and openness to using TMH services using a five-point Likert scale rating (0 = None, Not at all to 5 = A lot, Very Much). Items that asked participants to evaluate the types of problems that could be addressed by TMH services used a five-point Likert scale rating (0 = None, Not at all to 5 = A lot, Very Much). Participants took approximately 10 min to complete the survey.

A Cronbach's alpha was conducted in order to assess the internal consistency of the questionnaire given that participants completed a written questionnaire when their primary language was ASL. Cronbach's alpha was .919.

Procedures

After IRB approval, the researcher solicited participation of qualified respondents using a non-random sampling strategy. The research packet for each participant contained an

Table 1 Racial composition of the study participants

Race/ethnicity	Frequency (N)	Percent (%)
White	211	50.7
African American	71	17.1
Latino	53	12.7
Biracia/multiracial	43	10.3
Asian	22	5.3
Middle-eastern	8	1.9
Native or Alaska American	6	1.4
Pacific Islander or Hawaiian	2	0.5
Total	422	

information sheet about the parameters of the study (e.g., informed consent), an educational handout that contained visual and written descriptions of a TMH session, and the questionnaire. The educational handout illustrated the process of using telemental health services with pictures of people using the equipment and described how the session worked. The educational handout portrayed a client and therapist using ASL for therapy. Participants then completed the questionnaire.

Results

Knowledge and Use of, and Problems Addressed by TMH Services

Descriptive statistics were used to evaluate participants' knowledge and use of TMH services, and problems to be addressed by TMH services. See Table 2 for the mean scores on each variable.

Relationships Between Variables

Spearman's rank correlation coefficient (Spearman's rho), a nonparametric measure used to assess the relationships between ordinal variables. Spearman's rho was used to compare the relationships between relevant variables.

Table 2 Mean scores on knowledge, use, and problems addressed by TMH services

Variable	Mean (SD)
Knowledge of TMH services	1.22 (1.66)
Personal experience with TMH for psychotherapy	0.392 (1.05)
Knew someone who had used TMH services before	0.75 (1.43)
How beneficial you perceived TMH services	3.33 (1.58)
Would use TMH services yourself	2.47 (1.83)
How often you have received mental health therapy	0.96 (1.47)
How often were you unable to receive therapy services	0.68 (1.33)
Would TMH services be helpful for	
Problems with anxiety	2.89 (1.68)
Problems with moods, such as depression or bipolar disorder	3.00 (1.77)
Problems with psychosis	2.37 (1.88)
Thoughts of suicide	2.52 (1.96)
Thoughts of killing someone else	2.35 (1.97)
Problems with drugs and/or alcohol	2.59 (1.92)
Receiving therapy while in jail	2.76 (2.02)
Problems with a relationship or marriage	2.73 (1.85)
Problems with eating disorders	2.59 (1.85)
Problems with conflict or anger	2.90 (1.81)
Problems finding an ASL therapist	2.99 (1.96)

Table 3 Types of problems, benefit of services, and use of TMH services

Problem to be addressed	How beneficial TMH Services can address the problem rho (p < .0001)	Whether respondent would use TMH him/herself to address the problem rho (p < .0001)
Nervousness, anxiety	.301	.318
Mood (depressive disorder, bipolar disorder)	.311	.339
Psychosis	.271	.268
Suicidal ideation	.240	.207
Homicidal ideation	.205	.194
Alcohol and drug use	.254	.273
Receiving therapy in jail	.247	.245
Relationship/marital problems	.285	.291
Eating disorders	.298	.285
Conflict/anger issues	.245	.267
Problems finding a local therapist who uses ASL	.283	.243

Age

There was a positive significant relationship between the age of the respondent and knowing about TMH services (rho = .115, p = .019) and knowing someone who had used TMH services before (rho = .117, p = .18).

Whether a Respondent Would Use TMH services

Several variables were significantly related to whether the respondent would use TMH. Knowing someone who used the service was significantly related to whether the participant would use TMH services (rho = .156, p = .002). If the respondent had experienced psychotherapy before was significantly related to whether (s)he would use TMH services (rho = .145, p = .003). If the respondent wanted services, but was unable to receive it was also significantly related to whether the respondent would use TMH services (rho = .152, p = .002). Wanting services from a therapist fluent in ASL was significantly related to whether one would use TMH services (rho = .221, p < .0001).

Types of Problems, Benefit of Services, and Using TMH Services

There were significant relationships between all of the problems listed, how beneficial participants viewed the services, and whether the respondent would use the service to address those problems. See Table 3 for the Spearman's rho and significance values.

Predictors of Whether One Would Use TMH Services

A linear regression was used to predict whether one would use TMH services (dependent variable) from a number of predictors, including age, whether one had previously received therapy, and whether one was unable to receive therapy services in the past. The three variables together significantly predicted whether one would use TMH services, $F(3, 398) = 6.06$, $p < .0001$ with four percent overlap between the three predictors and the dependent variable. Only the variable of whether one was able to receive services significantly predicted whether one would use TMH services (p = .01).

Conflict of Interest

There are no conflicts of interest conducting the study or writing the manuscript. The author certifies her responsibility for conducting the study and for the analysis and interpretation of the data. The study is original research; the manuscript was not submitted elsewhere.

Discussion

Summary of Findings

Knowledge and Use TMH Services

Many respondents did not know about or have direct experiences with TMH services. Despite the lack of knowledge, the majority of respondents reported that TMH services could be beneficial to deaf individuals who need psychotherapy. Some respondents were less likely to report using the service themselves, but indicated in open comments that they did not feel the need for psychotherapy at the time they answered the questionnaire. One reason that participants did not disclose a need for mental health services may be because of the stigma attached to disclosure (Blaider et al.

2013). The literature suggests that because the deaf community is so small, concerns about stigma and confidentiality may inhibit them from seeking services. However, participants reported that all of the problems listed could potentially be addressed with TMH services, which indicates potential in using the technology to address a wide range of mental health issues.

When the group of variables was analyzed, only one variable, *whether one was unable to receive services*, predicted whether an individual would use TMH services. Given the difficulties many deaf individuals face when attempting to access services, this finding is not surprising and is supported by the literature. The findings suggest that there are several factors related to whether a respondent would choose to use TMH services. Respondents reported that knowing someone who used the services, having previous experience with psychotherapy, experiencing barriers in receiving services, and working with a therapist fluent in ASL significantly influenced their decision to use TMH services. Several research studies have reported the difficulty accessing services by deaf consumers (Behl and Kahn 2015; Blaiser et al. 2013; Cabral et al. 2013; Wilson and Schild 2014). One of the largest factors affecting accessibility for this population is communication barriers. Written correspondence between a hearing provider and patient is often ineffective, especially with those for whom ASL is the primary language and English is a secondary language. As a result, deaf individuals may be unable to clearly explain their symptoms, which can lead from a poor assessment by clinicians to an inaccurate diagnosis to ineffective treatment. In addition, non-signing clinicians who are unable to communicate with their clients may be unable to clearly educate their clients about mental health issues, diagnosis, treatment, and medications. This lack of communication can also undermine the therapist–client relationship by inhibiting the establishment of rapport and trust.

Strengths and Limitations of the Study

The sample of participants for this study was non-randomly selected. This imposes limitations to the generalizability of the findings. However, the large sample size is unique in that it is often difficult to find a large sample of deaf individuals because of geographical distance. The participants from this sample were selected from the Washington, DC area, which has a uniquely large concentration of educated deaf individuals. Participants were surveyed using a written questionnaire and assisted by individuals who were fluent in ASL. Internal consistency statistics indicated strong internal consistency (alpha = .92). In addition, research assistants offered participants visual illustrations and explanations about the use of the technology. This helped to reduce misunderstandings or miscommunications; this is especially important since many participants were unfamiliar with telemental health services.

Participant responses about the usefulness of TMH services reflected their opinions about whether the service could be useful. However, their responses may not translate into actual use of TMH services. The results of this study indicate that TMH services may be a viable alternative to face-to-face psychotherapy, especially in the absence of accessible and available services. The data from this study may support the initial development of TMH services for deaf individuals who use ASL as their primary language.

Implications for Practice and Research

The findings of this study help to inform future practice and research in several ways. The results suggest that deaf individuals have experienced barriers when accessing mental health services. The use of TMH services has been demonstrated to be effective and efficacious with individuals who experience mental health challenges. The findings suggest that deaf individuals are open to receiving these types of services, especially when they have been unsuccessful in obtaining services elsewhere.

Telemental health services may be particularly suited for deaf people because of the visual nature of ASL and the community's reliance on visual technology for communication (e.g., videophones, video remote interpretation, VRS). Telemental health services can address healthcare disparities that exist among minority populations, including members of the deaf community. It can provide services that are culturally and linguistically appropriate to this population, which can increase overall well-being, quality of life, and health. Telemental health services can act as a bridge between consumers of mental health care and their providers allowing accessible and equitable healthcare opportunities.

Policy-makers who are unfamiliar with the unique characteristics of deaf people as a community and culture may inadvertently perpetuate disparities by not recognizing the challenges that many deaf people face. Often there is a lack of financial compensation for mental health services by insurance companies, which further restricts the already scarce resources. Licensure limitations to the delivery of TMH services can also prevent those few clinicians who work with deaf people to expand their services. The lack of a critical mass number of deaf individuals in a given area, especially rural areas, make it difficult to change policy (Blaiser et al. 2013).

This study did not address other issues that may be of particular important when providing viable options for mental health treatment of deaf people. Future studies may include investigations of licensure, malpractice, and technology in the application of video technology for therapy. Telepsychiatry in unsupervised settings, that is, home-based

TMH services is an emerging field (Gibson et al. 2010; Johnson 2014; Pruitt et al. 2014). This type of TMH services may be particularly useful for the deaf community because service-provision is one of demography rather than geography. Deaf individuals are infused into every racial, ethnic, and age group. Because the community is spread across a national and international area, finding enough deaf people to support services by sheer numbers is unlikely. Instead, innovative and far-reaching programs for the community should be explored.

Appendix 1: Survey Instrument

What Do YOU Think About TeleMental Health (TMH) Services for *Deaf Individuals*?

Please answer the following questions. When you are finished, please give your questionnaire to the person who gave it to you. Thank you for sharing your opinions about this type of service.

Question	0 None At All	1	2	3	4	5 A lot, Very Much
Do you know about this type of service?	0	1	2	3	4	5
Do you have personal experience using TMH for mental health therapy?	0	1	2	3	4	5
Do you know someone who has used this service before?	0	1	2	3	4	5
How beneficial do you think this service would be to Deaf individuals who need mental health therapy?	0	1	2	3	4	5
Would you use this type of service yourself if you needed therapy? Why or why not (write comments)?	0	1	2	3	4	5
How often have you received any kind of mental health therapy?	0	1	2	3	4	5
How often did you try to receive any kind of mental health therapy, but were unable to do so?	0	1	2	3	4	5
Why didn't you receive services (write comments)?						

About YOU

How old are you?	[ ] 18 – 29 [ ] 30 – 49 [ ] 50 – 65 [ ] 65 or older
What is your gender?	[ ] Female [ ] Male
What is your race or ethnicity?	[ ] Latino [ ] African-American or Black [ ] Asian [ ] White [ ] Native American or Alaska Native [ ] Middle-Eastern [ ] Pacific Islander or Native Hawaiian [ ] Biracial/Multi-racial
How are you connected to Gallaudet?	[ ] Undergraduate student [ ] Graduate student [ ] Staff [ ] Faculty [ ] Other: (please specify)

**What Types of Problems Do You Think TMH Services
Could Help Deaf Individuals Solve?**

Type of Problem	0 None At All	1	2	3	4	5 A lo t Very Much
Problems with nervousness or anxiety	0	1	2	3	4	5
Problems with mood, depression, bipolar, sadness, hopelessness, extreme energy	0	1	2	3	4	5
Problems with psychosis, such as seeing things that aren't there or believing things that are not true (believing "I am really a movie star")	0	1	2	3	4	5
Thoughts of suicide	0	1	2	3	4	5
Thoughts of killing someone else	0	1	2	3	4	5
Problems with abusing drugs or alcohol	0	1	2	3	4	5

Receiving therapy while in jail or prison	**0**	**1**	**2**	**3**	**4**	**5**
Relationship or marital problems	**0**	**1**	**2**	**3**	**4**	**5**
Problems with eating disorders	**0**	**1**	**2**	**3**	**4**	**5**
Problems with conflicts or anger issues	**0**	**1**	**2**	**3**	**4**	**5**
Problems with finding a local therapist who uses ASL	**0**	**1**	**2**	**3**	**4**	**5**
Other problems TMH services could help with: (please specify)						

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