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MODELING PSYCHOLOGISTS' OPENNESS TO PERFORMING CLINICAL WORK WITH TELEPSYCHOLOGY

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TELEPSYCHOLOGY

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science
at Virginia Commonwealth University

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ABSTRACT

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By Bradford Stearns Pierce

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science at Virginia Commonwealth University

Virginia Commonwealth University, 2017

Major Direction: Paul B. Perrin
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This cross-sectional study examined whether the Theory of Reasoned Action (TRA) and Technology Acceptance Model (TAM) apply to psychologists' openness to using telepsychology, and to identify significant personal or environmental predictors of telepsychology adoption. A total of 1,791 licensed psychologists currently practicing psychotherapy in the United States were recruited to complete a previously developed 21-item pool. Personal and environmental characteristics were also collected. Path models representing the TRA, TAM, and a hybrid of both were tested. Also, a logistic regression was used to identify personal and environmental predictors of current use of telepsychology. Results indicated the TRA (RMSEA = .187) and TAM (RMSEA = .221) were a poor fit for modeling psychologists' openness to using telepsychology. Adequate fit was found with a third model (RMSEA = .094) in which the perceived attitudes of others concerning telepsychology were associated with the perceived ease of use (β = .25, p < .001) and usefulness (β = .30, p < .001) of telepsychology. Perceived ease of use (β = .30, p < .001) and usefulness (β = .32, p < .001) of telepsychology were both uniquely associated with current use of telepsychology. Also, receiving

telepsychology training, the existence of organizational policies concerning the use of telepsychology, treatment emphases, treatment setting, and practicing within a rural area were significant predictors of current use; however, individual characteristics such as age, race/ethnicity, and years of practice were not. Organizations interested in encouraging psychologists to adopt telepsychology should create policies supporting the use of telepsychology and provide adequate training to do so. Government and regulatory entities seeking to ensure treatment for individuals currently restricted from mental health services by time or geography should create clear and consistent laws permitting and governing the use of telepsychology. Other implications are discussed.

MODELING PSYCHOLOGISTS' OPENNESS TO PERFORMING CLINICAL WORK WITH
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In the U.S., many of the states with the lowest percentage of licensed psychologists also

have the highest number of people with mental illness (Hamp, Stamm, Christidis, & Nigrinis,

2014). To assist everyone with a mental disorder in South Carolina, for example, licensed

psychologists in the state would each need to carry a caseload of approximately 125 individuals.

Psychologists in Mississippi would have to serve nearly 143 individuals. In contrast, to reach

everyone in the District of Columbia in need of mental health services, psychologists would only

require a caseload of about 9.5 clients (Hamp et al., 2014).

Psychiatrists, psychologists, and social workers commonly establish their practice within

higher-population, affluent, urban areas and larger cities with one or more major universities

(Kazdin, & Blase, 2011). On the other hand, across the U.S., approximately 20% of the

population, or 60 million people, live within rural areas (Stamm, 2003; U.S. Census Bureau,

2015). Additionally, 36% of U.S. veterans reside in rural areas (U.S. Department of Veteran's

Affairs, 2015). Compared to veterans in urban areas, rural veterans diagnosed with posttraumatic

stress disorder (PTSD) score higher on the Clinician Administered PTSD Scale for dissociative

symptoms (Elhai, Baugher, Quevillon, Sauvageot, & Frueh, 2004), and are at an increased risk

for suicide (McCarthy et al., 2012). Even accessing mental health treatment within larger cities

and affluent, urban areas can be difficult for many (Collins, Westra, Dozois, & Burns, 2004).

Telepsychology

One relatively new technology with the potential to overcome many of these treatment

barriers is telepsychology, the use of technology to provide psychological services (American

Psychological Association, 2015). Telepsychology may be referred to as teletherapy, e-therapy,

cyber-psychology, teleanalysis, or web counseling. Telepsychology is commonly categorized

under the umbrella term telehealth, though the U.S. Department of Health and Human Services'

Office of Advancement of Telehealth defines telehealth to mean more broadly "the use of

electronic information and telecommunications technologies to support long-distance clinical

health care, patient and professional health-related education, public health and health

administration" (2015, para. 3). While telepsychology refers to delivering psychological services

using a broad spectrum of technologies (Chester, & Glass, 2006; Murphy, & Mitchell, 1998), the

current study will not focus on delivery systems such as the telephone, text chat, email, online

self-help packages, or virtual reality. Although each method facilitates communication, media

that permit more channels of interaction have long been shown to result in a richer experience

(Daft & Lengel, 1986) and a more meaningful bond between individuals (Sherman, Michikyan,

& Greenfeld, 2013). As a result, the current paper is concerned with the use of video

conferencing technology to provide psychological services.

      The first notable telepsychology research began in April of 1968 using remote controlled

cameras and 17-inch televisions located at both Logan International Airport Medical Station and

Massachusetts General Hospital three miles away (Dwyer, 1973). The system, primarily created

to assist medical personnel in quick diagnoses, was created after a plane crash a few years earlier

had revealed city traffic significantly delayed response during an emergency (Bird, 1972). Dwyer

(1973) notes in the beginning he was skeptical of the work he could accomplish without personal

contact with his patients. He discovered most of the patients helped via the system only required

about two sessions. He also noted some patients preferred it to face-to-face sessions. Based on

the success of the early system, telepsychology was used to connect practitioners with parole

officers located in East Boston, children and school counselors at a distant junior high, prisoners

at the Deer Island House of Correction, and the Bedford Veterans Administration Hospital 20

miles away (Dwyer, 1973). Since then, extensive research has been conducted on telepsychology, with the American Psychological Association (APA, 2015) even releasing telepsychology standards of practice in 2015.

APA standards. The APA (2015) maintains a set of standards unique to telepsychology practice. These encompass issues of competency, standards of care, informed consent, confidentiality, security, disposal of transmitted data and information, testing and assessment, and issues of interjurisdictional practice. Psychologists must develop competency with interventions empirically demonstrated as effective when used online, and with the computer software, hardware, and network technology used to deliver therapy (APA, 2015). They also must assess a client's ability to understand and accept any risks that may result from using telepsychology. Psychologists must form contingency plans to ensure the client's safety during treatment by identifying emergency resources and support persons within the client's area. Finally, psychologists should assess whether in-person therapy would be more appropriate for clients with frequently reoccurring crises.

Advantages

Using telepsychology offers therapists and clients a number of advantages over traditional, in-person modes of therapy. For clients coping with limited time or mobility issues impeding their ability to attend face-to-face sessions, telepsychology has the potential to mitigate these issues by allowing a client and therapist to communicate effectively where they already are (Martin, 2013). It also has the potential to facilitate delivery of mental health services to single parents or caregivers unable or unwilling to transfer their duties temporarily to another, and can reach individuals too sick, depressed, or psychologically inhibited from leaving their home (Martin, 2013).

For psychologists living within and practicing face-to-face therapy in rural communities, the ethical dilemma of dual-relationships can be a common challenge. Rural psychologists often face problems of interaction between clients, contact between clients and the psychologist's family members, or intersecting business interests (Schank, & Skovholt, 1997). As practitioners adopt telepsychology to reach geographically distant populations, it decreases the likelihood they will interact with current and future clients outside of therapy, dramatically reducing the chances of dual-relationships forming (McCord et al., 2011). By increasing the potential footprint of their practice, psychologists report that telepsychology has the potential help them increase their client base and keep their schedules filled (Centore & Milacci, 2008).

Individuals in need of mental health services in rural areas face a number or challenges beyond the geographical isolation that makes it difficult or impractical to travel for therapy. Compared with urban communities, rural areas report lower median household income and higher rates of poverty (US Census Bureau, 2016a). Additionally, rural areas within states such as Texas, Kansas, Idaho, and North Carolina have a higher percentage of ethnically diverse populations (US Census Bureau, 2016b). Unfortunately, these factors make multilingual and culturally appropriate services more difficult to obtain for individuals in rural areas (Yellowlees, Marks, Hilty, & Shore, 2008). Patients and clients using telepsychology can gain access to practitioners with experience with a particular mental disorder, training with multicultural concerns, and multilingual therapists (Hailey, Roine, & Ohinmaa, 2008; Yellowlees, Marks, Hilty, & Shore, 2008).

After the conclusion of a 3-month pilot study using videoconferencing to perform child assessments, 93% of parents rated their satisfaction as a five on a 5-point Likert scale after using the videoconferencing assessment system (Elford et al., 2001). A cost analysis estimated travel

costs for 30 patients would equal $12,849 ($428 per patient) compared to the total cost of the videoconferencing assessment system for the 3-month pilot at $12,575 ($419 per patient; Elford et al., 2001). Their study found that 97% of parents preferred the videoconferencing system rather than travelling to a location for psychological assessments (Elford et al., 2001).

Another study conducted by Crow et al. (2009) comparing the costs of treatment for 128 women diagnosed with bulimia nervosa found face-to-face CBT interventions cost $9324.68 per recovered client while CBT utilizing telepsychology cost 7300.40 per recovered client. A meta-analysis of studies examining telepsychology in correctional facilities found telepsychology saved correctional institutions anywhere between $12,000 to $1 million while increasing access to mental health services to inmates (Deslich, Thistlethwaite, & Coustasse, 2013).

A study by Godleski, Darkins, and Peters (2012), evaluated clinical outcomes of 98,609 mental health patients receiving telepsychology services from the US Veteran's Administration between 2006 and 2010. Psychiatric admissions for telepsychology patients decreased by 24.4%, while days of hospitalization decreased by 26.6%. Furthermore, the observed decrease in both measures occurred regardless of patients' gender (Godleski, Darkins, & Peters, 2012).

Disadvantages

Telepsychology possesses a number of disadvantages that may dissuade psychologists from adopting it within their practice. For example, psychologists are trained to recognize and evaluate non-verbal information gathered during therapy such as body language, eye contact, the scent of alcohol, and cues such as bodily odors and unkempt appearance that may indicate lack of hygiene (Martin, 2013). Current telepsychology technologies could make gathering these data difficult. Additionally, hardware and software technologies, along with camera placement techniques, designed to facilitate eye contact between video-conferencing participants can be

impractical or expensive in many common settings (Chen, 2002). These kinds of issues have led to skepticism of its effectiveness since it was first employed in 1967 (Dwyer, 1973).

Perle, Burt, and Higgins, (2014) examined psychologists' (n=782) concerns about using telepsychology, as well as topics in telepsychology they felt they lacked training in. Over 64% of their sample of psychologists included licensed practitioners, while doctoral-students made up another 23.2%. Although nearly 80% of the sample reported agreement that telepsychology treatments can be effective, less than 20% reported ever using it within their own practice (Perle, Burt, & Higgins, 2014). Only 25.9% reported they would be likely to refer someone for telepsychological services. Less than 4% would not endorse telepsychology of any kind, while 42% believed telepsychology was less effective than face-to-face therapy. Other concerns included ethical issues (30%), no telepsychology referral sources (26.6%), privacy issues (23.2%), legal concerns (23%), concerns over client safety/crisis (21.5%), lack of research (19.6%), and reimbursement concerns (5.4%; Perle, Burt, & Higgins, 2014). In their sample, 52.9% expressed an interest in telepsychology training, and of those interested, 90.9% indicated they wanted more information concerning ethical issues, 86.2% legal issues, 86.1% efficacy research, 79.1% comparisons between face-to-face and telepsychology, 71.6% safety/crisis information, 58.6% reimbursement procedures, 55.6% telepsychology costs, and 50.2% how to set up a telepsychology practice (Perle, Burt, & Higgins, 2014).

Laws and organizational guidelines. Telepsychology practitioners in the U.S. must comply with a complex set of state laws and federal requirements outlined within the Affordable Care Act, H.R. 4872 (2010) and the Health Insurance Portability and Accountability Act of 1996 (HIPAA). Furthermore, for psychologists specifically, there are a number of American Psychological Association (APA) requirements for telepsychology competency, ethical

considerations, and data security (American Psychological Association, 2015). This may be enough to discourage many practitioners from offering telepsychological services to clients.

A common barrier to telepsychology that psychologists within the U.S. face is the possibility of practicing across state lines (Kramer, Kinn, & Mishkind, 2015). Although the APA acts as a nationwide accrediting body for education and training for psychologists (American Psychological Association, 2016), individual states maintain control over enforcement and licensure requirements to protect members of the public. Laws concerning the practice of psychology focus on the location of the client and not that of the psychologist (Kramer, Kinn, & Mishkind, 2015). As a result, the psychologist must meet interjurisdictional practice requirements within the state in which the client is currently located (Association of State and Provincial Psychology Boards, 2016a; American Psychological Association, 2015). Some states may allow psychologists licensed out-of-state to practice under specific conditions for anywhere from 10 to 30 days within a calendar year (DeAngelis, 2012). California's Board of Behavioral Sciences (BBS) released a bulletin warning consumers that when they travel, if they contact their psychologist for assistance using the Internet, a phone, or any electronic method, the psychologist must first verify the state the client is within will permit them to provide therapy (California Board of Behavioral Sciences, 2016).

HIPAA compliance. Another issue facing psychologists interested in implementing telepsychology is using a network and video-conferencing platform that is HIPAA compliant. Although HIPAA's Security Rules protect an individual's electronic patient health information (ePHI), it does not apply to videoconferencing. However, the Privacy Rule does (U.S. Department of Health and Human Services, 2010). Among the HIPAA Privacy Rule's requirements are access and audit control, breach notification, person or entity authentication,

transmission security, workstation security, device and media controls, and a security management process (HIPAA). HIPPA does not certify the compliance of software, but companies willing to assume responsibility for collected data can claim HIPAA compliance.

Skype, one of the most popular and free video-conferencing software package, meets some of these requirements such as entity authentication and robust encryption by current standards to facilitate transmission security (APA, 2014). Where Skype falls short is audit control, meaning its inability to monitor accesses to ePHI. Skype also lacks breach notification to let administrators know when unauthorized users access ePHI (APA, 2014). As with HIPPA compliance, the robust requirements surrounding data encryption and security can be a daunting task (APA, 2015). Experts in computer security and cryptography have argued that it is not possible to develop tamper-proof computer systems, only tamper-evident ones (Schneier, 2011). Considering how little direct control psychologists maintain once they transmit data outside the walls of their practice, fears of data theft may be another source of bias against telepsychology.

Reimbursement for services. Psychologists using telepsychology expecting financial reimbursement from health insurance companies or publicly-funded healthcare programs must first verify for each client if, and under what conditions, the third-party will reimburse them for their services. Medicare will not cover telehealth interventions unless the client receives treatment within a doctor's office, hospital, authorized health care center, or nursing facility (Medicare, 2016). Blue Cross and Blue Shield, an association of healthcare insurance providers insuring over 106 million individuals (Blue Cross and Blue Shield, 2016a) will reimburse for telepsychology if the psychologist is part of specific online care providers network (Blue Cross and Blue Shield, 2015, 2016b).

A number of states have passed legislation requiring private insurance companies to cover policyholders seeking telepsychology treatment. Arizona's Telemedicine Reimbursement Parity Act (2013) requires private insurers to cover individuals receiving health services (including mental health) via video conferencing if they live in counties with populations under 900,000 or people who live more than 30 miles from the nearest city. The California Insurance Code (2011) prohibits private insurers from requiring individuals meet in-person with healthcare providers, or from dictating the type of setting they meet within. Meanwhile, a number of states including Florida, Idaho, Kansas, Nebraska, Nevada, Pennsylvania, West Virginia, and North Carolina do not have laws mandating private insurers cover telepsychology.

Efficacy of Telepsychology

A number of studies have demonstrated telepsychology is an effective delivery method for a wide variety of psychotherapeutic interventions. Bouchard et al. (2004) compared the effectiveness of videoconferencing to face-to-face sessions in administering cognitive behavioral therapy (CBT) when treating panic disorder with agoraphobia. There were no significant differences between the two groups across any of the following measures: Agoraphobic Cognition Questionnaire, Body Sensation Questionnaire, Mobility Inventory (alone and accompanied versions), Self-Efficacy to Control a Panic Attack Scale, State-Trait Anxiety Inventory, Beck Depression Inventory, and the Sheehan Disability Scale. Additionally, the authors reported that an excellent therapeutic alliance (via the self-report Working Alliance Inventory) developed even after the first videoconferencing session (Bouchard et al., 2004). A follow-up replication study of 12 sessions of CBT for participants diagnosed with panic disorder with agoraphobia yielded similar results (Allard et al., 2007). After 12 sessions, both delivery methods were effective. When comparing the quality of the therapeutic alliance between both

groups using both the Working Alliance Inventory and the California Psychotherapy Alliance Scale, the authors found the therapeutic alliance was excellent in both conditions.

Greene et al. (2010) compared the effectiveness of telepsychology with face-to-face group-based anger management therapy for combat veterans with PTSD. Measures included therapeutic alliance, satisfaction, treatment credibility, attendance, homework completion, and attrition. Most variables indicated no significant differences between the telepsychology and face-to-face groups. The exception was a significant difference between mean self-leader alliance scores in the telepsychology group were 4.2 ($SD = 0.8$) and the face-to-face group 4.5 ($SD = 0.4$), although this difference was a small effect size ($d = .23$). A follow-up study with rural combat veterans yielded similar results, with no differences between the in-person and telepsychology groups on measures of attendance, homework completion, dropout rate, and reduction of PTSD symptoms, but participants in the in-person group reported higher overall therapeutic alliance scores measured using the Group Therapy Alliance Scale (Morland et al., 2010).

Finally, one randomized controlled trial compared results of cognitive interventions for memory loss with Alzheimer's patients using telepsychology and face-to-face (Poon, Hui, Dai, Kwok, & Woo, 2005). Overall neuropsychological outcomes such as attention, memory, and language were not significantly different between groups, and the compliance rate for both groups was 95%. The face-to-face group did show significant improvement in spatial construction ($p < .001$) while the telepsychology group did not ($p = .116$; Poon, Hui, Dai, Kwok, & Woo, 2005). The authors suggest this is likely the result of difficulty with the physical guidance aspects of training in the telepsychology group.

Models to Explain the Adoption of Telepsychology

Theory of reasoned action. In their theory of reasoned action (TRA), social psychologists Fishbein and Ajzen (1977) provided a framework for understanding the relationship between an individual's attitudes toward a behavior, behavioral intentions, and behavior. TRA posits that behavioral intentions preceded behavior. It also states an individual's negative or positive attitudes about a behavior, as well as perceived social pressures, or subjective norms surrounding a behavior influence behavioral intentions (Fishbein & Ajzen, 1977; Figure 1).
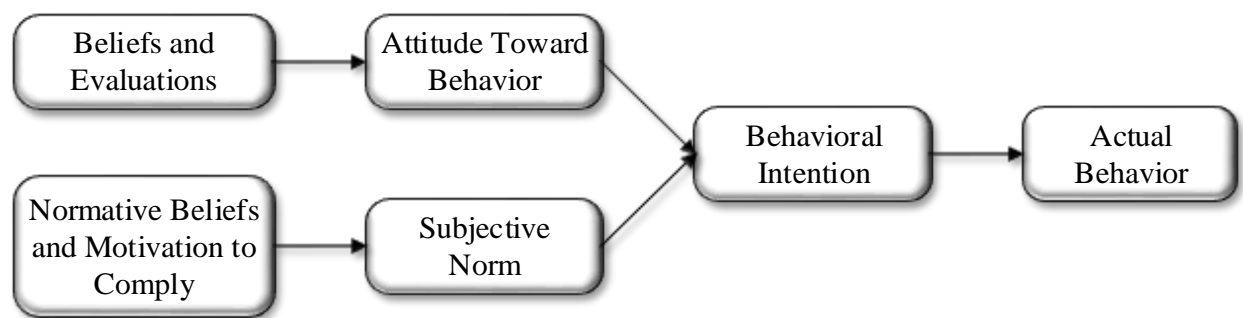
Figure 1. Theory of Reasoned Action (TRA)

Within TRA, an individual's beliefs that a behavior will result in one or more consequences, and their positive or negative evaluations about each consequence, influence their attitude towards the behavior. Also, a person's perceptions of what others believe about the action and the person's motivation to conform to others' expectations influence the person's subjective norms. Together, an individual's subjective norms and attitudes towards a behavior lead to their level of determination to perform the behavior (Fishbein, & Ajzen, 1977).

For example, a psychologist's belief that video-conferencing results in sterile social interactions could lead to attitudes towards telepsychology such as "the therapeutic alliance is probably weak" or "it is ineffective for meaningful work." Furthermore, the beliefs that the psychologist perceives important others have about telepsychology (e.g., "It is looked down upon by seasoned colleagues"), along with the desire to continue to receive referrals, could lead

them to think others expect the psychologist to avoid engaging in telepsychology. Taken together, the attitude that telepsychology is ineffective, and the belief that important others expect them to avoid telepsychology, could result in very low intention of using in telepsychology.

Technology Acceptance Model. Using the TRA as their foundation, Davis, Bagozzi, and Warshaw (1989) developed the Technology Acceptance Model (TAM) to explain and predict the determinants of an individual's willingness to adopt computer technologies. One of the fundamental purposes of the TAM is to offer a foundation for understanding the influence external factors have on an individual's beliefs, attitudes, and intentions. It is also intended to serve as a guide for identifying factors to address when a technology fails to achieve acceptance within a population.

According to the TAM (Figure 2), perceived usefulness and perceived ease of use are fundamental aspects that determine acceptance of computer technologies. Perceived usefulness is a user's expectation that a technology will increase (or decrease) his or her performance. Perceived ease of use is a user's expectation of the level of effort required and the user's sense of self-efficacy to utilize a particular technology (Davis et al., 1989).
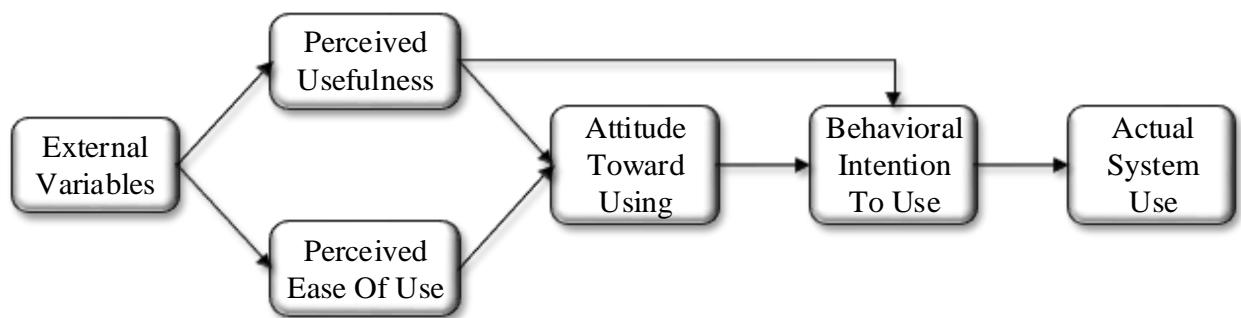
Figure 2. Technology Acceptance Model (TAM)

Both TRA and TAM agree that an individual's attitude toward using the technology influences behavioral intention. Where the two models part is that TAM asserts that the

individual's perception of the technology's usefulness also directly influences the behavioral intention. Additionally, while TAM does not attempt to measure subjective norms, Davis et al. (1989) suggest these are encompassed within attitudes towards the technology.

A number of studies demonstrate the robustness of TAM's validity as a model for explaining why users adopt or ignore a particular technology (King & He, 2006; Legris, Ingham, & Collerette, 2003; Yang & Yoo, 2004). Concerning practitioners of telepsychology, the TAM suggests that a psychologist's belief in the usefulness of telepsychology, along with their perceptions regarding its ease to implement, should account for practitioners' attitude towards it. Furthermore, the perceived usefulness and psychologists' attitude towards telepsychology would determine their intention to use it.

Research using the TAM to examine physicians' receptivity to telehealth found the TAM was reasonably effective at doing so (Hu, Chau, Sheng, & Tam, 1999). TAM was able to predict physicians' intent to engage in telehealth based on their perception of its usefulness and, to a lesser extent, their attitude toward it. Perceptions of how easy telehealth is to implement was not a significant predictor of a physician's perception of its usefulness nor of their attitude toward it. The authors hypothesized this may indicate physicians attitudes and perceptions of usefulness are based on an underlying pragmatic attitude toward intervention selection (Hu, Chau, Sheng, & Tam, 1999).

A study using the TAM to understand how Canadian mental health provider's perceptions and attitudes towards telepsychology play a role in their intent to use it when treating First Nations patients (Bouchard et al., 2004). The study's questionnaires were based on those developed by Davis (1993), one of the creators of the TAM, Venkatesh (2000), and Venkatesh and Davis (2000) but were adapted for First Nations communities and telepsychology. Results

from mental health providers (n = 205) at 32 First Nations reserves across Quebec resembled those of Hu et al. (1999). The perceived usefulness and psychologists' attitudes toward telepsychology, not their perception of its ease of use, was the main predictor of their intention to use it (Bouchard et al., 2004).

Personal and environmental influences. Although no research to date has looked at personal or environmental characteristics of psychologists as predictors of telepsychology adoption (or any health care provider group for that matter with telehealth), related research has investigated which individual and setting characteristics predict the adoption of new practice approaches, such as evidence-based practice (EBP). These factors include individual characteristics such as older age, female gender, White race/ethnicity, fewer years of experience (Aarons, Glisson, Hoagwood, Landsverk, & Cafri, 2010), treatment setting, treatment focus, and organizational culture (Aarons, 2004).

Results from a study of 322 clinical service workers representing 51 different mental health programs for children, adolescents, and their families indicate adoption of EBPs depends on organizational qualities and individual attributes (Aarons, 2004). Higher positive attitudes towards adopting EBPs were seen in intern-level practitioners rather than more senior practitioners, and those with higher levels of education. When required to adopt EBPs by the organization, providers working in day-treatment programs had more positive attitudes toward adoption EBPs than practitioners working in outpatient programs. Providers also reported more positive attitudes towards EBPs when working within organizations with lower levels of bureaucracy, wraparound programs, and programs with written practice policies (Aarons, 2004).

As mentioned earlier, Perle, Burt, and Higgins (2014) examined psychologists' self-reported attitudes towards telepsychology. Results revealed that scarcity of referral sources,

privacy issues, legal concerns, client safety, perceived lack of research, reimbursement concerns, and insufficient training resulted in hesitation for psychologists when considering telepsychology in their practice. Topics emphasized among those interested in further training were ethical and legal issues, efficacy data including research comparing telepsychology with traditional modalities, safety/crisis information, reimbursement procedures, system costs, and training in setting up a telepsychology practice (Perle, Burt, & Higgins, 2014).

Statement of Purpose

Telepsychology has the potential to help psychologists reach populations that find it difficult to access mental health services. While the effectiveness of telepsychology has been demonstrated for a variety disorders and treatment settings, a majority of psychologists do not incorporate it into their own practice. The TAM and TRA serve as models to account for factors leading to use of a new technology. Past studies have used the TAM and TRA models to examine physicians' willingness to use telehealth, and mental health providers using telepsychology specifically to treat Canadian First Nation populations, but no studies have used the TAM or TRA to understand the receptivity of U.S. psychologists to using telepsychology in their practice.

The current study has two purposes: to examine whether the TRA and TAM apply to psychologists' intention to use telepsychology, and to identify significant personal or environmental predictors of that intention. From a TRA perspective, it is hypothesized that:

(1) Attitudes toward the use of telepsychology will predict behavioral intention to use telepsychology.

(2) Subjective norms regarding the use of telepsychology will predict intention to use telepsychology.

(3) Intention to use telepsychology will predict the actual use of telepsychology.

(4) Intention to use telepsychology will mediate the predictive effects of attitudes toward the use of telepsychology and subjective norms regarding the use of telepsychology on the actual use of telepsychology.

From a TAM perspective, it is hypothesized that:

(5) Perceived usefulness of telepsychology will predict attitudes toward using telepsychology.

(6) Perceived ease of use of telepsychology will predict attitudes toward using telepsychology.

(7) Attitudes toward using telepsychology will predict behavioral intention to use telepsychology.

(8) Behavioral intention to use telepsychology will predict actual use of telepsychology

(9) Attitudes toward using telepsychology will partially mediate the relationship between perceived usefulness of telepsychology and behavioral intention to use telepsychology.

From a personal or environmental perspective and based on previous literature examining the adoption of new practice approaches (Aarons, 2004; Aarons, Glisson, Hoagwood, Landsverk, & Cafri, 2010; Perle, Burt, & Higgins, 2014), it is hypothesized (10) that the following external variables (outside of the TRA or TAM) will predict greater intention to use telepsychology: older age, female gender, White race/ethnicity, fewer years of experience, a more highly structured treatment setting, treatment focus, rural location of practice, the existence of organizational policies concerning telepsychology, and training in the use of telepsychology.

Method

Participants

Participants were recruited from online databases from a variety of professional organizations, such as the American Psychological Association, and lists of psychotherapists available to the public on the Internet (e.g., Psychology Today, university counseling center websites, metal health center websites). Participants were eligible to participate if they (a) were currently practicing psychotherapy, (b) were licensed psychologists, (c) had a doctoral degree, and (d) were over the age of 18. Data collection began on July 6th, 2017 and ended on July 26th, 2017. A total of 1,799 participants completed the survey. Participants' responses were reviewed for inconsistent response patterns. Of those who completed the survey, two participants' data were discarded because they provided contradictory answers to positively and negatively worded items by selecting all 1s throughout a significant portion of the survey. Two participants responded with impossible answers to their number of years in practice when compared with their reported age. Another four participants provided nonsensical answers to the survey's final attention check question. The final sample therefore included data from 1,791 participants. Table 1 lists participant demographics. Sample demographics are in line with a 2015 APA report on provider demographics regarding age, gender, and race/ethnicity, though the current sample had a higher concentration of psychologists working within an individual/group practice (Stamm, Lin, Christidis, 2017). All 50 states were represented, as well as Washington D.C., with California (14.2%), New York (12.2%), Massachusetts (6.8%), and Pennsylvania (6.7%) being the most represented. Each treatment focus proposed within the survey was selected by a number of participants, with depression ($n=1,550$), anxiety ($n=1,542$), stress ($n=1,239$), relationship issues ($n=1,149$), self-esteem ($n=1,131$) and trauma/PTSD ($n=1,125$) having the highest frequency. Finally, all treatment approaches suggested within the survey were selected by

participants, with cognitive behavior (*n*=1,420), interpersonal (*n*=755), family systems (*n*=593),

and solution-focused therapy (*n*=523) being the most well-represented treatment approaches.

Table 1. *Summary of Participant Characteristics.*

Characteristics		
Age, *M*, *SD*	55.25	12.13
Years in Practice, *M*, *SD*	26.33	11.18
Gender, *N*, %		
Women	1,118	62.4
Men	664	37.1
Genderqueer	3	.2
Transman	3	.2
Intersex	2	.1
Gender Non-Conforming	1	.1
Race/Ethnicity, *N*, %		
White/European-American [non-Latino/non-Hispanic]	1,616	90.2
Latino/Hispanic	47	2.6
Asian/Asian-American [non-Latino/non-Hispanic]	40	2.2
Black/African-American [non-Latino/non-Hispanic]	35	2.0
Multiracial/Multiethnic	26	1.5
Other	24	1.3
Practice Location, *N*, %		
Urban	811	45.3
Suburban	794	44.3
Rural	186	10.4
Practice Setting, *N*, %		
Individual/Group Practice	1,244	69.5
Academic Medical Center	123	6.9
School/University	101	5.6
VA Medical Center	52	2.9
Correctional Facility	23	1.3
Residential Treatment	17	.9
Geriatric Facility	17	.9
Employee Assistance	3	.2
Religious Organization	2	.1
Career Center	0	0
Other	209	11.7
Number of psychologists in setting, *N*, %		
1	840	46.8
2-5	589	32.9
5-10	175	9.8

10-20	98	5.5
20-50	52	2.9
50+	37	2.1
Currently using telepsychology, *N, %*		
No	1,407	78.6
Yes	384	21.4

Measures

Demographics. Participants' were asked to provide demographic data concerning their age, gender, race/ethnicity, years of experience, practitioner status, information concerning their treatment setting (e.g., number of psychologists, community setting), treatment focus, theoretical approach, the existence of laws and organizational policies concerning telepsychology within their treatment setting, whether they currently use telepsychology in their practice, if not then why, and if so then why.

Openness to Telepsychology. Openness to telepsychology was measured using a 21-item pool originally developed by Chau and Hu (2002) to assess physicians' attitudes, subjective norms, perceived usefulness, perceived ease of use, and behavioral intention to use telemedicine. For the current study, the words "telemedicine technology" was changed to "telepsychology." Within the instructions, the questionnaire provided participants the following definition of telepsychology, "for the purpose of the current survey, 'telepsychology' refers to the use of video-conferencing technology to provide psychological services." These items are measured using a seven-point Likert-type scale with anchors from ''strongly agree'' to ''strongly disagree.'' The survey has shown good convergent, and divergent validity, and internal consistency with a sample of physicians measuring attitudes (α=.69), subjective norms (α=.75), perceived usefulness (α=.86), perceived ease of use (α=.77), and behavioral intention (α=.86) concerning telehealth (Chau & Hu, 2002). In the current sample, the subscales had the following

αs: attitudes (α=.78), subjective norms (α=.63), perceived usefulness (α=.89), perceived ease of use (α=.84), and behavioral intention (α=.74).

Procedure

Potential participants received an emailed invitation (see Appendix A) to participate. Participants who followed the HTML link within the email were presented with the instructions and questions in Appendix B.

Data Analysis

Path models were developed and analyzed using AMOS 24.0 (Arbuckle, 2016) to validate the hypothesized patterns of relations among manifest variables among attitudes toward telepsychology, subjective norms, intention to use telepsychology, perceived ease of use, perceived usefulness, and current use of telepsychology among currently practicing psychologists within the United States. All path model parameters were calculated using maximum likelihood estimation. Two models were tested initially based on Figures 3 and 4 to correspond with the Theory of Reasoned Action and the Technology Acceptance Model. Next, these models were combined, as reflected in Figure 5, to develop a more comprehensive model. Initially, a fully saturated model was run, and a successive pairing of paths with a standardized path coefficient less than .10 occurred in order to arrive at the most parsimonious model whereby all path coefficients were greater than .10 (a small-sized effect).

Goodness of fit criteria selection were based on their status as the most commonly used indices (Kenny, 2014). The goodness of fit index (GFI) and adjusted goodness of fit index (AGFI) are variations on chi-square and are widely known as absolute indices, Ratios of each model and a null-model in which all measured variables are uncorrelated is used to compare with the chi-square for the actual model to compute normed fit index (NFI), incremental fit index

(IFI), and Tucker-Lewis index (TLI). A cutoff for adequate fit for GFI, AGFI, NFI, IFI, and TLI of at least .90 is based on Byrne (1994), Hu and Bentler (1999). Akaike information criterion (AIC) and Bayesian information criterion (BIC) measures are used to evaluate difference of fit between models, with better fitting models exhibiting lower values (Kenny, 2014; Lin, Huang, & Weng, 2017). Other common indices include the and the root mean squared error of approximation (RMSEA) of .1 or less (Meyers, Gamst, & Guarino, 2017), chi-square to degrees of freedom ratio of less than 2.0; and a comparative fit index (CFI; Bentler, 1990) of more than .90 (Hu & Bentler, 1999).

A logistical regression was performed to examine current age, and years of experience, gender, race/ethnicity, structure within treatment setting, treatment focus, location of practice, the existence of organizational policies concerning telepsychology, and training in the use of telepsychology as predictors of current telepsychology use. These analyses were conducted using SPSS Version 24.0 (IBM Corp., 2016). Significance was established at an alpha level of .05, two-tailed.

<div align="center">

Results

</div>

Normality and Outlier Tests

Skewness and kurtosis coefficients indicated normality for age, years in practice, and scale measures of attitude toward using, subjective norms, perceived usefulness, perceived ease of use, and behavioral intention. A visual inspection of distribution curves for participants' age and years in practice revealed higher frequencies every five years (i.e., 15, 20, 25, 30) indicating many participants rounded their answers. Mahalanobis D-squared and Mardia's coefficient were calculated to test for multivariate normality. Mahalanobis distance revealed three outliers in path model 1, nine outliers in model 2, and four outliers in model 8; all of which were retained

because the deviations from multivariate normality were only slightly beyond the critical cutoffs.

Additionally, Mardia's coefficient revealed only model 2 had a score just above the conventional

cutoff of 1.96. Despite these caveats, Meyers, Gamst, and Guarino (2017) argue that complex

multivariate analyses such as path models are robust with regard to distributions deviating even

substantially from normality, and that this is especially true when sample sizes are large, as in the

current study. As a result, if good fit indices emerge for the path models tested, these departures

from normality cannot be considered to have interfered substantially with the path models.

Additionally, eliminating these outliers would artificially improve the overall fit of the tested

model, whereas retaining them provides a more conservative estimate of fit.

Correlation Matrix

Table 2 shows the bivariate relationships among variables.

Table 2. *Correlation Matrix*

Variables	1	2	3	4	5	6	7
1. Attitude Toward Using	-						
2. Subjective Norms	.317**	-					
3. Perceived Usefulness	.758**	.300**	-				
4. Perceived Ease of Use	.513**	.248**	.454**	-			
5. Behavioral Intention to Use	.691**	.270**	.663**	.505**	-		
6. Current Use	.439**	.249**	.452**	.443**	.412**	-	
7. Years in Practice	-.031	.018	-.083**	-.109**	-.079**	-.001	-
8. Age	-.026	.008	-.098**	-.104**	-.050*	-.011	.835**

Note: * = $p < .05$; ** $p < .01$.

Model 1: TRA

The first path model (Figure 3), representing the Theory of Reasoned Action, explained

16.9% of the variance in current use of telepsychology.
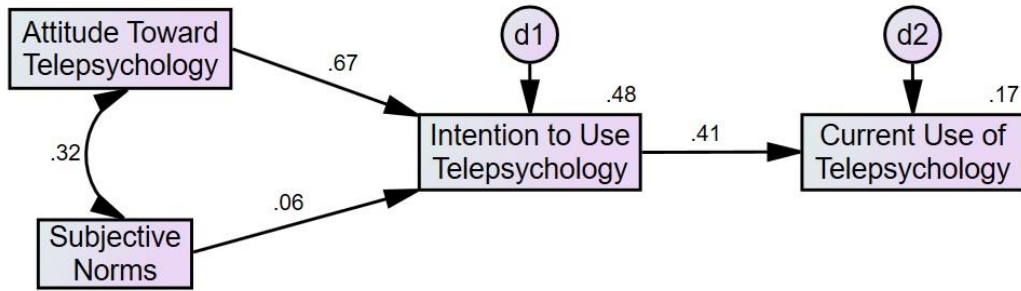
Figure 3. Path Model 1: Theory of Reasoned Action (TRA)

Within this model, attitude toward using (β = .67, p < .001) and subjective norms concerning telepsychology (β = .06, p = .002) were uniquely associated with behavioral intention to use telepsychology. Behavioral intention to use telepsychology (β = .41, p < .001) was uniquely associated with current use of telepsychology. There were indirect (mediational) effects of behavioral intention to use telepsychology on the relationships between attitude towards using and current use of telepsychology (β = .28, p < .001), as well as between subjective norms and current use of telepsychology (β = .02, p = .007). Some fit indices for this model generally suggested adequate or good fit (Table 3), although the AGFI, TLI, and RMSEA suggested a less than adequate to poor fit (Byrne, 1994; Hu & Bentler, 1999; Tabachnick & Fidell, 2001).

Table 3. *Fit indices of path models 1-8*

Fit Index	M1	M2	M4	M5	M6	M7	M8
CMIN/DF	63.31	88.55	1.30	3.42	10.03	11.37	16.97
GFI	.97	.94	1.00	1.00	.99	.99	1.00
AGFI	.84	.77	1.00	.99	.96	.95	.95
NFI	.93	.91	1.00	1.00	.99	.99	.99
RFI	.79	.79	1.00	.99	.97	.96	.92
IFI	.93	.92	1.00	1.00	.99	.99	.99
TLI	.79	.79	1.00	.99	.97	.96	.92
CFI	.93	.92	1.00	1.00	.99	.99	.99
RMSEA	.19	.22	.01	.04	.07	.08	.09
AIC	142.63	376.18	41.30	44.84	66.10	79.47	34.97
BIC	186.55	426.58	151.11	149.16	164.93	172.81	84.39

Note. CMIN/DF = chi-squared to degrees of freedom ratio; GFI = Goodness of Fit Index; AGFI = Adjusted Goodness of Fit Index; NFI = Normed Fit Index; RFI = Relative Fit Index; IFI = Incremental Fit Index; TLI = Tucker-Lewis Index; CFI = Comparative Fit Index; RMSEA = Root Mean Squared Error of Approximation; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion.

Model 2: TAM

The second path model (Figure 4), representing the Technology Acceptance Model, explained 16.9% of the variance in current use of telepsychology.
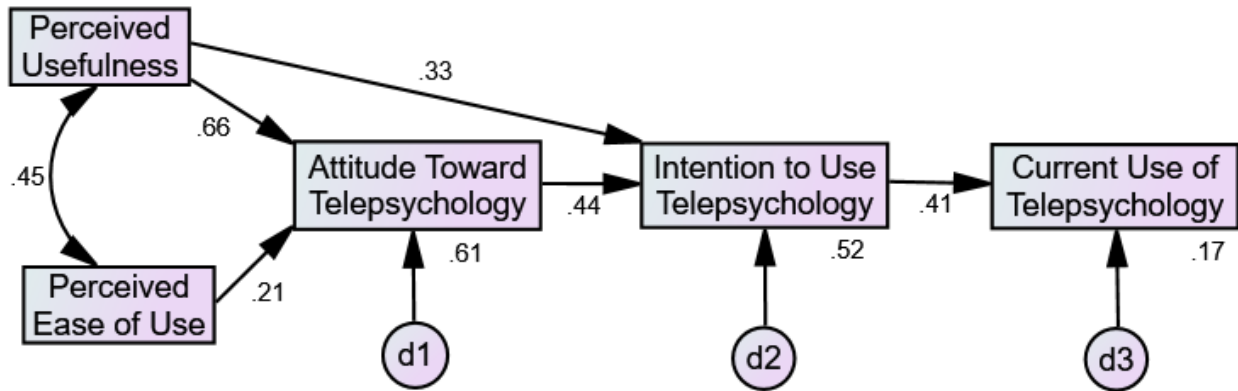
Figure 4. Path Model 2: Technology Acceptance Model (TAM)

Within this model, perceived usefulness of telepsychology was uniquely associated with attitudes toward using ($\beta = .66$, $p < .001$) and behavioral intention to use telepsychology ($\beta = .33$, $p < .001$). Attitudes toward using telepsychology was also uniquely associated with the perceived ease of use ($\beta = .21$, $p < .001$) and behavioral intention to use telepsychology ($\beta = .44$, $p < .001$). Behavioral intention to use telepsychology was uniquely associated with current use of telepsychology ($\beta = .41$, $p < .001$). Attitude toward using telepsychology also had a significant indirect effect on the relationship between perceived usefulness and behavioral intention to use telepsychology ($\beta = .29$, $p < .001$). Some fit indices for this model generally suggested adequate

or good fit (Table 3), although the AGFI, TLI, and RMSEA suggested a less than adequate to poor fit (Byrne, 1994; Hu & Bentler, 1999; Tabachnick & Fidell, 2001).

Model 3: Combined Model

The third, combined path model (Figure 5), which was the measurement model with all potential paths being specified, explained 28.9% of the variance in current use of telepsychology.
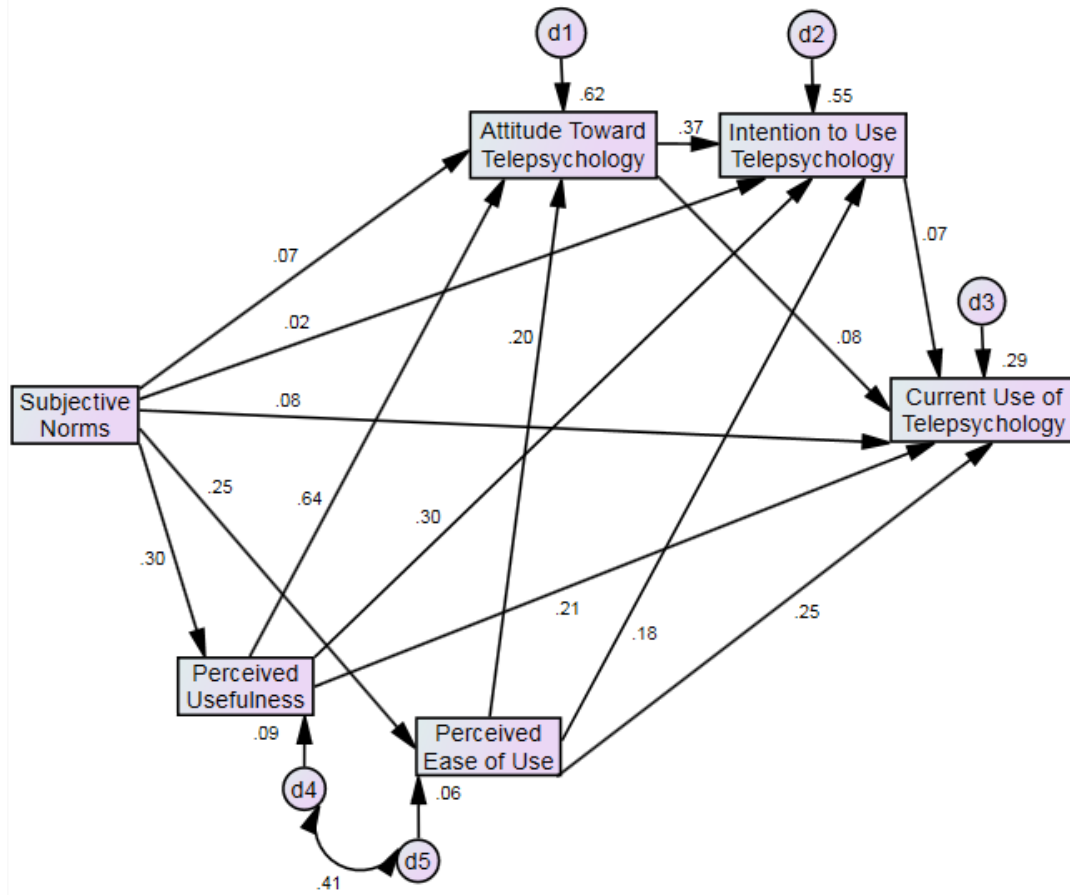
Figure 5. Path Model 3: Fully Saturated Model

Within this model, perceived ease of use ($\beta = .25$, $p < .001$), perceived usefulness ($\beta = .21$, $p < .001$), subjective norms ($\beta = .08$, $p < .001$), behavioral intention to use ($\beta = .07$, $p = .018$), and attitude towards using telepsychology ($\beta = .08$, $p = .019$) were uniquely associated with current use of telepsychology. Attitude toward using ($\beta = .37$, $p < .001$), perceived usefulness ($\beta = .30$, $p < .001$), and perceived ease of use of telepsychology ($\beta = .18$, $p < .001$)

were uniquely associated with behavioral intention to use telepsychology, while subjective norms ($\beta = .02$, $p = .254$) was not. Perceived usefulness ($\beta = .65$, $p < .001$), subjective norms ($\beta = .08$, $p < .001$), and perceived ease of use of telepsychology ($\beta = .20$, $p < .001$) were uniquely associated with attitudes towards using telepsychology. Subjective norms was uniquely associated with perceived usefulness ($\beta = .30$, $p < .001$) and perceived ease of use of telepsychology ($\beta = .25$, $p < .001$). Measures of fit were invalid because this model was saturated.

Models 4-8

For path model 4, following the trimming procedure outlined by Meyers, Gamst, & Guarino (2017), the predictor from model 3 that would least significantly decrease R^2 was trimmed, which was the path from subjective norms to behavioral intention to use telepsychology ($\beta = .02$, $p = .254$). This resulted in an improvement in model fit (Table 3). For path model 5, the same procedure was followed, and the least significant predictor from model 4 was trimmed, which was the path from attitude toward using to current use of telepsychology ($\beta = .08$, $p = .019$). For path model 6, the least significant predictor from model 5 was trimmed, which was from subjective norms to attitude toward using telepsychology ($\beta = .08$, $p < .001$). This was repeated for path model 7 where the least significant predictor from model 6 was trimmed, which was from subjective norms to current use of telepsychology ($\beta = .08$, $p < .001$). Finally, the procedure was repeated for path model 8. The path from behavioral intention to use and current use of telepsychology ($\beta = .09$, $p < .001$) was trimmed (Figure 5).
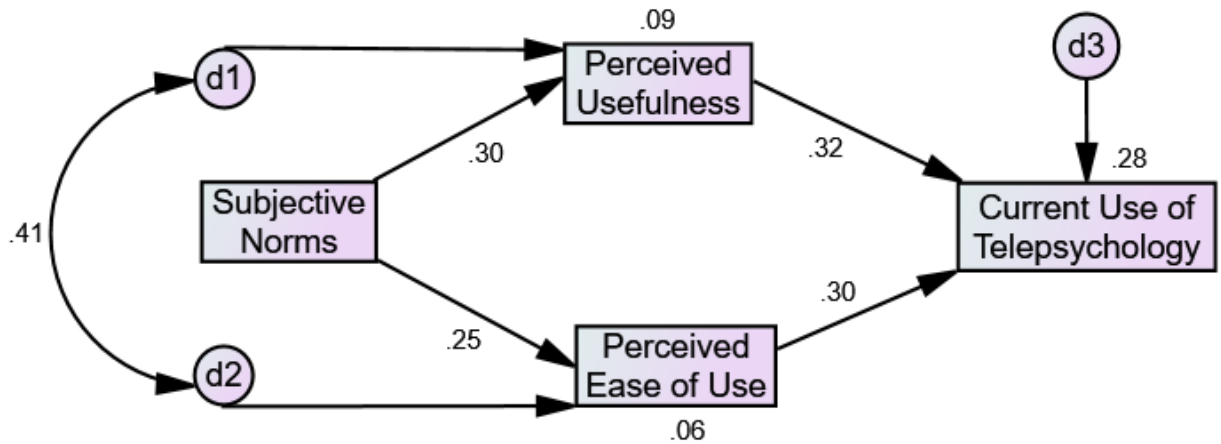
Figure 6. Path Model 8: Fully Trimmed Model

This time, all paths had at least a small effect size ($\beta \geq .10$), were statistically significant, and the model fit indices were in the excellent to adequate range (Table 3). The final model explained 27.5% of the variance in current use of telepsychology. Within this model, subjective norms concerning telepsychology was uniquely associate with perceived ease of use ($\beta = .25$, $p < .001$) and with perceived usefulness of telepsychology ($\beta = .30$, $p < .001$). Perceived ease of use ($\beta = .30$, $p < .001$) and perceived usefulness of telepsychology ($\beta = .32$, $p < .001$) were uniquely associated with current use of telepsychology. There was a significant indirect effect (multiple mediation) of subjective norms on current use of telepsychology via perceived usefulness and ease of use of telepsychology ($\beta = .17$, $p < .001$).

Logistic Regression 1

A standard binary logistic regression was used to model the binary variable of current use of telepsychology (with not currently using as the reference category) using binary predictor variables of gender (woman vs. other), race/ethnicity (White/European-American vs. minority), rural location or not, the existence of organizational policies concerning telepsychology, whether participants have received training in the use of telepsychology, and the quantitative predictor variable of age. Results of the logistic analysis indicated that the model provided a statistically

significant prediction of current use of telepsychology, chi-square (6) = 383.813, $p < .001$. The

Nagelkerke pseudo R^2 indicated the model accounted for approximately 29.8% of the total

variance.

When controlling for the other predictors, the likelihood of participants using

telepsychology was approximately 8.74 times higher for psychologists practicing in

organizations where policies concerning telepsychology exist ($p < .001$; b = 2.167; .95% CI =

6.58, 11.60) and 2.25 times higher for psychologists who have received training in

telepsychology ($p < .001$; b = .82; .95% CI = 1.73, 2.94). The likelihood was .46 times lower for

psychologists practicing in rural areas ($p = .002$; b = -.77; .95% CI = .29, .75). No other

predictors exerted a unique effect on current use of telepsychology (Table 4).

Table 4. *Variables in Logistic Regression 1*

Variable	B	S.E.	Wald	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Age	.001	.006	.038	.845	1.001	.990	1.012
Identifies as woman	-.075	.137	.298	.585	.928	.709	1.214
Identifies as white	.004	.222	.000	.987	1.004	.650	1.550
Telepsychology policies exist	2.167	.145	224.808	.000	8.736	6.580	11.597
Received telepsychology training	.810	.136	35.348	.000	2.248	1.721	2.937
Rural location	-.773	.246	9.852	.002	.462	.285	.748
Constant	-2.922	.398	54.035	.000	.054		

Classification success for the cases based on a classification cutoff value of .500 for

predicting membership in the currently using telepsychology group was no better than chance,

although there was an overall prediction success rate of 78.2%. The true-positive rate indexing

the sensitivity of the model was .523, and the false-positive rate (1 – specificity) was .148 (i.e.,

the true-negative rate indexing the specificity of the model was .852).

In an effort to determine if the performance of the model could be improved by using an alternative decision threshold, the predicted probabilities of membership in the currently using telepsychology group were subjected to a Receiver Operating Characteristic (ROC) analysis. The ROC curve is presented in Figure 6, and the area under the curve (AUC) was .802 ($SE = .012$); both visual inspection and the AUC value suggest that the fit of the logistic regression model is in the very good range (Meyers, Gamst, & Guarino, 2017).

Figure 7. ROC Curve for Logistic Regression 1
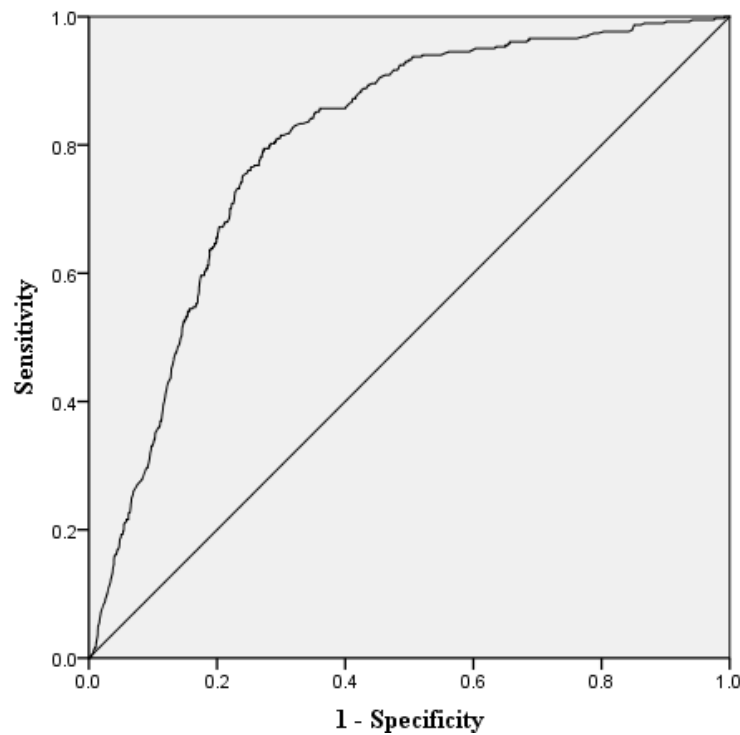
Relevant coordinates of the ROC curve corresponding to whole number predictions of group membership are shown in Table 5.

Table 5. *Coordinates of ROC Curve 1*

Threshold	Sensitivity	1 - Specificity
.3144854	.766	.253
.3146037	.763	.252
.3147219	.760	.252

.3148874	.760	.252
.3151240	.760	.249
.3153136	.755	.246
.3154320	.755	.244
.3155977	.753	.241
.3158346	.750	.240
.3160244	.742	.239
.3436628	.531	.151
.3445291	.529	.151
.3450246	.526	.150
.3452725	.526	.149
.3457687	.526	.149
.3466376	.523	.149
.4253485	.523	.148
.5036997	.521	.147
.5041656	.518	.147
.5046315	.516	.146
.5048511	.505	.145

The original classifications under a normal probability of .500 corresponded to the actual decision criteria of .425348. Inspection of Table 5 suggests that by moving to a revised classification threshold of .315313, the sensitivity of the model would increase to .755, while the false-positive rate (1-specificity) would only increase to .246. Adjusting the decision threshold to .315313 resulted in an overall prediction success rate of 75.4%, correct prediction rates of 75.4% for psychologists who do not currently use telepsychology, and 75.5% for those who do.

Logistic Regression 2

A second binary logistic regression was used to model the binary variable of current use of telepsychology (with not currently using as the reference category) using binary predictor variables indicating the setting participants practice within. Settings with 15 or less participants were removed from the analysis which resulted in excluding career centers, employee assistance programs, and religious organizations. Results of the logistic analysis indicated that the model

provided a statistically significant prediction of current use of telepsychology, chi-square (7) = 63.015, $p < .001$. The Nagelkerke pseudo R^2 indicated the model accounted for approximately 5.3% of the total variance.

When controlling for the other predictors, the likelihood of participants using telepsychology was approximately 3.37 times higher for psychologists practicing in VA centers ($p = .001$; b = 1.214; .95% CI = 1.607, 7.054), and 2.86 times higher for psychologists practicing in individual or group practice ($p < .001$; b = .1.052; .95% CI = 1.82, 4.50). No other predictors exerted a unique effect on current use of telepsychology (Table 6).

Table 6. *Variables in Logistic Regression 2*

	B	S.E.	Wald	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Correctional Facility	-.974	1.046	.867	.352	.377	.049	2.933
Geriatric Facility	-.656	1.054	.387	.534	.519	.066	4.097
Academic Medical Center	.143	.353	.163	.686	1.153	.577	2.304
VA	1.214	.377	10.348	.001	3.367	1.607	7.054
Individual/Group Practice	1.052	.230	20.916	.000	2.864	1.824	4.496
Residential Treatment Facility	.576	.673	.732	.392	1.780	.475	6.660
School/University	-.481	.450	1.142	.285	.618	.256	1.493
Constant	-2.117	.221	91.981	.000	.120		

Classification success for the cases based on a classification cutoff value of .500 for predicting membership in the currently using telepsychology group resulted in an overall prediction success rate of 78.6%. The logistic regression model was subjected to a ROC analysis. The ROC curve is presented in Figure 7, and the area AUC was .598 (*SE* = .015); both visual inspection and the AUC value suggest that the logistic regression model, though statistically significant, did not discriminate well between groups.

Figure 8. ROC Curve for Logistic Regression 2
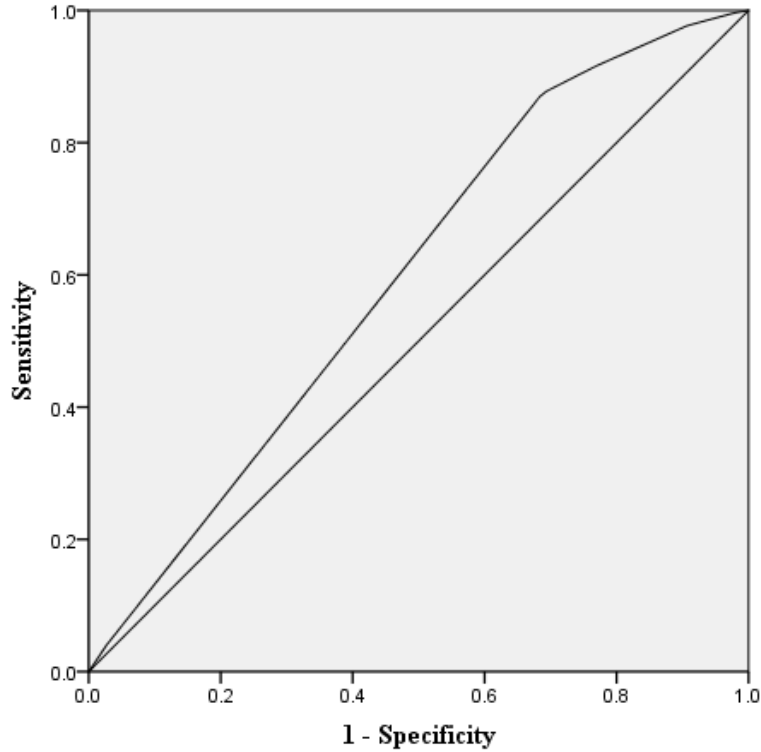
Coordinates of the ROC curve corresponding to whole number predictions of group

membership are shown in Table 7.

Table 7. Coordinates of ROC Curve 2

Threshold	Sensitivity	1 - Specificity
.0000000	1.000	1.000
.0511509	.997	.984
.0640652	.995	.973
.0883918	.977	.906
.1147139	.917	.770
.1492109	.878	.694
.2164507	.870	.684
.2724462	.039	.026
1.0000000	.000	.000

The original classifications under a normal probability of .500 corresponded to the actual

decision criteria of zero. Inspection of Table 5 suggests that by moving to a revised classification

threshold of .216451, the sensitivity of the model would decrease to .87, while the false-positive

rate (1-specificity) would only decrease to .684. The next lower threshold of .272446 would

result in a steep decrease in sensitivity to .039, while the false-positive rate would decrease to

.026. Adjusting the decision threshold to .216451 resulted in an overall prediction success rate of

43.5%, correct prediction rates of 31.6% for psychologists who do not currently use

telepsychology, and 87% for those who do.

Logistic Regression 3

A third binary logistic regression was used to model the binary variable of current use of

telepsychology (with not currently using as the reference category) using binary predictor

variables indicating focus of treatment. Results of the logistic analysis indicated that the model

provided a statistically significant prediction of current use of telepsychology, chi-square (54) =

158.172, $p < .001$. The Nagelkerke pseudo R^2 indicated the model accounted for approximately

13.1% of the total variance.

When controlling for the other predictors, the likelihood of participants using

telepsychology was approximately 1.86 times higher for psychologists focusing on sports

performance ($p = .020$; b = .623; .95% CI = 1.103, 3.153), 1.83 times higher for life coaching (p

= .002; b = .605; .95% CI = 1.25, 2.69), 1.70 times higher for treating narcissistic personality (p

= .008; b = .531; .95% CI = 1.15, 2.52), 1.60 times higher for treating addiction ($p = .004$; b =

.469; .95% CI = 1.16, 2.20), 1.47 times higher for marital and pre-marital counseling ($p = .011$; b

= .385; .95% CI = 1.09, 1.98), 1.42 times higher for focusing on parenting ($p = .040$; b = .350;

.95% CI = 1.12, 1.99), and 1.42 times higher for treating eating disorders ($p = .049$; b = .348;

.95% CI = 1.00, 2.00). The likelihood was .69 times lower for psychologists providing testing

and evaluation ($p = .024$; b = -.376; .95% CI = .50, .95), .67 times lower when treating grief ($p =

.012; b = -.404; .95% CI = .49, .92), .64 times lower with treating bipolar disorder (p = .006; b =

-.448; .95% CI = .46, .88), .64 times lower when focused on treatment compliance/medication

management (p = .028; b = -.445; .95% CI = .42, .95), .60 times lower when treating obesity (p =

.022; b = -.513; .95% CI = .39, .93), .50 times lower when treating antisocial personality (p =

.024; b = -.688; .95% CI = .28, .91), and .47 times lower for psychologists focused on racial

identity (p = .009; b = -.761; .95% CI = .26, .83). No other predictors exerted a unique effect on

current use of telepsychology (Table 8).

Table 8. *Variables in Logistic Regression 3*

Treatment Focus	B	S.E.	Wald	Sig.	Exp(B)	95% C.I.for EXP(B)	
						Lower	Upper
ADHD	-.200	.178	1.261	.261	.819	.578	1.160
Addiction	.469	.163	8.293	.004	1.599	1.162	2.201
Adoption	.173	.278	.389	.533	1.189	.690	2.049
Anger Management	-.093	.160	.334	.564	.912	.666	1.248
Antisocial Personality	-.688	.304	5.130	.024	.503	.277	.912
Anxiety	.291	.235	1.542	.214	1.338	.845	2.119
Asperger's Syndrome	.148	.220	.451	.502	1.159	.753	1.784
Autism	-.326	.282	1.332	.248	.722	.415	1.255
Behavioral Issues	-.254	.162	2.450	.118	.775	.564	1.066
Bipolar Disorder	-.448	.164	7.455	.006	.639	.463	.881
Borderline Personality	.106	.190	.313	.576	1.112	.766	1.615
Career Counseling	.113	.241	.220	.639	1.120	.698	1.797
Child or Adolescent	-.098	.176	.310	.578	.907	.642	1.280
Chronic Illness/Pain	.204	.149	1.884	.170	1.226	.916	1.641
Depression	-.085	.241	.125	.723	.918	.573	1.472
Developmental Disorders	-.085	.259	.109	.742	.918	.553	1.525
Eating Disorders	.348	.176	3.889	.049	1.416	1.002	2.000
Family Conflict	-.013	.158	.007	.935	.987	.724	1.346
Grief	-.404	.161	6.307	.012	.668	.487	.915
Hoarding	.193	.266	.524	.469	1.213	.719	2.045
Intellectual Disability	-.141	.288	.238	.626	.869	.494	1.529
Intimate Partner Violence	.280	.226	1.544	.214	1.324	.851	2.060
Learning Disabilities	.207	.239	.746	.388	1.230	.769	1.966
Life Coaching	.605	.196	9.473	.002	1.831	1.246	2.691
Life Transitions	.264	.149	3.121	.077	1.302	.972	1.746
Marital and Premarital	.385	.151	6.488	.011	1.470	1.093	1.976

	B	S.E.	Wald	Sig.	Exp(B)	Lower	Upper
Treatment Compliance/Medication Management	-.455	.206	4.855	.028	.635	.424	.951
Men's Issues	.064	.169	.141	.707	1.066	.765	1.484
Narcissistic Personality	.531	.201	7.008	.008	1.701	1.148	2.520
Obesity	-.513	.224	5.259	.022	.599	.386	.928
OCD	.089	.155	.334	.564	1.093	.808	1.480
Oppositional Defiance	.217	.219	.978	.323	1.242	.808	1.910
Parenting	.350	.171	4.202	.040	1.420	1.016	1.985
Pregnancy	-.032	.350	.008	.927	.969	.488	1.923
Prenatal	.310	.386	.646	.422	1.363	.640	2.903
Postpartum	.171	.235	.531	.466	1.187	.749	1.880
Racial Identity	-.761	.292	6.807	.009	.467	.264	.828
Relationship Issues	.022	.168	.017	.895	1.022	.735	1.422
School Issues	-.281	.183	2.356	.125	.755	.528	1.081
Self Esteem	-.166	.173	.927	.336	.847	.604	1.188
Self-Harming	.146	.182	.638	.424	1.157	.809	1.653
Sex Therapy	-.091	.220	.170	.680	.913	.593	1.407
Sexual Abuse	.015	.164	.008	.929	1.015	.736	1.399
Sleep or Insomnia	-.027	.168	.025	.873	.974	.700	1.353
Spirituality	.202	.179	1.274	.259	1.224	.862	1.737
Sports Performance	.623	.268	5.416	.020	1.865	1.103	3.153
Stress	-.016	.173	.009	.926	.984	.701	1.381
Suicidal Ideation	.117	.174	.456	.500	1.125	.800	1.581
Teen Violence	-.172	.318	.292	.589	.842	.452	1.569
Testing and Evaluation	-.376	.167	5.094	.024	.686	.495	.952
Gender Identity	.313	.170	3.379	.066	1.367	.979	1.908
Trauma and PTSD	.083	.153	.292	.589	1.086	.805	1.466
Traumatic Brain Injury	.019	.214	.007	.931	1.019	.670	1.550
Women's Issues	-.234	.157	2.223	.136	.791	.581	1.076
Constant	-1.589	.199	63.649	.000	.204		

Classification success for the cases based on a classification cutoff value of .500 for predicting membership in the currently using telepsychology group. The overall prediction success rate of 78.8%. The true-positive rate indexing the sensitivity of the model was very low at .086, while the false-positive rate (1 – specificity) was .021 (i.e., the true-negative rate indexing the specificity of the model was .979).

In an effort to determine if the performance of the model could be improved by using an alternative decision threshold, the predicted probabilities of membership in the currently using telepsychology group were subjected to a receiver operating characteristic (ROC) analysis. The ROC curve is presented in Figure 8, and the area under the curve (AUC) was .698 (*SE* = .015).

Figure 9. ROC Curve for Logistic Regression 3
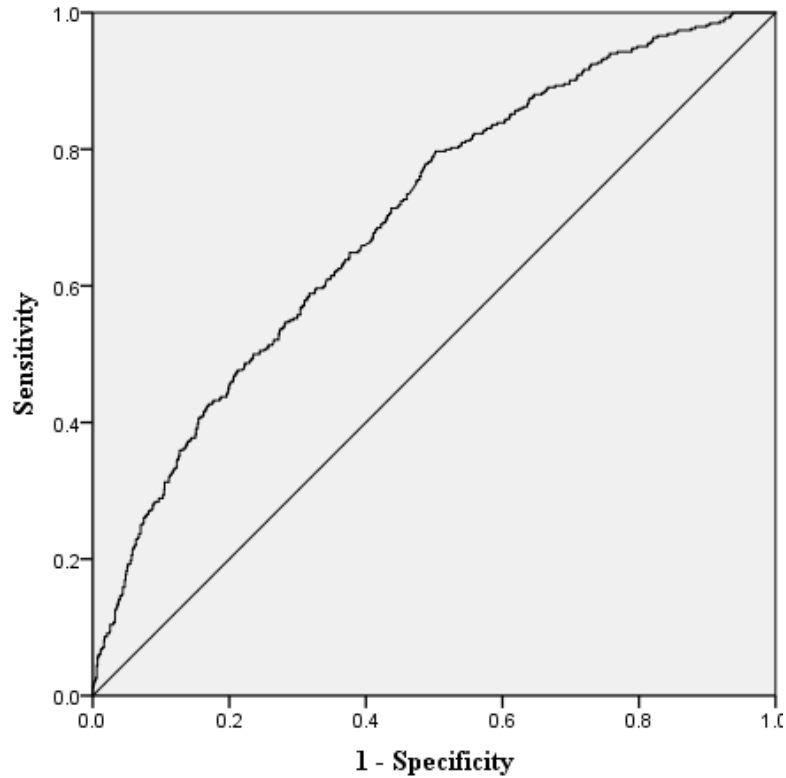
Coordinates of the ROC curve corresponding to whole number predictions of group membership are shown in Table 9.

Table 9. *Coordinates of ROC Curve 3*

Threshold	Sensitivity	1 - Specificity
.2063502	.635	.368
.2064770	.633	.368
.2065347	.633	.367
.2066620	.633	.367
.2068213	.633	.366
.2069267	.630	.366

.2070105	.630	.365
.2072537	.628	.365
.4942332	.091	.021
.4948814	.091	.021
.4955081	.089	.021
.4992628	.086	.021
.5032207	.086	.020
.5041890	.086	.019
.5059502	.086	.018

The original classifications under a normal probability of .500 corresponded to the actual

decision criteria of .499262. Inspection of Table 9 suggests that by moving to a revised

classification threshold of .206821, the sensitivity of the model would increase to .633, while the

false-positive rate (1-specificity) would only increase to .366. Adjusting the decision threshold to

.206821 resulted in an overall prediction success rate of 63.4%, correct prediction rates of 63.4%

for psychologists who do not currently use telepsychology, and 63.3% for those who do.

Discussion

Telepsychology has the ability to help psychologists assist individuals who, for a number

of reasons, may have reduced ability to attend traditional face-to-face therapy. The purpose of

this study was to examine factors that influence psychologists' decision to use telepsychology in

their own practice. Generally, results revealed psychologists are more likely to use

telepsychology if they perceive that telepsychology is useful and easy to use, if there are

telepsychology-specific organizational policies in their place of practice, and if they feel they

have been adequately trained to use telepsychology.

Nearly 80% of participants reported they do not currently use telepsychology within their

own practice. These results are in line with previous research indicating less than 20% of

psychologists were using telepsychology and expressed the same concerns (Perle, Burt, &

Higgins, 2014). This is in stark contrast with a U.S. Department of Health and Human Services

report (2016) estimating that 40% to 50% of hospitals, and over 60% of health-care institutions within the U.S. use telehealth. These estimates may be accurate at the hospital-level, but they are quite discrepant from the proportion of psychologists who are using telepsychology, at least in terms of the current sample.

Results based on the Theory of Reasoned Action (TRA) indicated psychologists' own beliefs and attitudes had a much greater statistical effect on their intention to use telepsychology than the perceived attitudes and expectations of others. Also, intention to use telepsychology exerted a strong connection with whether psychologists currently use it. Overall, the model was a poor fit for understanding why psychologists were or were not using telepsychology. These patterns of connections and fit indices are consistent with some research using the TRA to predict behavior such as consumer use of Internet banking (Yousafzai, Foxall, & Pallister, 2010) and students' interest in a career in Information Systems (Joshi & Kuhn, 2011). In the TRA model tested in the current study, subjective norms was not uniquely associated with the intention to use telepsychology, likely accounting for the poor overall model fit.

Applying the Technology Acceptance Model (TAM) to psychologists' responses yielded similar overall outcomes. Psychologists' attitudes about using telepsychology were largely informed by their perceptions concerning telepsychology's utility, and, to a lesser degree, their perception of its ease of use. Also, psychologists' attitudes towards using telepsychology, and to a lesser degree its perceived utility, were associated with their intention to use it. Finally, intention to use telepsychology predicted its actual use. In general, these relative strength of these various relationships agrees with previous research using the TAM to predict behavior (Schepers, & Wetzels, 2007). Overall, the TAM was equally as poor an explanation as the TRA for understanding why psychologists were or were not using telepsychology. One reason for the

TAM's poor model fit could have been due to direct paths not theorized in the model (and as a result, not specified in the path analysis). For example, there may have been direct effects from perceived ease of use to intention to use telepsychology, or from perceived usefulness to current use of telepsychology. A meta-analysis of TAM research found evidence to support the existence of these additional relationships (Schepers, & Wetzels, 2007). Based on the pattern of connections that emerged in the correlation matrix, some of these additional paths likely would have been significant, if specified. In consideration of the poor fit, interpretation of the TRA and TAM results should be done with caution.

Exploratory theory used in creating a third path model indicated that attitudes and intention were minor predictors of current use of telepsychology, and as a result, trimmed from the model. Although this does not match the theoretical models of the TRA and TAM, it does echo the results of Taylor and Todd (1995a; 1995b) in which they failed detect a significant relationship between attitudes and intention when using the TAM to study information technology usage. Additionally, the small relationship between intention and behavior is similar to previous results within the health research literature in which intention has been a precursor to behavior, but has not been a sufficient condition for engaging in a behavior (Kor, & Mullan, 2011; Rawstorne, Jayasuriya, & Caputi, 2000). For example, the weak relationship between intent and behavior has been noted in research literature examining tobacco cessation (Fiore, 2008) and healthy eating (Verplanken, & Faes, 1999). Instead, within the current study, the perceived attitudes and expectations of others were largely associated with psychologists' perceptions of how useful and easy to use telepsychology is, both of which were associated with psychologists' use of telepsychology. The fit indices of this final model, after the trimming process, were in the adequate to good range, and as a result this model was retained.

Results from a logistic regression revealed that psychologists were more likely to use telepsychology if they practice within an organization with policies concerning telepsychology, or if they had received training in telepsychology. This is similar to previous research literature in which mental health providers reported more favorable attitudes toward adopting new EBPs when their organization has written policies in place (Aarons, 2004). This also aligns with previous research indicating that two-thirds of psychological professionals perceive they do not possess sufficient training to work with their clients using telepsychology (Perle, Burt, & Higgins, 2014).

Psychologists within U.S. Department of Veterans Affairs (VA), or practicing in an individual/group practice were more likely to use telepsychology. The VA results are not surprising when the importance of policies and training on use of telepsychology are considered. The VA has implemented a very robust, multi-stage training program to teach practitioners how to initiate and conduct telepsychology and telehealth interventions. They have also established a number of policies concerning the use of telepsychology, and continue to address current interjurisdictional barriers blocking VA practitioners from treating veterans across state lines (Authority of Health Care Providers to Practice Telehealth, 2017). Their continued endorsement of this mode of treatment is evident in the more than 2 million telehealth sessions used during the fiscal year of 2016 to assist veterans within their care, and their rollout of VA Video Connect system allowing veterans to participate in telehealth sessions using their own computers and smartphones (U.S. Department of Veterans Affairs, 2017). Conversely, the increased use of telepsychology among psychologists in individual/group practice may be the result of working within a low-bureaucracy environment where psychologists themselves can make their own decisions about telepsychology clinical practice. Research indicates that mental health

professionals working within low-bureaucracy settings are more likely to accept new EBPs (Aarons, 2004).

Results also indicated higher likelihood of telepsychology use among psychologists providing marital/pre-marital counseling, or parenting support. These results align with a study by Aarons (2004) indicating that practitioners within wraparound programs for children and families were more likely to adopt new EBPs. Also, parents receiving counseling via telepsychology have rated their satisfaction with the experience very highly, in part because it was easier to fit sessions into their schedules by avoiding commute times (Elford et al., 2001).

There was a higher likelihood of using telepsychology among psychologists who provide life coaching and those who treat individuals with narcissistic personalities. Otte, Bangerter, Britsch, and Wüthrich (2014) found favorable attitudes towards computer usage for coaching among Swiss life coaches. Often, the clients of life coaches are individuals with demanding, stressful, and highly-scheduled positions with increased power and responsibility. As a result, life coaches have a higher likelihood of encountering individuals with narcissistic personality traits (Kilburg, 1997; Schwartz, 1992). It may be that, although people with narcissistic traits are less likely to initiate treatment, they may be more likely to seek expert assistance with the professional development and strengths-focused counseling that life-coaching offers.

On the other hand, psychologists were less likely to use telepsychology if they practice within a rural area. This result was unexpected considering telepsychology could allow practitioners in rural areas to reach a greater number of individuals while decreasing the chances of dual relationships (Centore & Milacci, 2008; McCord et al., 2011). It may be the case that rural practitioners judge their resources are too limited to acquire and support a telepsychology platform, although future research on this topic is required.

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Psychologists focused on treatment compliance/medication management, bipolar disorder, obesity, grief, and antisocial personality were less likely to use telepsychology. Although no research uncovered in this literature review specifically shed light on these relationships, it is reasonable to interpret that patients who seeking psychologist's help for these issues would be more likely to be treated in a medical setting, which might be less likely to use telepsychology due to a higher level of bureaucracy (Aarons, 2004). Additionally, psychologists who specialized in issues of racial identity were less likely to use telepsychology. This treatment emphasis may be more likely in settings such as university counseling centers, which have not historically embraced telepsychology.

Psychologists who provided testing and evaluation were also less likely to use telepsychology. Although some common assessments have been validated and normed using telepsychology, many require adapting the assessment or finding an alternative assessment if adaptation cannot be accomplished (Luxton, Pruitt, & Osenbach, 2014). Also, while performing a battery of assessments, it is common practice to incorporate relevant interpersonal interactions into the final assessment. Psychologists working in this area may perceive they can achieve a more comprehensive assessment in person, or perhaps they work within institutions or locations that more easily facilitate face-to-face interactions.

The data suggested that identifying as a woman was not a significant predictor of telepsychology use. This is in contrast with the results of a study indicating that women who provide mental health services were more likely to adopt EBPs when compared to men (Aarons et al., 2010). These results do agree with results from an earlier study demonstrating women were no more open to adopting EBPs than men were (Aarons, 2004). Evidence suggests that individuals who select similar occupations also tend to share similar personality traits such as

openness, agreeableness, and extroversion (Barrick, Mount, & Gupta, 2003; Betz, Borgen, & Harmon, 2006). These shared personality influences may be more significant predictors of some behaviors than differences between genders. As a result, similarities among individuals who select psychology as a profession, and choose to practice, may overshadow potential differences between genders regarding approaches to EBPs.

Age was also not found to be a significant predictor of telepsychology use. Preliminary analysis revealed age and experience were highly correlated with one another, so because of this, only age was tested as a predictor. The multicollinearity of the two variables means experience would have yielded a similar result. This was unexpected in consideration of previous literature indicating older individuals and individuals early in their careers were more open to new EBPs (Aarons, 2004; Aarons et al., 2010).

Implications

The results have widespread implications. Organizations interested in implementing telepsychology could benefit from creating policies supporting its use and provide adequate training, as these were the two biggest predictors of use. For example, the VA has developed very specific policies surrounding the use of telepsychology (U.S. Department of Veterans Affairs, 2016), which likely accounts for the substantial increased use of telepsychology found in the current study among psychologists working in the VA. Organizations could also benefit from adopting methods for delivering telepsychology that are easy to use and have demonstrable utility in providing therapeutic interventions. For example, the VA has developed an easy to schedule and use, web-enabled platform allowing veterans to use their own computers or smartphones to connect with mental health professionals (U.S. Department of Veterans Affairs, 2017). Developers should ensure that ease of use and utility are key considerations during

development of their telepsychology applications. Developers should also provide sufficient

documentation or training methods for users. Organizations such as the American Telemedicine

Association and companies like the TeleMental Health Institute offer specific training for

psychologists in the use of telepsychology (Maheu, 2016).

Universities responsible for training psychologists could improve perceived norms

concerning telepsychology, and provide their students with guidance concerning the ethical and

effective use of telepsychology. The Department of Educational Psychology at Texas A&M

University operates the Telehealth Counseling Clinic to serve rural communities within Texas

and to train doctoral students within the psychology program. In addition to core therapeutic

competencies, students within the clinic are trained concerning laws and guidelines specific to

telepsychology; how to determine which clients, interventions, and assessments are appropriate

for telepsychology; troubleshooting technology issues; and how to evaluate current and future

telepsychology solutions (McCord, Saenz, Armstrong, & Elliott, 2015).

Finally, for government and regulatory entities, creating clear, specific, and consistent

laws governing the use of telepsychology could encourage more psychologists to treat

individuals currently restricted from mental health services by time or geography. States with too

few mental health professionals could make telepsychology more useful and easier to use by

easing current rules concerning interjurisdictional practice. The Association of State and

Provincial Psychology Boards (ASPPB) is already moving in this direction and has developed

Psychology Interjurisdictional Compact (PSYPACT), intended to facilitate telepsychology

across state lines (Association of State and Provincial Psychology, 2016b). States that enact

PSYPACT into law would allow psychologists to conduct telepsychology with clients located

within other PSYPACT states with without holding a license in the client's state. The findings

from this study could very concretely support the passage of such legislation and a way to increase psychologists' adoption of telepsychology. Additionally, legislation requiring insurance companies to reimburse for telepsychology sessions may increase psychologists' perceptions concerning telepsychology's ease of use and usefulness for themselves and their clients. Currently, there are 30 states that have passed such laws with another 7 with proposed legislation under consideration (American Telemedicine Association, 2017).

Limitations and Future Directions

The current study possesses a number of limitations, and as a result directions for future research. First, the use of Internet-based surveys provides minimal control over which individuals choose to participate, a process that can lead to bias (Anderson & Kanuka, 2003; Leary, 2012). A large proportion (65.5%) of participants indicated they worked within private practice while the APA reports this sample characteristic should be closer to 44.7% (Stamm, Lin, Christidis, 2017). As a result, conclusions based on these findings should be made with caution.

Another weakness of the current study is that Models 3 through 8 were derived using exploratory theory or trimming procedures rather than formal *a priori* reasoning grounded in the published research. This increased the possibility that the current study capitalized on chance relationships unique to the current sample, and therefore future research should attempt to replicate the final retained model. It should also be noted that the cross-sectional nature of this study makes it difficult to determine the direction of causality. Although research utilizing path modeling analysis usually assumes causation based on previous theory, the data analyses were correlational. In regards to Model 8, it may also be the case that psychologists currently using telepsychology are more likely to find it easier and more useful as a result of their increased experience with it. Current users may be more likely to interact with other practitioners using

telepsychology, which could result in higher subjective norm scores. The relationships found between variables within Model 8 may be due to variables not controlled for within the model. A future research approach would utilize a longitudinal design to investigate with more certainty a causal chain; such research might examine the effectiveness of an intervention designed to affect psychologists' attitudes and behaviors concerning telepsychology.

Another weakness in the current study is that participants were not asked to specify if they were primarily connecting to clients at home, a clinic, or somewhere else. Doing so would have provided a more comprehensive and nuanced picture of how telepsychology is being implemented. A follow-up exploration of psychologist perceptions and experiences about telepsychology would greatly benefit from examining differences between these groups to determine what is working well and what forms of telepsychology need work.

A direction for future research is to examine factors that determine psychologists' subjective norms, the perceived utility, and ease of use concerning telepsychology to better understand the relationships found within the current study. Practitioners not using telepsychology were not asked if organizational policies prohibit them from doing so. It may be that some psychologists would use telepsychology if they were allowed to do so. An exploration of the types of policies in place across different treatment settings might indicate why some settings are more likely than others to encourage the use of telepsychology. Finally, research could seek to determine what barriers to adoption exist for psychologists across a variety of treatment emphases. This could elucidate what features are required to facilitate different interventions, or indicate which ones are not currently adaptable.

Conclusions

Telepsychology has the potential to help connect psychologists with individuals in need of mental health services who struggle to attend or forgo traditional face-to-face therapy. The results of this study can serve as a launch for future work in understanding why approximately 80% of psychologists do not use telepsychology within their practice. This cross-sectional study examined how well the TRA, TAM, and a third model apply to psychologists' openness to using telepsychology, and sought to identify significant personal or environmental predictors of telepsychology adoption. It was determined that the TRA and TAM fit poorly as models of psychologists' openness to using telepsychology. Adequate fit was found by eliminating attitudes and intention as predictors of current use of telepsychology, while retaining subjective norms, perceived ease of use, perceived usefulness, and current use of telepsychology. Also, psychologists were more likely to engage in telepsychology if they have received specific training in it, or practice in a setting with policies concerning the use of telepsychology. Psychologists with a particular treatment emphases or working within the VA or private practice were more likely to adopt telepsychology. On the other hand, psychologists within rural areas, or some treatment emphases were less likely to use it. Organizations, training institutions, application developers, private organizations, and public institutions can all play a part in shaping current and future psychologists' perceptions concerning the use of telepsychology. Doing so could benefit entire regions within the U.S. by increasing access to mental health services for millions of people that are currently struggling with little to no treatment.

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Appendix A

Invitation Email

Dear Dr. [Last Name]:

I am emailing you to invite you to participate in a research study. I am a psychology doctoral student at Virginia Commonwealth University, and my thesis examines the feasibility of different treatment approaches in mental health practice. The goal is to hear from psychologists practicing in a variety of settings (e.g., private practice, Veteran's Affairs, inpatient and outpatient clinics, etc.). To be eligible, you have to: (1) be licensed to practice as a psychologist in the US, (2) be currently practicing psychotherapy, and (3) be at least 18 years of age. Completing the survey for this study should take you no longer than 10 minutes. You may click on the link at the bottom of this email to access the survey. Participation in this study is voluntary. Your identity will remain completely anonymous.

If you have any questions about this research protocol, please contact me via email at piercebs@vcu.edu. Questions or concerns about your rights as a research participant may be directed to the Office of Research at Virginia Commonwealth University, Box 980568, Richmond, VA., 23298; ph (804) 827-2157.

Thank you so much for your time,

Bradford S. Pierce

Survey Instructions and Questions

Instructions:

Read each question and then indicate the answer that best fits. For the purpose of this survey, "telepsychology" refers the use of video conferencing technology to provide psychological services.

1. Are you licensed to practice as a psychologist? (yes, no)

2. Are you currently practicing (seeing clients/patients)? (yes, no)

3. How long have you been providing mental health services as a psychologist (in years)?

4. What is your current age (in years)?

5. What gender do you identify as? (Woman, man, gender non-conforming (GNC), genderqueer, intersex, transman, transwoman, other gender [please specify])

6. Indicate your race/ethnicity. (White/European-American [non-Latino/non-Hispanic]; Black/African-American [non-Latino/non-Hispanic], Latino/Hispanic; Asian/Asian-American [non-Latino/non-Hispanic]; American Indian/Alaska Native/Native American; Multiracial/Multiethnic; Other [please specify])

7. Would you consider your primary practice to be located in an urban, suburban, or rural setting? (Urban, suburban, rural)

8. Indicate your primary treatment setting? (Career Center, Correctional Facility, Employee-assistance program, Geriatric Facility, Hospital, Individual/group practice, Outpatient Treatment Facility, Rehabilitation Center, Religious Institution, Residential Treatment Facility, School/University, Other [Please specify])

9. How many psychologists (including yourself) practice within your primary treatment setting?

   (1, 2– 5, 5 – 10, 10 – 20, 20 – 50, 50+)

10. What is the treatment focus of your primary mental health services setting (select all that apply)? (ADHD, Addiction, Adoption, Anger Management, Antisocial Personality, Anxiety, Asperger's Syndrome, Autism, Behavioral Issues, Bipolar Disorder, Borderline Personality, Career Counseling, Child or Adolescent, Chronic Illness/Pain, Depression, Developmental Disorders, Eating Disorders, Family Conflict, Grief, Hoarding, Intellectual Disability, Intimate Partner Violence, Learning Disabilities, Life Coaching, Life Transitions, Marital and Premarital, Treatment Compliance/Medication Management, Men's Issues, Narcissistic Personality, Obesity, Obsessive-Compulsive (OCD), Oppositional Defiance, Parenting, Pregnancy, Prenatal, Postpartum, Racial Identity, Relationship Issues, School Issues, Self Esteem, Self-Harming, Sex Therapy, Sexual Abuse, Sleep or Insomnia, Spirituality, Sports Performance, Stress, Suicidal Ideation, Teen Violence, Testing and Evaluation, Transgender, Trauma and PTSD, Traumatic Brain Injury, Women's Issues)

11. What is your theoretical therapeutic approach (select all that apply)? (Acceptance and Commitment, Cognitive Behavioral, Existential, Family Systems, Feminist, Gestalt, Individual/Adlerian, Interpersonal, Jungian, Narrative, Person-centered/Rogerian, Psychoanalysis, Rational Emotive Behavior Therapy, Reality Therapy, Solution-Focused Therapy, Other [Please specify], Not applicable)

12. Do you currently use telepsychology to provide mental health services? (Yes, No)

13. Have you ever used telepsychology to provide mental health services? (Yes, No)

15. Does your treatment setting have policies permitting the use of telepsychology with clients?

(Yes, No)

15. Regardless of whether you currently use telepsychology, do you believe your training has

prepared you to use telepsychology with clients? (Yes, No, I do not know)

16. If you DO NOT currently use telepsychology, what led to this decision (select all that apply)?

(State have laws prohibit its use, Organizational policies prohibit its use, Client

Safety/Crisis concerns, Cost, Efficacy, Ethics, Privacy, Legality, Reimbursement,

Insufficient training, Other [Please specify]):

17. If you DO currently use telepsychology, what led to this decision (select all that apply)?

(Organizational policies require its use, Extend reach of practice, Cost, Efficient use of

time, Efficacy, Facilitates specialization with specific disorders, Convenience for

client/patient, Other [Please specify]):

Openness to Telepsychology

Instructions:

Read each statement and then indicate the response that best describes your agreement or

disagreement using the response options from 1 = Strongly Disagree to 7 = Strongly Agree.

1. Using telepsychology in patient care and management is a good idea.

Strongly Disagree			Neutral			Strongly Agree
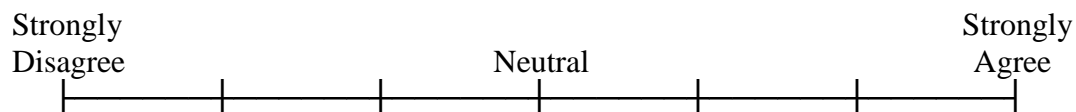
2. Using telepsychology in patient care and management is unpleasant.

Strongly   Strongly

Disagree   Neutral   Agree
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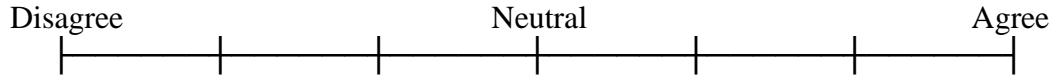
3. Using telepsychology is beneficial to my patient care and management.

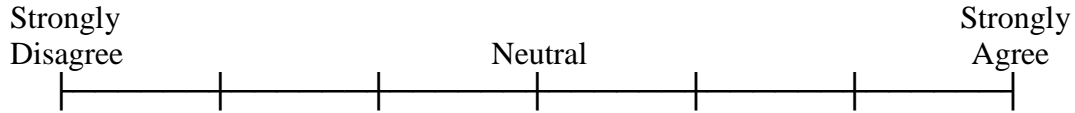Strongly   Strongly
Disagree   Neutral   Agree
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4. People who influence my clinical behavior think that I should use telepsychology.

Strongly   Strongly
Disagree   Neutral   Agree
├────────┼────────┼────────┼────────┼────────┤
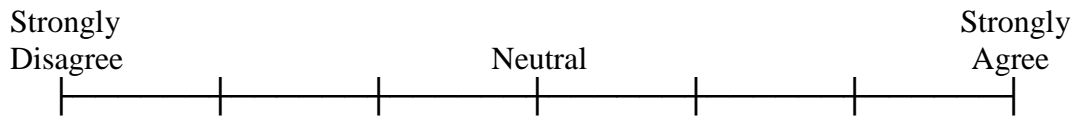
5. People who are important to my health care services think that I should not use telepsychology.

Strongly   Strongly
Disagree   Neutral   Agree
├────────┼────────┼────────┼────────┼────────┤
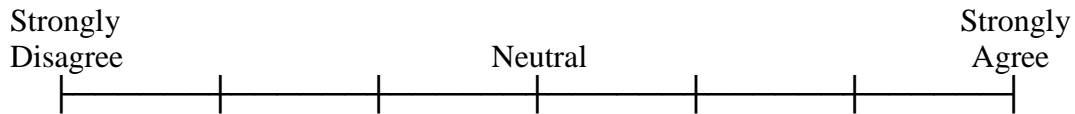
6. People who are important in assessing my patient care and management think that I should not use telepsychology.

Strongly   Strongly
Disagree   Neutral   Agree
├────────┼────────┼────────┼────────┼────────┤
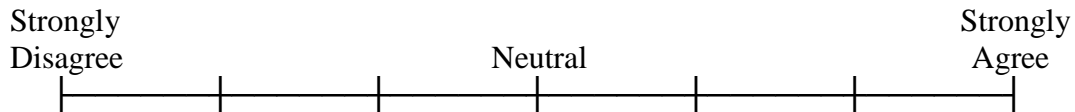
7. Using telepsychology cannot improve my patient care and management.

Strongly   Strongly
Disagree   Neutral   Agree
├────────┼────────┼────────┼────────┼────────┤
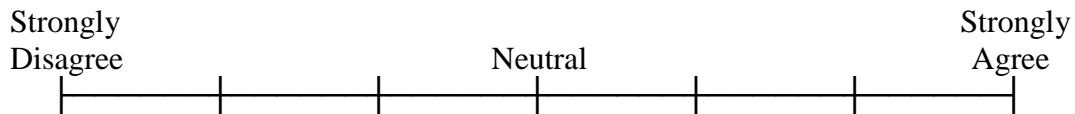
8. Using telepsychology cannot enhance my effectiveness in patient care and management.

Strongly   Strongly
Disagree   Neutral   Agree
├────────┼────────┼────────┼────────┼────────┤
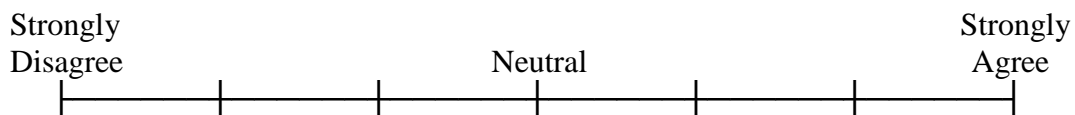
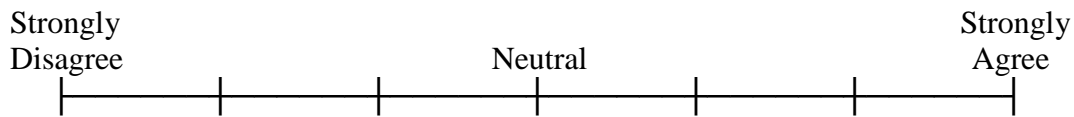9. Using telepsychology can make my patient care and management easier.

Strongly   Strongly
Disagree   Neutral   Agree
├────────┼────────┼────────┼────────┼────────┤
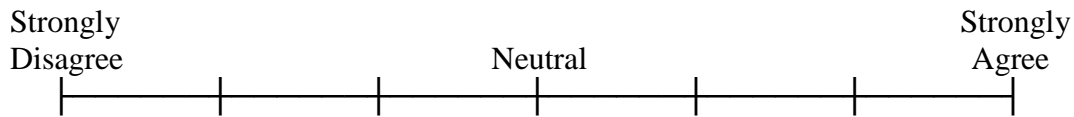
10. I would have the ability to use telepsychology in my patient care and management

Strongly   Strongly
Disagree   Neutral   Agree
├────────┼────────┼────────┼────────┼────────┤

11. Using telepsychology would be entirely within my control.

Strongly   Strongly
Disagree   Neutral   Agree
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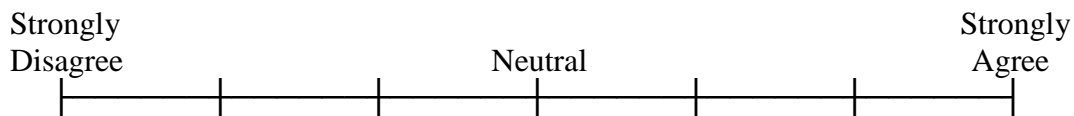
12. I would not have the knowledge to make use of telepsychology in my patient care and management

Strongly   Strongly
Disagree   Neutral   Agree
├────────┼────────┼────────┼────────┼────────┤
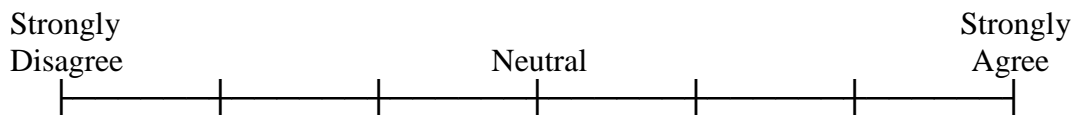
13. I would have the resources (including training) to make use of telepsychology in my patient care and management

Strongly   Strongly
Disagree   Neutral   Agree
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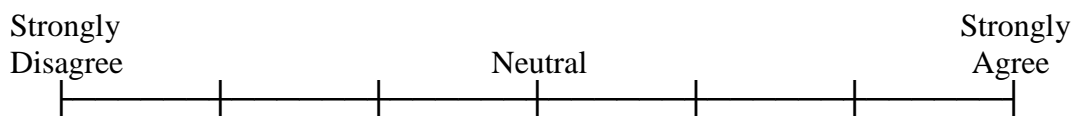
14. I would find telepsychology not useful for my patient care and management.

Strongly   Strongly
Disagree   Neutral   Agree
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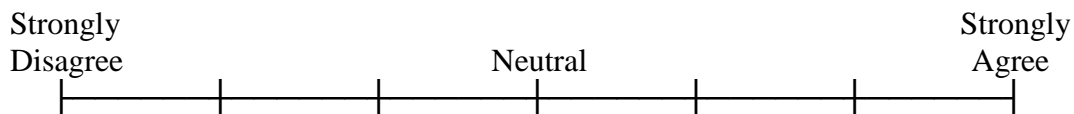
15. Learning to operate telepsychology would not be easy for me.

Strongly
Disagree   Neutral   Strongly
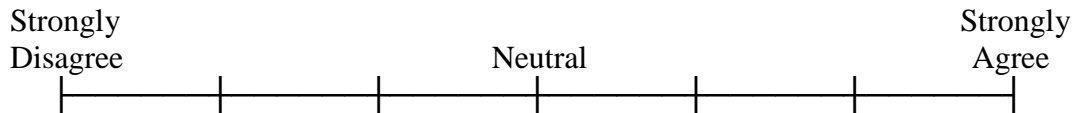   Agree
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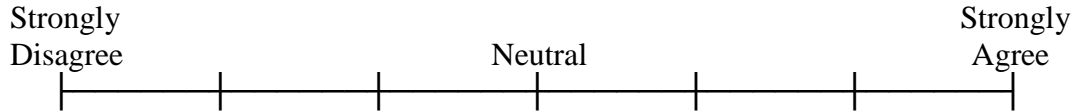
16. I would find it easy to get telepsychology to do what I need it to do in my patient care and management.

Strongly   Strongly
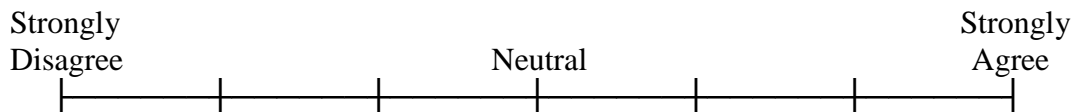Disagree   Neutral   Agree
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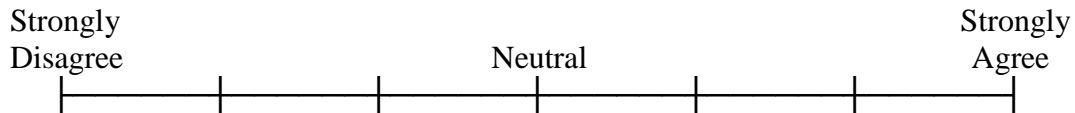
17. It is not easy for me to become skillful in using telepsychology.

Strongly   Strongly
Disagree   Neutral   Agree
├──────┼──────┼──────┼──────┼──────┤
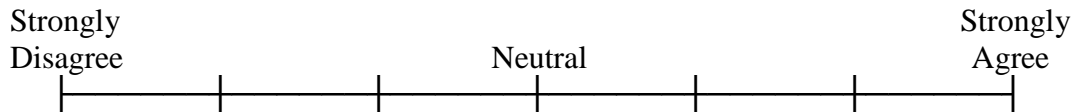
18. I find telepsychology easy to use.

Strongly   Strongly
Disagree   Neutral   Agree
├──────┼──────┼──────┼──────┼──────┤

19. I intend to use telepsychology for patient care as often as needed.

Strongly   Strongly
Disagree   Neutral   Agree
├──────┼──────┼──────┼──────┼──────┤

20. Whenever possible, I intend not to use telepsychology for patient care.

Strongly   Strongly
Disagree   Neutral   Agree
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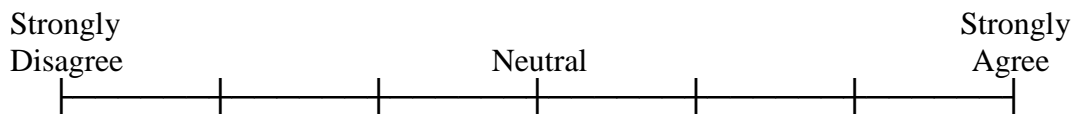
21. To the extent possible, I would use telepsychology in my patient care frequently.

Strongly   Strongly
Disagree   Neutral   Agree
├──────┼──────┼──────┼──────┼──────┤
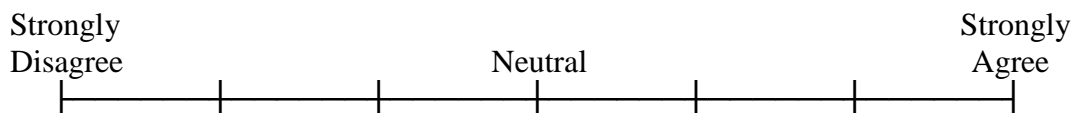
22. In one sentence or less, what do you think the purpose of this study was? (Free response)