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Attitudes Toward Psychological Tele-Health: Current and Future Psychologists' Opinions of Internet-Based Interventions

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ATTITUDES TOWARD PSYCHOLOGICAL TELE-HEALTH: CURRENT AND

FUTURE PSYCHOLOGISTS' OPINIONS OF INTERNET-BASED

INTERVENTIONS

By

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DISSERTATION APPROVAL SHEET

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Over the past 20 years, with the development and expansion of computer- and internet-

based services (e.g., psychoeducational, intervention, and testing programs), the

integration of technology with the treatment of mental health disorders has sparked one

of the most debated topics in the mental health profession. With no clear end for this

debate in sight, many believe that clinicians wish to reach a consensus and adopt a

universal stance on computer-based psychological services so that discussion and

research can be shifted to make meaningful contributions for the future. Although

paramount, many licensed psychologists have yet to state their stance of whether they

believe that internet-based therapeutic methods can be helpful; with fewer having

declared whether they would be willing to utilize such techniques if given the

opportunity. For this reason, the current study aimed to create a multi-focused survey to

explore the attitudes of currently licensed and future clinicians (current Ph.D. or Psy.D.

doctoral candidates) to explore differences in their acceptance of tele-health therapeutic

interventions. An online survey was created to assess such attitudes across various

domains of tele-health, as well as assess acceptance or rejection of such modalities.

Clinical training directors, faculty, and students from around the United States, as well as

members from the APA Division 12 (clinical psychology) were invited to participate. Binary logistic regression, percentages, and descriptive statistics were utilized to examine the data. Data indicated that no significant differences between currently licensed and future psychologists exist in their endorsement of tele-health modalities. However, it was found that cognitive-behavioral-, cognitive-, behavioral-, and systems-oriented psychologists were significantly more endorsing, and willing to utilize tele-health modes of interventions than were dynamic/analytic, or existential-oriented therapists. Data was further analyzed by gender, age, and the interaction of age * orientation. Results of this study will aid in creating a consensus as to the utilization of tele-health practices and help drive research by demonstrating which modalities (e.g., web camera, e-mail, etc) and orientations should be the focus of research.

CHAPTER 1

Statement of the Problem

Over the past 20 years, with the development and expansion of computer- and internet-based psychoeducational, intervention, and testing programs, the integration of technology with the treatment of mental health disorders, often referred to as tele-health, has become one of the most debated topics in the mental health profession (Rochlen, Zach, & Speyer, 2004). Investigation into this debate has garnered strong arguments on both sides, with some declaring that computer-based therapeutic methods may be detrimental to both patients and the clinical psychological community, while others embrace the possibilities that the use of computers bring. With no clear end for this debate in sight, many believe that clinicians wish to reach a consensus and adopt a universal stance on computer-based psychological services so that discussion and research can be shifted to make meaningful contributions for the future (DeLeon, 2002). With the American Psychological Association (APA) having no firm stance on internet-based psychological services, practitioners are left to adopt their own opinions and guidelines to govern themselves. Possibly due to fear of being socially ostracized for differing opinions, many licensed psychologists have yet to state their stance of whether they believe that internet-based therapeutic methods can be helpful; with fewer having declared whether they would be willing to utilize such techniques if given the opportunity. This discrepancy has created difficulties for research into internet-based interventions, as it is unclear if time and effort should be spent investigating such modalities and their application. Although some computerized methods are available, it is currently unknown whether differing levels of clinicians would be inclined to use them.

For this reason, the purpose of the current study is to create a multi-focused survey to explore the attitudes of current and future clinicians (current doctoral level graduate students) to explore differences in the acceptance of tele-health-based therapeutic interventions.

Due to computers becoming increasingly smaller, cheaper, and more powerful, the use of technology to reach individuals has been becoming increasingly attractive to health professionals (Sturges, 1998; Emmelkamp, 2005). Demand has even led to the development of numerous health information sites, such as WebMD (www.webmd.com), that serve to deliver medical advice to help those who would otherwise be unable to attain any due to such factors as time, money, family needs, transportation difficulties, illness, or geographical location (Sturges, 1998; Emmelkamp, 2005; Cartreine, Ahern, & Locke, 2010). The notion that technology can be used to alleviate concerns of time and money, with the ability to reach those who are unable to attend face-to-face treatments may also be applied to current psychological services. Such methods as email, video conferencing, psychoeducational programs, computerized intervention programs, and online support groups have all demonstrated preliminary evidence of positive outcome for participants (e.g., Beard & Amir, 2008; White, Jones, & McGarry, 2000; Greist, 2008; Tate & Zabinski, 2004). They have also been found to help individuals initiate social change (Sampson, 1998), provide school counseling and care (Gray, 1997; Young & Ireson, 2003), and allow for psychological consultation and supervision (Stamm, 1998; Wood, Miller, & Hargrove; 2005). However, it is unknown if the general population of clinicians are supportive of or willing to utilize technology in common practice.

Limited research on stance and orientation. Although proposing new possibilities for psychological treatment; past research has been lacking in determining clinicians' attitudes towards the utilization of online services. Additionally, work that has been completed has demonstrated many shortcomings that create difficulty for interpretation and generalization to the psychological community. Only two studies were recognized to have directly examined clinician attitudes towards computer-based therapies. One study conducted by Mora, Nevid, and Chaplin (2008) mailed surveys that included short vignettes of anxious and depressed individuals to evaluate 138 psychologist's endorsement of the four internet-based treatment modalities of email, individual chat, group chat, and video conferencing as either adjunctive or alternative forms of treatment. Findings demonstrated that overall, psychologists provided low levels of endorsement of internet-based services, however were more accepting of adjunctive therapy rather than stand-alone computerized therapy. Psychologists were also significantly more inclined to be accepting of internet-based therapeutic interventions if the provided vignette made no mention of past treatment. Although this study did utilize a MANOVA framework to explore relationships, while examining demographic variables including age and gender; due to the small sample size comprised of only clinicians in New York taken from the New York State Psychological Association's directory, limited conclusions can be drawn. Similar criticisms can be applied to the lack of a large-scale analysis of theoretical orientation in determining endorsement of internet-based interventions. Although analyses did find that cognitive-behaviorally-oriented (CBT) practitioners were more strongly likely to endorse internet-based interventions over

psychoanalytically-orientated practitioners; the small sample size may not allow for generalization to the general population of clinicians.

An additional study conducted by Wangberg, Gammon, and Spitznogle (2007) examined Norwegian psychologists' use of and attitudes towards what they termed "e-therapy." Eight hundred and fifty four Norwegian psychologists were mailed a survey to examine demographics, theoretical orientation, computer competence and attitudes concerning such methods of therapeutic transmission. Contrasting with findings by Mora, et al. (2008), Wangberg, et al. (2007) found that Norwegian psychologists adopted a neutral stance with only 3% of the psychologists indicating that they feel e-therapy between client and therapist is unacceptable. Similar to Mora, et al.'s study (2008), psychodynamically oriented therapists were less likely to endorse computerized methods than were cognitive- or behaviorally-oriented therapists (Wangberg, et al., 2007). Similar to the Mora, et al. (2008) study, the Wangberg, et al. (2007) study is limited by a specific population of clinicians. Although it is unclear if Norwegian therapists' attitudes differ from that of other parts of the world including the United States, the findings proposed do not allow for strong generalization. Of secondary concern, few complex statistical analyses were completed, with all findings summarized by Chi Squared and percentages, which served to limit potential conclusions due to a lack of examination of specific moderation variables.

Lack of agreement of endorsement. As there has been a scarcity of research completed on the topic, with only two studies being identified as directly measuring suggested constructs, numerous shortcomings in the literature were identified. These shortcomings affect, and ultimately limit the conclusions and generalizations that can be

gathered. Discrepancy in psychologist endorsement of tele-health modalities proved to be one of the most significant differences between completed studies. For example, Mora, et al. (2008) found that a majority of the psychologists surveyed rejected the idea of computerized therapeutic aid, while Wangberg, et al. (2007) found only 3% who viewed computerized methods as unfavorable. Although these differences may be accounted for by geographical and ideological differences, with the Mora, et al. (2008) study utilizing a small subsection of the United States, and the Wangberg, et al. (2007) study utilizing Norwegian psychologists in their samples; without a follow-up study or additional findings, no significant conclusions can be drawn. This discrepancy of psychologist endorsement creates difficulty in gaining a true understanding of psychologist attitude.

Small samples. Small sample sizes have been another area of concern for past studies. It is estimated that there are 93,000 practicing licensed psychologists in the United States alone (American Psychological Association, 2010); however the only study examining this population obtained a relatively small sample, with Mora, et al. (2008)'s study being comprised of 138 participants from the New York State Psychological Association's directory. Although a respectable number due to the difficulty of such research, a larger sample that includes psychologists from around the United States should be obtained to allow for greater generalization of findings. For example, it is possible that due to the limiting nature of using psychologists only from New York; geographical or common ideological ideals may be present that may not be recognized in psychologists of other locations.

Limited demographics. Difficulty surrounding the lack of a large sample size is compounded by a limiting demographic of primarily females being obtained in

previously conducted studies. A stronger response rate of females may impose a statistical bias that could serve to skew findings, as male psychologists were not accurately represented. Additionally, the lack of a diverse age range may create age specific differences in attitudes. For example, Mora, et al.'s (2008) investigation indicated that although many clinicians did not express strong levels of endorsement of online therapies, the clinicians stated that they were not trained in such methods. Due to this it may be hypothesized that these clinicians may not feel comfortable conducting therapy under such conditions due to a lack of knowledge. However, when questioned, many of these clinicians in the sample expressed that they did not wish to receive training to be able to effectively utilize such modalities (Mora et al., 2008), implying a potential bias of disinterest towards online therapies that may not be present in other age brackets (e.g., younger clinicians who are more familiar with computers). Due to this, it is unclear if findings suggested by Mora, et al. (2008) are related to the specific populations being assessed, or are the attitudes and beliefs of the current psychological community.

Theoretical orientation. Believed to be a powerful predictor of internet technique endorsement; theoretical orientation has yet to be explored within a large framework. As previous research has found (e.g., Mora, et al., 2008; Wangberg, et al., 2007), cognitive, behavioral, and cognitive-behavioral therapists have been more open to utilizing the internet in their treatment, while psychodynamically trained clinicians have generally had significant reservations. Although this may be a true generalization of the psychological community, current research does not provide strong evidence to support this, and therefore it is unclear if this is an artifact of the specific populations tested. Although CBT and psychodynamic orientations have been demonstrated to be popular

among clinicians, current research also leaves out numerous other common theoretical orientations such as existential, and systems theories (Cook, Biyanova, Elhai, Schnurr, 2010).

Students versus licensed psychologist comparison. One area of interest that has become a focal point for many debates and has remained unstudied is the attitude variability towards internet-based interventions of current psychologists; whether practicing or instructing as professors, as compared to future psychologists, who are currently pursuing their doctoral degree. This overlooked comparison has become apparent due to clinician's reports from Mora, et al.'s study (2008) indicating that many therapists and professors do not have training in the computerized methods. However, more interesting is that a vast majority of those sampled indicated that they did not have an interest in learning. Such a stance may imply a bias in older therapists that may not be present in younger. As the future clinician's generation grew up with computers and the internet, they may be more inclined to utilize such methods due to their previous experience with instant messaging, email, and video conference; allowing them to have obtained the skills and experience necessary to feel comfortable employing such methods in practice. Overall, comparing the attitudes of the next generation of clinicians (current doctoral level graduate students) to current clinicians can be helpful in elucidating how the different generations differ in their attitudes**,** while also providing direction for future research.

With the American Psychological Association not having a firm stance on internet-based therapeutic methods, the psychological community has become at odds and no true consensus related to the utilization or acceptance of such modalities has been

determined. Due to this, the current study aims to explore the attitudes of current licensed psychologists, and future clinicians (current doctoral level graduate students) to determine the acceptance and willingness to utilize internet-based method of psychological intervention. The current design will seek to remedy many of the criticisms that have been proposed against previous studies such as a small sample size, and a lack of significant analyses examining such variables as sex, age, and theoretical orientation.

CHAPTER II

Review of the Literature

The rapid growth of the world wide web (www) has provided health professionals with a multitude of new means to reach its patrons (Ybarra & Eaton; Levy & Strombeck, 2002). It has been estimated that as of September 2002, more than 600 million people worldwide are using the internet, with nearly one third of those living in the United States and Canada (Tate & Zabinski, 2004); regardless of socioeconomic or ethnic group (U.S. Department of Commerce, 2002). Furthermore, as of 2009, it is estimated that approximately 70% of all American adults use the internet, with more than half spending at least one hour a day "surfing" the world wide web for information, (Lovejoy, et al., 2009) making travel reservations, ordering concert tickets, or accessing medical and psychological sources of information (Mora, Nevid, & Chaplin, 2008; Ybarra & Eaton, 2005). Through the use of computers, individuals are able to explore vast avenues of information from the comfort of their own home. One of the newest possibilities that have seen exponential expansion in both complexity and usage is health-related informational sites such as WebMD.com (www.webmd.com), which provides information on both medical and psychological disorders. Although providing some

benefit, an alarming finding has suggested that the internet is home to many who demonstrate clinically significant impairment (e.g., social anxiety; Erwin, Turk, Heimberg, Fresco, & Hantula, 2004). Even more alarming is that a majority of these individuals are seeking online information for their ailments rather than seeking face-to-face treatment (Gould et al., 2002). With such possibilities of reaching individuals, medical health providers have begun taking notice and creating new methods to reach out to the community. Although some medical health divisions have taken firm grasp of the possibilities of utilizing internet-based methods of intervention; overall, mental health providers have been trailing in declaring their stance on such methods of treatment. Due to a shift in the zeitgeist, some have reported a paradigm-shift that has resulted in the informing of the general public, including psychologists, about the potential positive outcomes that online-based interventions may be able to produce (Greist, 2008). Due to this shift, as well as the need for continued research and implementation of online services, it of great importance to determine current, as well as future, psychologists' attitudes towards online therapy, as their stance on endorsement will affect the future of the field and direct subsequent research and usage (Mora, et al., 2008). With these questions, it is important to not only recognize what the internet-based tele-health methods are comprised of, but also examine the numerous influences that may sway a psychologist to utilizing or rejecting electronic modes of treatment.

Defining Online Therapy

Since its inception, online therapies have been defined in a variety of ways. In order to develop a stance on internet-based therapies and interventions, one must understand the literature and the debate including what specifically is being defined as an

"online therapy." Several researchers have attempted to consolidate the differing definitions to create a universal nomenclature for the psychological community (e.g., Nickelson, 1998; Rochlen, et al., 2004; Barak, Klein, & Proudfood, 2009); however few attempts have been universally accepted. Two of the most comprehensive attempts that seek to condense the terminology are work by Barak, Klein, and Proudfoot (2009), and the Ohio Psychological Association Communications and Technologies Committee (Dielman et al, 2010; represented in Figure 1). Terms such as "computer-based program" or "computer-based intervention" are broad terms that encompass all computer-based methods and are typically accepted terms that are understood as to their design, however, difficulty and confusion arose with terms such as "online," "internet," and "tele-health" due to their ambiguity of usage and implementation. The following is an outline of the most commonly used terminology and their relationship to psychological services.

Tele-health. Tele-health is defined as "… the transmission of images, voice and data between two or more health units via telecommunication channels, to provide clinical advice, consultation, education and training services" (Dielman et al, 2010, p. 12; Maheu et al., 2005, p. 7). Tele-health is also defined as, "… the use of telecommunications and information technology to provide access to health assessment, diagnosis, intervention, consultation, supervision, education, and information across distance" (Dielman et al, 2010, p. 12; Nickelson, 1998, p. 527). This term spans numerous domains and is applicable to not only psychological services, but medical professions as well. If the "online world" is to be perceived as a hierarchy, then tele-health would be at the top, encompassing all other terminology.

Figure 1. Telehealth and Telepsychology Hierarchy (Dielman et al., 2010)
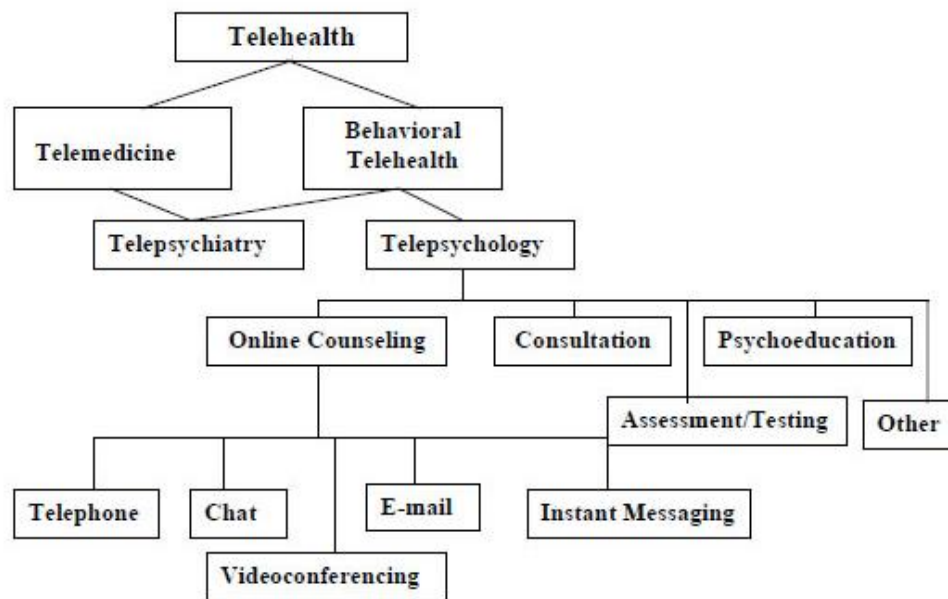
Telepsychology. *T*elepsychology is "the provision of non-face-to-face psychological services by distance communication technology such as telephone, e-mail, chat, and videoconferencing" (Dielman et al, 2010, p. 12). Telepsychology is essentially similar to other online therapies and E-therapies, however by definition includes the use of the telephone and other forms of communication in addition to computer modalities. Telepsychology may be considered one of the specified domains of tele-health services.

Online therapy. Online therapy is defined as, "… any type of professional therapeutic interaction that makes use of the internet to connect qualified mental health professionals and their clients" (Dielman et al, 2010, p. 12; Rochlen, et al., 2004, p. 270). Online therapy is one type of telepsychology and may include the use of telephone, chat, email, and video conferencing. However, this term does not include consultative or educational connotations.

E-Therapy and e-therapy. E-therapy consists of "a professional counselor or psychotherapist communicating with a client over the internet for the purpose of mental health assistance or emotional help" (Dielman et al, 2010, p. 12; Pomerantz, 2002 as cited by Mallen & Vogel, 2005, p. 764). Contrastingly, e-therapy is defined as, "the process of interacting with a therapist online in ongoing conversations over time when the client and counselor are in separate or remote locations and utilize electronics means to communicate with each other" (Dielman et al, 2010, p. 12; Manhal-Baugus, 2001, p. 551 as cited by Mallen & Vogel, 2005, p. 764). Although some have argued about the differences between E- and e-therapy, many have concluded that differences are not as pronounced as their similarities.

Due to the overlap of the common definitions, Barak, Klein, and Proudfoot (2009) attempted to further delineate the types of interventions. To accomplish this, they conducted a comprehensive review of the field and conceptualized internet supported interventions into four categories: 1. Web-based intervention, 2. Online counseling and therapy; 3. Internet-operated, therapeutic software; 4. Other online activities.

Web-based interventions. Web based interventions were proposed as the most inclusive term that incorporated therapy and treatment with prevention, promotion, and educational interventions (Barak, et al., 2009). As defined by Barak, Klein, and Proudfoot (2009), a web-based intervention is, "a primarily self-guided intervention program that is executed by means of a prescriptive online program operated through a website and used by consumers seeking health- and mental-health related assistance. The intervention program itself attempts to create positive change and or improve/enhance knowledge, awareness, and understanding via the provision of sound health-related material and use of interactive web-based components." In this definition, web-based interventions are commonly devoid of direct influence by the therapist and rely more on self-guided means.

Online counseling and therapy. Contrasting with web-based interventions, online counseling and therapy has been defined similarly to terms like "tele-health," "E-therapy," and "e-therapy." In this regard, online therapy and counseling allows clients to contact a counselor from any distance or time of day through an online computer. This allows one to overcome the obstacles of location, time, and making an appointment. Although more specific to computers and online services, online counseling and therapy

can still be viewed as a broad term, as it encompasses numerous modalities including individual and group contact.

Internet-operated therapeutic software. The use of internet-operated therapeutic software programs has become increasingly popular in the past few years. This method involves using therapeutic software incorporating advanced computer capabilities such as artificial intelligence principles or intricate programming for such purposes as computer simulated dialog-based therapy with patients, rule-based expert systems, gaming and three-dimensional virtual environments (Barak, et al., 2009), as well as cognitive retraining programs (e.g., Beard & Amir, 2008). These programs can be hosted online and be accessed by individuals who need therapeutic services. While each program may differ, the purpose behind such programs is to provide an individual with psychological services when the individual in question is unable to attend face-to-face therapy with a licensed psychologist. However, many note that caution should be taken with these programs, as each should be thoroughly tested and incorporate evidence-based findings to allow for maximum benefit to each potential client.

Other online activities. The final category defined by Barak, Klein, and Proudfoot (2009) includes the use of other internet-based methods that can be used as interventions. Such methods including the use of personal blogs, participation in support groups via chatrooms, audio, or webcam communication channels, online assessments, and the use of online mental-health related information websites, such as WebMD.

History of Non Face-to-Face Therapy

While some may argue that the use of computer communication (e.g., e-mail, video conferencing) as a vehicle for therapeutic transmission may be a novel approach,

the theory and practice of non-face-to-face methods of therapy have been occurring for decades, including through the use of letters and telephone calls (e.g., Haas, Benedict, & Kobos, 1996; Padach, 1984). Dating back to 1955, Sigmund Freud published papers outlining his use of letters as an active, indirect therapy (Freud, 1955). Following this, the first "tele-health" was cited to have taken place in 1959 at the University of Nebraska School of Medicine when researchers began experimenting with a closed-circuit television link to provide psychiatric and health services between the Nebraska Psychiatric Institute and Norfolk State Hospital (Brown, 1998).

With the increase in technology, it has been recognized that in addition to the use of telephones and closed-circuit television, other forms of technology, including computers, are becoming increasingly popular as means of therapeutic transmission. Stamm (1998) even proclaimed that with the development of new methods of transmission, any communication technology can, and will, be used in providing tele-health services. In this regard, Stamm (1998) may be correct, as with the advent of computers in the 1960's came "Eliza," a computer-program that used natural language to simulate therapeutic dialog for a therapeutic interview (Weizenbaum, 1966). Through research, programs have become more complex and subsequently more effective, evolving from "Eliza" to self-functioning cognitive therapy programs such as those that serve to "teach" problem solving techniques (Wagman, 1980) over the internet to a person's home computer. The use of computers in psychological work has continued to evolve into self-directed adjuncts to face-to-face therapies such as psychoeducation, self-monitoring, and positive reinforcement systems (Newman, et al. 1997). Although in its infancy compared to today's standards, research including that completed by Newman

and colleagues (1997) has begun to demonstrate evidence for the efficacy of the use of computers and non-face-to-face treatments that has paved the way for more complex tele-health interventions.

Types of Online Techniques and Therapies

With the advent of computers in clinical use, many therapists and researchers have begun blending these computers with methods of self-help (Williams & Whitfield, 2001) therapy, and testing (Emmelkamp, 2005, Barak, 1999). To this end, various methods have been employed including: E-mail, video conferencing, chat rooms, message boards, psychoeducational websites, and instant messaging. For many psychologists, endorsement may vary on the type of therapy modality being presented through electronic means. For this reason, it is important to recognize the two primary modes of electronic transmission that are available for intervention: Asynchronous and synchronous.

Asynchronous. Asynchronous communication is often defined as methods of communication in which there is a lag between contacts. Examples of this type of communication are e-mail, chat rooms, and message boards (Mora et al., 2008). This form of communication is often considered convenient because appointments do not need to be made in advance, and both the patients and the therapist can respond at their leisure. Asynchronous communications have been found to be the most common form of computer-based therapy, as e-mail is the most widely used electronic communication modality between patients and health care providers in the world (Castelnuovo, Gaggioli, Mantovani, & Riva, 2003). However, some therapists recognize that difficulties may arise when there is a lag between correspondences. Such is the case in emergency or

crisis situations in which a patient is unable to reach the therapist until it may be too late for the therapist to help (Mora et al., 2008). Additionally, these methods do not allow the therapist to observe the client's nonverbal communications and spontaneity which may hold important therapeutic information (Gabbard, 2007). Although problematic, text-based communications, such as e-mail, have been suggested to result in more expressive and honest communications; especially in patients who feel uncomfortable in face-to-face interactions (Mora et al., 2008). This notion is supported by the work of Cook and Doyle (2002) who evaluated treatment outcomes of 15 participants engaging in e-mail and chat room online therapy as compared to 25 face-to-face patients as a function of working alliance. The internet-based group, as a whole, was found to demonstrate higher scores on a working alliance measure in comparison to a face-to-face group suggesting the possible positive application of asynchronous methods.

Synchronous. Contrasting with asynchronous, *s*ynchronous communication is communication methods between a therapist and a patient that occurs in real-time where both are "synced." Examples of these types of communication methods include live audio or video conferencing, instant messaging, and live chat rooms. These forms of therapy are most akin to face-to-face methods in that the conversation is ongoing and typical time constraints can be placed upon the sessions. However, this method also implies many of the disadvantages of face-to-face therapy such as the time constraints and difficulty of scheduling. Compared to asynchronous communications, synchronous allows for spontaneity; resulting in possible disclosing of important information that would otherwise not be revealed in asynchronous interactions (Suler, 2000), but does not allow for a great degree of reflection (Mora et al., 2008). Although as controversial as

asynchronous for many psychologists, synchronous methods have been garnering increasing attention due to the United States military's recent usage to reach distant soldiers. One such example is from the Tripler Army Medical Center in Honolulu, Hawaii where clinicians are able to provide real-time biofeedback care and interviews with patients in Guam on United States navy battleships, as well as in Southeast Asia (DeLeon, 2002).

Despite each having advantages and disadvantages, both asynchronous and synchronous methods are believed to be currently actively employed by some therapists. A study of 44 online therapy websites run by psychologists was examined to investigate the prevalence of e-mail, chat, video conferencing, and message board usage. Eighty-four percent of the psychologists reported providing services by e-mail, while about fifty percent reported providing services by chat. However, only about nine percent reported communicating by video conferencing (Heinlen, Welfel, Richmond, & O'Donnell, 2003). In another study which examined the patient's relationship with the therapists, eighty percent reported conversing with their therapist via e-mail, while twenty percent communicated via chat utilities (Cook & Doyle, 2002). Although interesting, further work is needed to ascertain whether these findings are representative of the greater psychological population, or whether they are artifacts of the specific populations used. Additionally, as Stamm (1998) has suggested, with new innovations comes new opportunities suggesting that with newer video conferencing and interaction modalities through computers, more therapists may be inclined to utilize such modalities; however, while suggested, this trend is currently unclear.

Benefits of Computer- and Internet-Based Programs and Interventions

When one weighs the costs and benefits of online usage for intervention, many variables come into play. As previously discussed, the types of treatment modalities including the choice of asynchronous or synchronous forms of interventions must be assessed. However, research has suggested that the use of computers and the internet as a vehicle for therapeutic transmission may hold significant benefits for many, including the ability to reach a broader population, and defend against the development of additional comorbid disorders for those currently suffering from an ailment.

Universal appeal of computers. Due to the overwhelming expansion of the use of computers and the internet, many have turned to such machines for advice on their mental health. As of 2007, more than 50% of the United States' population has some form of high-speed internet (e.g., DSL, cable, ISDN, T1; Lovejoy, Demireva, Grayson, & McNamara, 2009) in their homes making high-speed internet the norm for internet-usage in households. Additionally, approximately 58% of American adults were reported to first consult online resources when seeking solutions to health problems rather than turning to offline information sources (Lovejoy et al., 2009). This is made alarming as mental health topics are among the most commonly searched terms, with depression being number four out of ten top accessed health topics (Maheu, 2001). Coupled with this, around 25% of young people have also used the internet as a source of mental health information (Gould, Munfakh, Lubell, Kleinman, & Parker, 2002). However, usage is not restricted to just Americans, as 53% of inhabitants of Oceania/Australia and over 36% of Europeans are also said to use the Internet (Skinner & Latchford, 2006) with as much as 53% of children in the Netherlands utilizing the internet on a daily basis with advocacy

from their parents (McKenney & Voogt, 2010). Due to such high usage, it appears reasonable that the use of computers with internet access may be an appropriate vehicle to reach individuals who already utilize such means to gather information about their ailments.

Reaching out to people. One of the strongest, most cited reasons for the advocacy of internet-based programs is the ability to reach out to both the general population and those that would otherwise not be able to receive face-to-face accommodations; possibly due to time, geographical location (e.g., rural or remote areas), money, disability, or other limitations (Emmelkamp, 2005). One of the most overlooked areas for those suffering from mental health disorders are those in rural communities (Emmelkamp, 2005). In these areas, individuals often are not able to travel to see a psychologist, or afford the high costs of the therapists should they be able to reach one. However, even if an individual is able to travel to a local psychologist on a consistent basis, the psychologists themselves are commonly scarce in rural communities, resulting in a vast majority of patrons being pushed to primary care providers who may not be adequately prepared to handle such treatments (Swinton, Robinson, & Bischoff, 2009).

Among this population, depression has been shown to be one of the most common illnesses. Psychologists have many useful, evidence-based face-to-face treatments to alleviate depression that often have positive outcomes, however, for those living in rural areas, devoid of psychological services, computerized online programs, or video conferencing may be a beneficial alternative. Recent research by Swinton, Robinson, and Bischoff (2009) found that primary care physicians, mental health professionals, and even the clients themselves believed that after depression treatment through electronic

means, the treatment was not only useful, but many declared that it should be utilized in the future. While the most common method of treatment in rural areas is medication, studies have found that often the depression is of a severity that treatment is best managed by a psychiatrist, as well as a psychological intervention (Geller, 1999; Von Korff, Katon, Unitzer, Wells, & Wagner, 2001). However, due to geographical barriers and social limitations, many who significantly need therapy are not receiving it. Interestingly, many in the rural areas do have computers and internet access suggesting that the use of such technology to reach these individuals may not only be beneficial, but a practical means to provide a possible adjunct to medication. Despite the controversy of usage, the use of computers for providing improved depression treatment in rural areas has been one of the most suggested methods that has gained support (Griffiths & Christensen, 2007; President's New Freedom Commission on Mental Health, 2003; U.S. National Institute of Mental Health, 2000), suggesting that the paradigm shift may soon lead more psychologists to consider this mode of treatment for this population.

For some therapists, the question of tele-health utilization may not only hinge on interventions to the common individual, but may also be determined by their ability to reach other, more difficult populations, such as those in the prison system. For some inmates, it is believed that therapy and rehabilitation may be enough to allow an individual who has had a negative past experience and served time in jail to be released and live a modest lifestyle without re-committing a crime. With the Federal Bureau of Prisons (BOP) housing over 109,000 prisoners, they have become one of the largest providers of psychological services for inmates, employing over 300 doctoral-level psychologists to deliver a range of psychological techniques (Magaletta, Fagan, & Ax,

1998). Due to the demand for psychological services, and the inability to send therapists across state lines for extended periods of time, the legal system began experimenting with tele-health modalities, allowing inmates greater access to specialists (Magaletta, Fagan, & Peyrot, 2000). In one such example, remote "hub-sites" allowed a psychologist to engage an inmate from a different location; offering an intake interview and therapy via a video conference. Trials indicated that many of the inmates who started the tele-health form of therapy, remained in active therapy. Reports also indicated that many inmates found that services through the video conference were at least comparable to, if not better than, treatment they had receive outside of prison in a face-to-face encounters (Magaletta et al., 1998; Magaletta, Fagan, Peyrot, 2000). One of the most interesting findings was that both psychiatrists and psychologists expressed their satisfaction with providing services through the tele-health medium despite having initial reservations.

Bypassing obstacles. For many individuals, obstacles prevent face-to-face therapy; not all of which are often immediately recognized. For example, an individual with social anxiety or depression may avoid face-to-face therapy not because they are unable to afford the services, but rather because they have a fear of being judged and ridiculed (National Institute of Mental Health, 2007). For this reason, they avoid seeing a psychologist face-to-face, however may be inclined to utilize a computer to receive services. For many with disorders that ultimately lead to withdrawal from others, refuge is found on the internet, possibly due to the anonymity that the internet creates (Childress, 2000). For such individuals suffering from an illness like social anxiety, which has been found to be the third most prevalent psychiatric disorder following substance abuse and depression (Bruce & Saeed, 1999), it is believed that the internet would be an optimal

vehicle for transmission due to a recent finding that has shown those socially anxious actively use the internet (Erwin, et al., 2003). Through surveys, Erwin, et al. (2003) found that about one-third of internet respondents reported having received some form of psychotherapy or pharmacotherapy for their social anxiety; however this leaves a large percentage of the sampled 434 participants that are severely socially anxious and have not received any aid. Additionally, those with the most severe social anxiety or withdrawn depression not only spend the most time interacting on the internet, but also endorsed the positive effects of internet use. As socially anxious, and to a lesser degree depressed individuals, endorse the internet and its use coupled with the finding that a majority of these individuals do not attend face-to-face therapy, it is clear that a new method of therapeutic transmission should be created to reach this overlooked population. Although just one example, it demonstrates the power that a computer-based therapeutic transmission method can hold for many who do not attend face-to-face therapy.

Defending against evolution of comorbid difficulties. Another potential benefit of utilizing computers for the treatment of those suffering from mental illnesses is to defend against exacerbation of their current difficulties in order to combat the development of comorbid problems. For example, much research has demonstrated the comorbidity of many disorders including depression with substance abuse disorders (Merikangas et al., 1998; Swendsena & Merikangas, 2000), and anxiety (Merikangas et al., 1998). Anxiety itself including generalized anxiety disorder, obsessive-compulsive disorder, and social anxiety are also associated with numerous disorders including substance abuse (Back & Brady, 2008). As these common mental health problems have been shown to be able to be treated, it is important that psychologists utilize all methods

that they can to reach these individuals before their problems become exacerbated. As research has demonstrated, some disorders can be traced to occurring before others. For example, many forms of anxiety may lead to substance abuse later if the anxiety is gone untreated (Back & Brady, 2008). Since research has also demonstrated that many do not attend face-to-face therapy that may need it, these difficulties are going untreated and will therefore likely develop into comorbid problems that are used as an ineffective coping mechanism. Difficulty arises when some individuals aren't able, or willing, to attend face-to-face therapy for various reasons, while others are attending face-to-face therapy, but may not be focusing on all difficulties in their life during their sessions (e.g., a therapist seeing an individual with many problems may focus on one difficulty at time, at the exclusion of others, however the exclusionary difficulty could evolve into a full disorder). With online methods, an individual may be able to receive additional aid through a computer (e.g., computer intervention program in additional to a face-to-face or video conferencing session) in an attempt to defend against the development of other, possibly more significant comorbid disorders. These programs may also be used as an adjunct to face-to-face for what a patient is unable to attend a face-to-face session.

Help in deciding to go to therapy. For many, attending a face-to-face session without prior therapy experience may seem overwhelming, as the social stigma surrounding therapy may be overpowering. For these individuals, apprehension of services including fear of rejection, fear of judgment (NCI & RWJF, 2001), or a dislike of the situation due to a lack of knowledge about the therapeutic process may impede their ability to receive adequate help for their difficulties. By utilizing a tele-health intervention, such as a computerized retraining program or a video conference between

therapist and patient, an individual who is unsure of therapy can still engage in a therapeutic endeavor. For some, engaging in this manner of therapy, an individual may be able to overcome the stigma and their biases towards therapy and thus begin attending face-to-face sessions. Such is the case for many members of the military who avoid therapy due to a fear of being labeled by other members of the armed forces. However, a study found that even for this highly biased population, computerized methods and video conferencing was accepted and yielded benefits for many of these individuals (Gould, 2010) For many who avoided psychological services due to shyness, or found it hard to openly seek help, these individuals may find the distance of electronic and online therapies a promising start.

Disinhibition and disclosure. A strong criticism against computerized- and online-therapies that has echoed throughout the psychological community has suggested that a patient may not be as truthful during a computer-based interaction as they would in a face-to-face interaction due to little accountability. Although a grounded concern, work by Wallace (1999) countered this claim and instead suggested that people tend to disclose *more* information about themselves to computers and over the internet compared to face-to-face interactions. In the context of online therapies, this disinhibition and disclosure may encourage therapeutic expression and self-reflection, as well as recovery (Suler, 2002). However, more importantly, Levine and colleagues (1989) demonstrated the comfort level for disclosure that occurs through the use of computers is similar when compared to face-to-face interactions. Overall, research has suggested that there was no evidence that the internet methods resulted in underreporting of problems related to a variety of disorders (Emmelkamp, 2005).

Assessments. When psychologists and clients think of online therapy or tele-health, most think of e-mail and video conferencing that involves an active therapy. However, many overlook the potential positive gains that can be made from utilizing assessments through online modalities. Utilizing technology, a psychologist can program and host secure forms and questionnaires to help gather information before a client even arrives for therapy if they decided to attend face-to-face, or use those methods to collect data for those who are unable to attend face-to-face. As assessments have been shown to be an indispensible tool for psychologists, these methods can allow for a plethora of information to be gathered about a client before therapy begins in a time-effective manner. Although a criticism can be declared that online assessments may not be as useful as "live" assessments, Emmelkamp (2005) demonstrated how many assessments that are completed online can be effective at gathering useful information. Additionally, further investigation has found that utilizing a computer-based assessment can yielded information that is of greater quantity and higher quality than clinician-administered assessment (Newman, 2004). Online assessments can be utilized to evaluate a patient's functioning before, during, or after intervention.

Alternatives to the online screening and assessments include structured interviews, a gold standard for psychologists. Although esteemed, such interviews are rarely done in clinical practice due to their time and expense. However, as a possible criticism against the use of computers for online assessment, Favolden and colleagues (2003) investigated differential utility of both the SCID-I-based diagnoses as compared to Web-Based Depression and Anxiety Test diagnoses. Results showed that the web-based measure was reliable with good specificity and sensitivity for most anxiety disorders and

major depression. Expanding these findings for substance abuse patient assessment, a self-report measure of severity and usage hosted online was found to be as valid and reliable as the clinician administered structured interviews (i.e., the Addiction Severity Index; Brodey et al., 2004). By hosting the materials online, the therapist is able to save time, and can use that time to provide others with their services. Although various legal difficulties arise from hosting different measures online, if an agreement were to be struck between therapists and the test-making companies, patients and psychologists may be able to benefit.

   Computer-based programs. One of the newest methods of treatment has come in the form of all-in-one computerized therapeutic programs. These programs have been aimed at delivering intervention for those who are unable to receive face-to-face therapy or are unable to complete a videoconference-based therapy. With so many options available to psychologists, all-in-one computerized programs that can be hosted on the internet and accessed by clients may provide benefits for psychologists and the clients, both financially and temporally. Programs have been targeted at specific types of disorders. For example, internet-based programs have been shown to be efficacious at reducing symptoms in such disorders as panic disorder (Carlbring, et al, 2006; Klein & Richards, 2001; Richards & Alvarenga, 2002), post-traumatic stress disorder (Litz, Williams, Wang, Bryant, & Engel, 2004; Lange, van den Ven, Schrieken, & Emmelkamp, 2001; Lange, et al., 2003), childhood encopresis (Ritterband, et al., 2003), insomnia (Strom, Pettersson, & Andersson, 2004), weight loss (Tate, Wing, & Winett, 2001), smoking cessation (Walters, Wright, & Shegog, 2006), and obsessive compulsive disorders (Tumur, Kaltenthaler, Ferriter, Beverley, Parry, 2007). Computer- and internet-

based interventions and therapies have also been shown to be effective for the recovery from breast cancer (Gustafson et al., 1994), minor stress, and college drinking (Elliott, Carey, & Bolles, 2008).

While many variants of computer therapy programs exist, a great deal of research has been spent developing new methods of treating those with depression and differing forms of anxiety, including social anxiety. Due to depression and anxiety preceding many other types of disorders including substance abuse disorders or additional mood disorders (Kessler et al., 1999), coupled with the finding that many with these disorders do not attend face-to-face therapy, it is important to find novels ways to reach out to this population. Such programs created by Christensen, Griffiths, and Jorn (2004), as well as Cukrowicz and Joiner (2007) have been found to produce promising data indicating that these programs can be used to reduce symptoms of depression, while other work has demonstrated the ability to reduce symptoms of social anxiety (Anderson, Jacobs, & Rothbaum, 2004; Proudfoot, 2004; Murphy, Hirsch, Mathews, Smith, & Clark, 2007; Beard & Amir, 2008). With findings of efficacy for such programs, it is possible that many therapists may be driven to try such interventions by hosting them online if such programs were advocated by other licensed therapists or the APA. Although unclear, research should aim at elucidating the factors that would lead to advocacy or rejection of such computer programs just as research should clarify the factors leading to advocacy or rejection of other tele-health-based methods (e.g., e-mail, video conferencing).

With preliminary evidence came a criticism that indicated the research collected may not be universal, as a predominant portion was being conducted exclusively in the United States. Due to this, Carlbring, Ekelius, and Andersson (2003), as well as Carlbring

et al. (2005) began trials in Europe to investigate computerized therapy efficacy. To this end, both groups studied CBT-based computerized panic disorder programs in Sweden (Carlbring et al., 2003; Carlbring et al., 2005) and demonstrated positive outcomes for the usage of the computerized CBT programs in these European populations. Results were later expanded upon by testing a similar CBT program for panic disorder in Norway; also showing evidence of significant panic disorder reduction in sampled populations (Nordgreen et al., 2010). Although just one disorder was evaluated through a single theoretical orientation, the studies do show promise for generalization of findings from research evaluating the potential benefits of computerized therapies.

   With potential benefits being presented, it is also important to recognize the additional gains associated with such a medium. Such gains include a potential reduced cost of treatment, improved access to psychotherapy, a promotion of engagement in the therapy process, psychoeducation, allowing systematic feedback by the user, promotion of self-monitoring, rehearsal of coping skills, encouraging self-help, storage, analysis, and display of data, built in outcome measures, and an ability to function without fear of fatigue (Wright & Wright, 1997). Coupled with these benefits, as well as the programs being cheaper to design and maintain than medications (Klein & Richards, 2001), dropout rates from randomized control trials of web interventions were low relative to dropout rates from other types of self-help and open access websites suggesting individuals will utilize them and continue to use them to receive gains (Christensen, Griffiths, & Farrer, 2009).

Therapist Considerations

Dehumanization and the therapeutic bond. As with any form of therapy, considerations must be made to ensure quality of care for each client. For the psychologist, many important points are raised such as the amount of alleviation of distress that is capable from asynchronous, or synchronous interventions. For many therapists, there are specific concerns that must be evaluated before one is to make a firm stance on the use of a tele-health intervention. Although not all concerns have been clarified through research, each remains an important point for a psychologist to consider. One of the biggest criticisms against digital modes of therapy is the dehumanizing of the therapeutic environment (Lovejoy et al., 2009). Many opponents of online therapy have claimed that the in-vivo exposure that a patient engages in during face-to-face therapy may not be able to be recreated in a digital setting. Such exposure includes the observing of nonverbal behaviors and cues, including sensory experiences (Jerome & Zaylor, 2000). This is further complicated by the claim that a therapeutic bond cannot be as strong in online therapies as face-to-face. Although seemingly a popular concern, some have found that client-rated alliance scores in online therapy were found to be equal to those found in face-to-face sessions (Cook & Doyle, 2002; Wade, Wolfe, & Pestian, 2004) suggesting that the claim of an insufficient bond being created may not be an appropriate criticism for all forms of computer-based therapies. However, with such few studies directly examining this relationship, therapists should take caution when evaluating the ability for a patient to develop a strong bond with the therapist over electronic means.

Reimbursement procedures. An additional consideration for psychologists is the reimbursement potential of online therapies. As it is commonly accepted that

psychologists work to help the general population, they must also support themselves. A large portion of many psychologists' income may come from insurance reimbursements and compensation. Nickelson (1998) found that Medicare, some Medicaid programs, as well as some private insurers will reimburse for select eligible tele-health services, however, others reported that the extent of this coverage is unknown, as it varies from state to state (Barnett, 2005). Due to this, a psychologist must examine the cost-to-benefit ratio present in utilizing computers in therapy before instituting online practices. For those who are unsure of tele-health due to reimbursement questions, it should be noted that as of January 1, 1999, the Health Care Financing Agency began reimbursing any Medicare-eligible provider for tele-health services rendered to Medicare patients living in 1 of 745 designed "health provider shortage areas" (Nickelson, 1998). Although modest relative to all areas requiring aid, this demonstrates a possible shift for many to begin providing reimbursement for specific services rendered by mental health professionals through the digital medium which may ultimately be a deciding factor for some practitioners. Reports have indicated that the Federal Communications Commission has been pushing telemedicine as one of its top priorities as part of the upcoming national broadband plan which is to be presented to the United States Congress (Lipowicz, 2010, Feb 19). This plan also recommends that federal authorities expand reimbursement for telemedicine practices and other e-health care.

Recently, at the March 2011 State Leadership Conference in Washington DC, Medicare and Medicaid experts discussed reimbursement procedures for APA Practice Organization members. Deborah Baker (2011) explained how psychologists are included on the list of qualified practitioners who may bill Medicare for telemedicine services

under "specific conditions." She further explained that billing codes do include psychotherapy, as well as health and behavior services. As defined by Medicare, technology is limited to interactive audio-video communications, but not email. It also served to elucidate that only some locations are eligible sites in specified geographic areas which generally are rural areas or areas outside of a metropolitan area, however some exceptions occur such as provider's offices, hospitals, skilled nursing facilities, rural health clinics, and federally qualified health clinics. This report also explained that tele-health or telemedicine is not defined for the Medicare program. Due to the federal government not mandating reimbursements, the states have the option to reimburse for Medicaid services should they chose to do so. Currently, 35 states allow for some reimbursement for tele-health services, with Medicaid reimbursements being available in as many as 13 states. In addition to the governmental insurance plans, 12 states have enacted legislation requiring private section insurance companies to pay for tele-health services, however these rates do not require the rates to be on par with face-to-face services. Of the private companies, a 2007 Michigan State University survey indicated that of 130 private payers, Blue Cross/Blue Shield has been the leading payer for these services (Baker, 2011).

In an attempt to consolidate all other information about reimbursement procedures, specific resources have been created for health professionals including the *Telemedicine Reimbursement Handbook* published by the California Telemedicine and eHealth Center (2006), the Centers for Medicare and Medicaid Services' (CMS) CTeL report (2011), and the American Telemedicine Association's (ATA) State Telemedicine Policy Center policy guidebooks (2011).

Training considerations. Training considerations of the psychologists must also be considered. As work by Mora, Nevid, and Chaplin (2008) found, many therapists were not familiar with the current technological innovations and therefore were not prepared to use them. Additionally, no standards of training exist, as most graduate training programs do not provide practicum experiences in the use of online therapies to their trainees, nor are there adequate numbers of licensed psychologists to train and supervise them (Alleman, 2002; Mallen et al., 2005). Due to this, a psychologist must take it upon him or herself to educate themselves in all aspects of online practices before instating their own practice. Although continued education is part of the psychologist's requirements for licensure, many may be opposed to learning a new mode of therapy once they have established a comfortable practice. However, others may welcome the training as a new means to expand their experiences. Regardless of choice, it is recognized that education in the area may be a deciding factor for psychologist endorsement, as without the knowledge of computers and their programs, a therapist would often not feel comfortable utilizing such methods.

Licensure and jurisdiction. As with any endeavor, legal issues must be considered, such as the issues of licensure and jurisdiction of a practicing clinical psychologist. Due to the American Psychological Association not yet taking a firm stance on tele-health licensure, psychologists are free to engage in any form of tele-health with little ethical concerns, other than the quality of care of their clients. Due to this, there has been a scarcity of clear guidelines defining clinical competency and licensure requirements for clinicians practicing across states, or across countries (Lovejoy et al., 2009). The question arises that if a client and therapist reside in a different jurisdiction by

which professional practice laws differ, which must the therapist abide by (Nickelson, 2008)? Additionally, state mandated reporting laws may also differ by state (Fisher & Fried, 2003). Although lacking clarity, Koocher and Morray (2000) found that approximately half of the state Attorney Generals claimed jurisdictional authority for suits that arose when clients residing within their jurisdiction are treated by out-of-state psychologists (Lovejoy et al., 2009). In an effort to clarify vague boundaries, Maheu, Pulier, Wilhelm, McMenamin, and Brown-Connonlly (2004), in their book *The Mental Health Professional and the New Technologies: A Handbook for Practice Today,* suggested that a licensed mental health professional needs to be licensed in the state of residence of the client or patient. This suggests that in theory, a mental health professional could be legally justified to provide tele-health services if they were licensed in all states they were to be practicing. For example, if a therapist wanted to see people in New York and California, but they themselves were in Florida, they would have to get licensed in all three states. More recently, on February 14, 2011, the West Virginia Legislature (2011) introduced a bill to specify licensure requirements for tele-health. The bill reads, "A person engaged in the practice of telepsychology is considered to be engaged in the practice of psychology within this state and is subject to the licensure requirements of this article." Due to these difficulties, some psychologists may be wary to attempt an online relationship due to fear of legal recourse.

  Confidentiality. As it would be unethical and amoral to conduct any form of online-based therapy without safety and confidentiality secured, many therapists have been left with feelings of confusion over whether the medium is acceptable to retain privacy. Although HIPPA compliance should be upheld, it is difficult for a psychologist

to verify a patient's true age and identity through cyberspace (Alleman, 2002). However, this can be averted by having an initial face-to-face meeting, if possible. For security to chats or video conferences, password protected and encrypted programs now exist to provide security for sessions. For example, Skype, a popular video and audio conferencing program, now utilizes a 256 bit encryption key that is unbreakable (Shaw, 2006). This encryption means that even if someone were to be able to access the data, it would not be able to be decrypted so that someone could access the original information or chat. Depending on the medium of electronic correspondences, hacking e-mail accounts, Trojan horses, and other viruses may all provide issues with confidentiality. It is a psychologist's duty to make patients aware of these issues and take measure to protect against them. Although difficult to protect, there are many steps that psychologists can take to ensure such security.

In order to practice in a safe, ethical, and confidentially manner, it is important for the therapist to understand the technology and limitations of both the software and hardware they are utilizing. Additionally, a strong security program should be present that can protect against hacking and viruses. McAfee Antivirus, Microsoft Security Essentials, Norton Antivirus, and ESET Nod32 are four of the most powerful antivirus programs on the market and could be utilized by any practicing mental health professional to elevate security. Additionally, programs such as Malwarebytes can be used to provide further protection to protect against cydoor programs and adware which may make a computer vulnerable to attack. While weaknesses may develop, new companies are being created to allow for secure tele-health correspondences. For example, as companies in the past have provided secure telephone conversations by each

member calling into a secure server; tele-health providers are now creating new means for computers to "dial in" to a primary, secure, encrypted server so that each member can join without worry of a confidentiality breach.

Diversity issues. For some, willingness to accept and utilize tele-health interventions may be driven by more clinically-based factors, such as issues of diversity. As many therapists recognize, each client presents differently with unique challenges. Due to this, diversity is monumental importance to a psychologist regardless of therapeutic medium, as different races, genders, and socioeconomic factors can influence the treatment process and outcome. This too applies to online therapies, as some iteration of therapies may be better suited for one type of individual while not being applicable to another. As previously discussed, there has been little research conducted on cultural differences in computer-based interventions, with the primary published work being that of Carlbring and Andersson (e.g., Carlbring et al., 2003; Carlbring et al., 2005; Nordgreen et al., 2010) focusing on the use of computers being used in the treatment of panic disorder in individuals in Sweden and Norway. With these notable exceptions, the majority of research has focused on participants in the United States. Although it could be stated that there are large diversity differences in the United States, previous research has not examined large cultural differences in the United States beyond classifications of Caucasian versus African American and Asian Americans. While the differences may be present, no such study has specifically examined these factors. For this reason, psychologists may be influenced to not utilize computers in their practices due to a lack of solid research on the effects of various demographic factors on treatment.

Gender differences. Although not expansive, some work has been conducted to examine the effects of age and gender on online and internet attitudes which may serve to directly influence how effective an internet-based intervention may be. For example, Whitley (1998) conducted a Meta-analysis of studies of gender differences in computer-related attitudes and behavior usage among American and Canadian participants and found that men and boys exhibited greater gender-role stereotypes and reported higher computer self-efficacy, as well as more positive affect about computers than women and girls. This perceived self-efficacy, as well as higher positive affect related to computer use could potentially have an impact on therapy outcome, as if women do not perceive the usage of computers in therapy as beneficial as men, then gender biases may emerge in therapeutic gain. Although an interesting question, little research has directly examined the influence of gender differences on their findings.

Age differences. Coupled with gender, age is another primary diversity concern that is commonly addressed due to potential age-related stereotypes of computer attitude and expertise. As nearly all studies conducted on online therapies and internet-based intervention programs used either a college-aged or older population and found positive outcomes, it can be inferred that based on preliminary evidence, such methods are likely efficacious for this age group. Additionally, while some elderly may not be appropriate candidates for online therapy due to a lack of computer knowledge (Mallen et al., 2005), available computer training seminars have increased the amount of elderly individuals utilizing computers and the internet in their everyday lives. Due to such trainings and interest, research has found that Internet use among persons over 70 years of age has grown faster than any other demographic (Jones & Fox, 2009). Regardless of the age, if

an internet-based intervention is to be utilized, a thorough assessment of computer knowledge and ability should be accessed before onset of computer-based treatment.

Children and teenagers. For some psychologists, a large portion of their client base may be children or teenagers. It is important to recognize the potential benefits, as well as the risks related to the population in question. As multiple surveys have indicated, around 25% of young people have used the internet as a source of mental health information (Gould et al., 2002; Rideout, 2001), and a large percentage of teenagers aged 15-24 have looked up information on the internet related to treatment of depression (23%), violent behavior and violence (23%), as well as problems with drugs and alcohol (23%; Rideout, 2001). These surveys also suggest that kids and teenagers enjoy the internet due to its 24/7 accessibilities. From a child's perspective, surveys have found that children's attitudes are generally positive towards computers. Interestingly, McKenney and Voogt (2010) found that children from lower socio-economic neighborhoods had more positive attitudes towards computers and used computers slightly more than children from middle class homes. As lower SES children are often not able to afford, find time, or have transportation which may hinder face-to-face therapy, it is possible that these children may benefit most from an online therapy system; as computers may be available to them.

With this knowledge, it is also important to recognize that many children and teenagers do not seek active therapy due to a fear or stigma of face-to-face interactions; however, having therapy online, in various forms, may reduce this stress, as they are not forced to be in a room with a psychologist who in their mind may command the power (Calam et al., 2000). Research has suggested that the use of computers in child therapy

may have several advantages and thus may be an effective vehicle for intervention. For example, Calam and colleagues (2000) found that children enjoy the novelty and appeal of computers, which offers the opportunity to take the focus of interaction off the one-on-one relationship, thus reducing the stress of the child. Calam et al (2000) used this logic to develop a computer-based interview format that is controlled and structured to create a virtual environment capable of providing adequate interviews and interventions for children. This logic was also utilized in a study examining the feasibility, acceptability, and effects of Camp Cope-A-Lot (CCAL), a computer-assisted cognitive-behavioral therapy for anxiety in children. The CCAL was, in essence, a computerized version of the Coping Cat protocol for childhood anxiety. Overall, this study found support for feasibility, acceptability, and beneficial effects of the CCAL (Khanna & Kendall, 2010) suggesting that computerized methods aside from webcam-based therapy may also be beneficial for children.

Client Considerations

When working in an online environment, it is important to not only recognize psychologist's factors that could influence outcome, but client factors as well. The variability of the clients themselves, including possible medical conditions, may determine how good of a fit each client is to engage in online-based therapies. To this end, research has identified several important factors that could determine one's suitability for online therapies. In regards to online therapy, "suitability" refers to a variety of factors including the person's preference for online therapy, how suggestible the person is within specific communication modalities, the client's skills with

communicating within that modality, and the potential therapeutic aspects of that
modality for the client (Suler, 2001).

      Computer experience. One of the first and most important pieces of information
that a therapist must gather from a potential online client is the person's overall computer
skills, knowledge, and access to the internet (Suler, 2001). Research has demonstrated
that experience of using the internet and computers may be a determining factor of
attitudes for some towards e-therapy (Skinner & Latchford, 2006). As Suler (2001)
explains, if a person seems to be able to effectively communicate within the setting of
choice, then no further assessment may be necessary to begin online therapy. However,
hardware, software, and materials including possible web cameras and programs must be
at the person's disposal and in working order to pursue such a method of treatment. Some
questions that a psychologist may wish to assess before beginning an online relationship
include: whether the person demonstrates adequate knowledge of the computer system,
whether the person is motivated and capable to experiment with the new communication
techniques, whether the person's computer system is compatible with that of the
therapists, whether the internet connection available to the client is adequate for specific
types of methods (e.g., video conferencing), whether the client has a private access to the
internet, and if there are complications, does the client have viable alternatives (Suler,
2001)? These considerations have led the American Psychiatric Association to issue a
position statement which states that distance therapy most likely works best when the
initial contact is face-to-face (Epstein, 2011) to provide a full analysis and intake with the
individual before allowing them to engage in distance therapy. Once this initial session is
completed, a psychologist can be more comfortable with utilizing online services with a

particular client without a fear that they do not have all necessary information prior to beginning.

Online literacy and reality testing. Although some clients may hold no reservations towards an online mode of therapeutic transmission, others may hold a preference for reading information, writing information, or visibly seeing a therapist while engaging in online therapy (e.g., video conferencing) which all could have significant impacts on outcomes (Suler, 2001). For each mode of transmission, it is important to evaluate the necessary skills and preferences of the client. For example, if a psychologist is to use text-based communication (i.e., e-mail, chat) then it is paramount that the therapist assesses the client's suitability for such forms of communication. This is especially important for some clients, as 14% of the United States population is "below basic health literacy" (Kutner et al., 2006) for reading; however, some online programs or instructions to set up a video conference may require reading which would make them inaccessible to such individuals. Questions assessing whether a client is able to accurately read the computer screen, able to type messages back, or is in the right mindset to accurately read, reflect, and respond to messages must be considered. Such is the case of a client suffering from a delusional disorder or active psychosis preventing them from accurately reading or reflecting upon information presented due to poor reality testing (Suler, 2001). In short, for these individuals online therapy may not be appropriate (Alleman, 2002).

Crisis situations. Many have criticized the online therapy community for an "inability" to regulate crisis situations. However, for such a cited reason for the refusal to engage in online practices, little evidence has been presented to demonstrate that crisis

situations are considerably more difficult for online modalities. To demonstrate this point, Levine and colleagues (1989) were able to assess the ability for computerized modalities to detect and deter a suicide attempt when compared to treatment as usual. Researchers found that computer-based measures are better predictors of suicidal feelings than even clinical interviews. More recently, Fenichel et al. (2002) concluded that there is *no evidence* suggesting that online therapy cannot be conducted with clients in crisis situations, nor is there any more difficulty in locating a client in online therapy as compared to telephone crises. As it is possible to collect all information prior to beginning therapy, a psychologist may be able to gather all information including where a person is located, crisis contacts for that area, contactable family members and friends who can be reached in case of emergency, and other important information. Although some may criticize that personal information can be lied about or faked making the ability to find that person difficult as compared to using face-to-face methods, this criticism is not founded as individuals can fill in fraudulent information at intake for face-to-face therapies as easily as they can for online therapy. It is a psychologists' duty to ensure the safety of his or her patients and this would include in the online environment, regardless of geographical differences. For such individuals who may be prone to crisis situations, online therapy may not be appropriate, however for others, a supportive conversations or referral to appropriate help resources have been shown to prevent hasty decisions by highly distressed, desperate people who were contemplating violence or suicide (Barak, 2007) demonstrating that if conducted under the right circumstances with proper methods, crisis situations can be handled in an appropriate, safe manner in an online environment.

Gateways to face-to-face. For those who do not wish to seek face-to-face therapy, online therapy may be a viable option. However, once a patient engages in online therapy, it is possible that simply engaging in therapy will alter their biases and provide a motivation to seek out face-to-face psychologists. As many have claimed, for a large percentage of individuals who are reluctant to begin in-person there are numerous reasons for their reluctance including: Stigma, a fear of judgment, their anxiety of addressing emotional issues, and physical inconveniences of scheduling. However, these difficulties may be alleviated by online practices. For these individuals, the convenience and perceived anonymity associated with computer-mediated communications may then facilitate their contacting and seeing an "in-person" therapist (Childress, 2000).

Best fit/Eligibility/ Suitability. With so many considerations, it is important for psychologists to be able to effectively assess a client's eligibility for online services. Although not without problems, researchers have begun developing scales to measure one's suitability for such therapy. Murphy, Coover, and Owen (1989) developed the Computer Self-Efficacy Scale in order to measure perceptions of capability regarding specific computer-related knowledge and skills. As computer self-efficacy has been found to be a possible determinant of positive outcome (Weber, Schneider, Ornung, Wetterline, & Fritze, 2008), it is important to measure this, as it may be the deciding factor in a therapist deciding whether the person would be a good match. One criticism of such an approach is that those who suffer from more severe pathology may not be appropriate candidates for such a measure. Due to this criticism, the Groningen Computer Attitude Scale (GCAS) was created and assessed with acute psychiatric inpatients. Overall, this measure was found to be a suitable instrument for measuring computer

attitudes in acute psychiatric inpatients. From these findings, the researchers suggest that the GCAS should be used for identifying patients with negative attitudes towards computers in order to ensure reliability and validity in computerized methods including assessments and therapies (Weber et al., 2008). Results from such studies suggest that instruments to assess one's eligibility for online services can be digitized and presented over a computer or conducted over a telephone. Such instruments include the Structured Clinical Interview for the DSM-IV (SCID; First, Spitzer, Gibbon, & Williams, 2002), the Beck Depression Inventory (Beck, Steer, & Brown, 1996), and other more specific interviews to assess specific pathology.

Acceptance. As with the therapists, it is important to investigate the willingness and overall acceptance of the tele-health modalities when discussing the clients. Although little direct work has been completed, a study by Richardson, Frueh, Grubaugh, Egede, and Elhai (2009) that examined 148 articles published since 2003 found that, "high levels of satisfaction and acceptance with tele-mental health have been consistently demonstrated among patients across a variety of clinical populations and for a broad range of services." While little other work has been completed on the direct analysis of client perceptions of technology with mental health services, work by Richardson et al. (2009) has provided evidence from a variety of research articles suggesting that many clients may be accepting of varying types of computer-based services.

Face-to-Face Versus Online and Computerized Therapies and Interventions

While many criticisms of online therapy exist, many psychologists can simplify dispute to a simple question: Can online therapy be as effective as face-to-face therapy? This question has been difficult to answer due to the overwhelming amount of therapies

and intervention types available to psychologists. Additionally, few studies directly examine the differences between face-to-face and tele-health therapies. However, research has begun to demonstrate that usage of many of these forms of therapy (e.g., CBT, dynamic, system approaches) may be able to be translated into the virtual domain for some disorders. For example, "Beating the Blues," a treatment program for patients in general practice for those suffering from anxiety, depression or mixed anxiety/depression was compared to care as usual (Proudfood et al., 2003). Surprisingly, those who underwent the "Beating the Blues" program improved significantly more on anxiety and depression scales than did patients who received the care as usual. Another study demonstrated that the use of computer-guided therapy (with minimal intervention from clinicians) in anxiety disordered patients and moderately depressed patients in a London clinic were comparable to those achieved with face-to-face cognitive-behavioral therapy (Gega, Marks, & Mataix-Cols, 2004). In some cases, when the amount of anxiety, depression, or stress are low, online therapies that consists of simple CBT methods may be more cost effective and beneficial for a patient than the time and effort spent seeing a therapist face-to-face. To demonstrate evidence for more severe pathology, a four year study was carried out to compare Vietnam veterans who suffered anger management difficulties as a symptom of PTSD. The study compared anger management face-to-face therapy to anger management therapy conducted over a video link which was presented on a computer (Gould, 2010). Findings indicated that both methods were equally effective at reducing anger symptoms in the combat veterans with PTSD suggesting the possible comparability of face-to-face and online therapies for PTSD symptoms.

Perhaps the best results of efficacy were obtained by Barak, Hen, Boniel-Nissim, and Shapira (2008) who conducted a meta-analysis of 92 studies consisting of more than 10,000 participants who used some form of electronically delivered therapy. Overall, it was found that the electronic modalities demonstrated a .53 effect size, an effect size comparable to the average effect size for traditional face-to-face therapy. Although it is difficult to determine if the computer-based therapies are as effective as face-to-face therapies due to a lack of research directly examining the two; preliminary evidence suggests that the two are similar in effect size and therefore efficacy.

Working alliance. Even though some studies have demonstrated evidence of comparable efficacy for online programs, a common criticism still exists that questions the ability of such methods to create a working alliance. Some may believe that online techniques may not allow for as strong of a working alliance that may be created in a face-to-face relationship. With the working alliance being one of the most important components of a client's ability to recover, it is important that this aspect be strong between the therapist and the client regardless of therapeutic medium. With this question being proposed, Cook and Doyle (2002) used the Working Alliance Inventory with an online sample and found that the working alliance can be adequately established in online therapies. Additionally, no significant differences were found with respect to modality of communication, or client presenting problem. Complimenting this study, a 2009 review collaboration at the University of Southern Indiana and the University of Manchester in England concluded that "e-therapists" and their clients can form "real," and "meaningful therapeutic alliances" (Epstein, 2011). Epstein (2011) reported that this review also

concluded that many traditional face-to-face therapists underestimate the "warmth and depth" of the connections that are formed through tele-health modes of therapy.

Orientations

   Computerized cognitive-behavioral treatments. An often overlooked construct, one's theoretical orientation may serve to dictate whether a psychologist is accepting or rejecting of tele-health services due to some orientations being more applicable for translation to digital mediums. Research has demonstrated that computer-based and internet-based methods of communication and intervention have demonstrated efficacy for a variety of orientations, with cognitive-behavioral (CBT) therapies being the most common utilized (see Andersson et al., 2005). CBT methods have been used in both synchronous designs (e.g., video conferencing between the psychologist and the patient) and asynchronous (e.g., e-mail correspondences), demonstrating the versatility of some orientation techniques for tele-health purposes. Although predominantly used for the treatment of anxiety and depression, online CBT methods have been found to be effective for a range of other disorders including weight loss (Tate, Wing, & Winett, 2001), and obsessive compulsive disorder (Tumur et al., 2007). A systematic review by Kaltenthaler, Parry, and Beverley (2004) found that when computerized cognitive-behavioral therapy was compared to therapist led cognitive-behavioral therapy; computerized cognitive-behavior techniques were shown to be useful in the treatment of anxiety disorders, depressive symptoms, and phobias.

   Other orientations. With cognitive-behavioral methods being the most commonly studied orientation, little research could be collected to support the efficacy of other forms of therapy. Although scarce, cognitive models of internet-based intervention

have shown promise for treatment of anxiety, phobias, and depression (Wells & Papageorgiou, 2001; Andersson et al., 2005). Additionally, online support group models have been shown to hold efficacy for multiple members in one "session" (King, Engi, & Poulos, 1998). Despite these few notable papers examining orientations, significantly more research is needed in the area of other orientations including behavioral, dynamic, analytic, and existential therapies. For example, a dynamically-oriented therapist may focus more on the nonverbal, or unconscious, behaviors coupled with the use of silence (Ekman & Friesen, 1968; Gabbard, 2007) to a greater extent than would a cognitive therapist, and for this reason may find a computer-based modality not as appropriate for therapy.

Ethical Considerations

Recently, 2011 APA President Melba Vasquez had stated that one of her initiatives is to create a unified Tele-health guidebook of ethical principles. However, as this has yet to be released, other organizations have begun to disseminate their own versions of tele-health ethics including: the American Counseling Association's Ethic Standards for Internet Online Counseling (Elleven & Allen, 2004), the International Society of Mental Health Online's Principles for the Online Provision of Mental health Services, the National Board for Certified Counselors' Practice of Internet Counseling (Elleven & Allen, 2004), the American Telemedicine Association's guidelines (Grady, Myers, & Nelson, 2009), and the American Academy of Child and Adolescent Psychiatry's child telepsychiatry practice parameters (Myers & Cain, 2008). A compiled handbook was more recently published by the Ohio Psychological Association's Communications & Technology Committee. Their "Telepsychology Guidelines" outlines

the practice of a psychologist who wishes to engage in online services (Dielman et al, 2010), providing definitions, and helpful information for those who wish to engage in online services. Although there are many guidebooks to choose from, the topics generally coincide and center on common issues of confidentiality, validity of data delivered via computerized methods, misuse of computer applications, billing, privacy, and credentialing (Bloom, 1998). Due to significant overlap, a psychologist who is interested in online therapies would be best suited to not only follow guidelines of face-to-face therapy and HIPAA as created by the American Psychological Association, but also educate themselves on the intricacies of the many online manuals until the unified APA guidebook is officially released.

Future Outlook

For all psychologists, the future of the profession is of great importance. With tele-health being a common topic post on psychological listsurvs (e.g., Division 12 listsurv), one is able to see the heated debates that the topic creates. While some state that the use of tele-health is a "fad" that will fade over time leaving only traditional face-to-face therapies, others see tele-health as the future of psychology. Compounding research, as well as the American Psychological Association working on a unified handbook would suggest that tele-health will continue to grow and expand. Coupled with this, several large organizations have begun to incorporate technology into their mental health services. For example, the Veterans Affairs Department has become a large proponent of tele-health and has proposed to double its tele-health investment over the next two years (Lipowicz, 2010, Feb 17). Additionally, federal and state government and medical officials have officially announced the approval of the California Telehealth Network

(CTN); the US' largest effort to provide broadband-based specialty care in medically underserved rural and urban areas (Maheu, 2011a). This project will serve to connect more than 800 California-based clinics and hospitals to a statewide network for healthcare by 2013. Although initially to be used for medical purposes, the network can, and potentially will, be used for mental health services in the near future. To facilitate transmission of information, AT&T has introduced the AT&T ForHealthSM, a service which will provide audio and video links that can replace the need for an in-person visit to health professionals (Maheu, 2011b). For those unsure of ethical compliance, as well as security, several companies have begun sprouting up. Recently, a videoconferencing company called Iconic Health's HomePsych program (http://iconichealth.com) has claimed to be HIPAA compliant including reliability and security data. As confidentiality and security are two major concerns for mental health professionals, websites like these may serve to convince many who were worried about confidentiality to change their perceptions.

Current Stance of Psychologists

Few studies have directly measured psychologists' attitudes towards tele-health or computerized methods of psychological services. However, in the few areas where tele-health is being consistently applied (e.g., army, prison systems), psychologists seem to embrace the methods. For example, a study by Magaletta, Fagan, and Ax (1998) found that participating psychiatrists and psychologists who utilized video conferencing expressed their satisfaction with the medium. Work by Wangberg, Gammon, and Spitznogle (2007) suggested that psychologist's attitudes around the world may be shifting, as the mean reported attitude towards e-therapy of Norwegian psychologists was

neutral with only 3% of psychologists feeling that use of online methods is unacceptable. These findings suggest that online therapies may be becoming not only more common, but therapists attitudes related to usage may be shifting as well (Wangberg et al., 2007). However, these findings have been contrasted with work by Mora, Nevid, and Chaplin (2008) who found that a majority of 138 psychologists from New York provided low levels of endorsement of internet-based services. Due to this discrepancy, it is not known whether differences are geographical or based on therapist's biases, as Mora and colleagues found that the majority of psychologists questioned stated that they not only did not have adequate training in the use of online services, but did not wish to receive any. Regardless, some estimate that the use of computer and the internet for delivery of services will increase as the technology continues to become more universally available and regularly used (VandenBos & Williams, 2000). Due to this, in February 2011, the APA Council of Representatives approved the creation of the Telepsychology Task Force, co-chaired by Linda Campbell and Fred Millan. The job of the task force is to aid in several aspects of the tele-health debate including addressing the issue of inter-jurisdictional practice/licensure mobility (DeLeon, 2011). Although unclear, this universal stance from the governing body may serve to sway some to try the newer modes of therapeutic transmission.

Current Study

Although controversial, there is an increasing recognition within the professional community that internet based programs can have therapeutic value (Chang & Yeh, 2003; Litz et al., 2004; Taylor & Luce, 2003). Some even believe that stand-alone internet-based interventions can yield positive outcomes (Change & Yeh, 2003; Cook & Doyle,

2002). Although no consensus has been met, numerous self-help model websites have been gaining popularity including: http://masteringstress.com, http://copewithlife.com, http://www.egetgoing.com, and http://nicotinefreedom.com (Maheu, 2001) and have reported to hold some efficacy (Emmelkamp, 2005). While it is unclear whether psychologists would utilize such services as internet-based programs and therapy, it is clear that many individuals utilize mental health information sites on the internet. Building from this, some researchers have shifted their attention to creating and testing different forms of psychological interventions as conducted over the internet. Overall it appears as though online therapy may be best for patient in outpatient settings and for those who are not acutely psychotic, borderline personality disordered, delusional, or require hospitalization due to suicidal tendencies (Stofle, 2001). Additionally, an important factor in online therapy is for the psychologists to seek online therapy training to ensure quality of treatment (Anthony & Goss, 2003; Hsiung, 2003). Due to so many variables being present in determining one's attitude towards online therapy, it is easy to see why there has been such a divide among clinicians. However, for research and future work, as well as development of appropriate methods for online therapy and trainings, it is important to recognize whether the psychologists would be willing to utilize such methods. Due to the lack of literature on the attitudes of therapists in the psychological profession, the aim of the current study is to elucidate the attitudes of current psychologists, and future psychologists. The survey utilized will help clarify whether therapists are accepting of computerized and online services for specific disorders and conditions, as well as what they would be willing to do through an online medium. However, it is possible that many practitioners are apprehensive about embracing a mode

of therapy that has been so little studied (Rabasca, 2000). For this reason, the current study will also evaluate potential reasons for why one may not endorse online therapies. With the only studies of psychologist attitudes towards online therapy being limited to potentially biased populations (e.g., only a sample of New York therapists), the current study seeks to extend this by including Division 12 members, as well as participants from all clinical psychology training programs in the United States; both student and licensed psychologist. It is critical that psychologists develop a consensus regarding how technologies should be applied, as it will undoubtedly impact the practice of, research, and training of psychological services (Dielman et al, 2010). It is the goal of the current study to help create a unified consensus of psychologist endorsement of computerized and online therapies and interventions. While research has begun looking into whether the therapies and interventions work, the biggest question is overlooked; do psychologists even want computerized interventions?

As there have been numerous factors relating to computerized therapies and intervention, several hypotheses have been conceptualized to examine numerous avenues of psychological services.

Hypothesis 1. Although little support for use or disuse can be gathered, with the current shift in which research has provided preliminary evidence for the support of tele-health methods, it is believed that there will be an increase in acceptance among both current and future psychologists than was found by Mora et al. in 2008. It is estimated that there will be approximately a 50% general acceptance from those around the United States, however a greater percentage will endorse the computerized methods as an

adjunct to face-to-face therapy rather than a standalone; agreeing with findings found by Wangberg et al. (2007).

Hypothesis 2. It is estimated that the younger population (future therapists who are currently in their doctoral training) will endorse higher levels of computer- and internet-based therapies than current clinicians. As Mora and colleagues found (2008), there may be a bias among current clinicians in which they may not wish to receive training in these services. Therefore it may not be that they think the services are ineffective, but rather that they are unable to effectively utilize them.

Hypothesis 3. It is hypothesized that there will be large difference in psychologist endorsement as determined by theoretical orientation. Mora and colleagues (2008), as well as work by Wangberg et al. (2007) found that cognitively and cognitive-behaviorally orientated therapists were significantly more likely to endorse computerized and internet-based services than were psychodynamically orientated psychologists. These trends are hypothesized to also be present in the current study. As the current study will also include other common theoretical orientation, hypothesis 3 predicts that cognitive-behavioral, cognitive, behavioral, and systems orientations will all be more accepting than would be dynamic/analytic or existential.

Chapter III: Methods

Measure

Mental health practitioner's attitudes toward computer-based interventions survey. The *Mental Health Practitioners' Attitudes Toward Computer-Based Interventions* survey was created to examine attitudes towards various aspects of computer- and online-based therapies and interventions. Each survey began with a short

description of the purpose of the study, as well as a demographics section. The survey asked participants such questions as whether they would endorse online or computer therapies, if they would endorse usage for specific disorders, and whether they would utilize such methods as an adjunct to face-to-face therapy if given the opportunity. The survey also investigated attitudes of disapproval; questioning their rationale for such a stance. The most frequently cited reasons for rejection gathered from previous research (e.g., Barak, 2003; Suler, 2000; Emmelkamp, 2005) were utilized as answer choices. All information was kept confidential and participation remained anonymous. For the survey, the following definitions were used: Computer-based interventions refers to any type of computer intervention including both therapist involved and standalone computer-based program or intervention; Tele-health and Internet-Based Intervention refer specifically to online methods in which a psychologist is interacting with a client through various means including web camera, e-mail systems, and chat rooms; Standalone computer-based program specifically refers to a standalone intervention program that functions without involvement from a psychologist (e.g., cognitive retraining computer programs, exposure computer programs). Please refer to Appendix A for the complete *Mental Health Practitioners' Attitudes Towards Computer-Based Interventions* survey.

The survey was hosted in a digitized form (approved by the Nova Southeastern University's Institutional Review Board) on the internet-based survey site, LimeSurvey (www.limesurvey.com). LimeSurvey was chosen due to its ability to ensure confidentiality through such security as masking IP addresses. Researchers did not require any additional personal email addresses or information other than the key demographic information presented in the survey.

The survey primarily consisted of fill-in-the-blank values and 5 point "bubble answers" to each question. Participants are to use their computer mouse, or use their keyboard to select their responses. Once the survey is completed, participants will encounter a screen informing them that they have reached the end of the study. They will then be presented with a "Submit" button which will log the data.

Demographics. Each survey incorporated a portion to obtain key demographic and professional information from each individual. For the survey, information regarding age, sex, location of practice or schooling (state), theoretical orientation, current licensure status or academic status, years of face-to-face experience, and self-perceived computer expertise were collected. Theoretical orientation options integrated some of the most commonly identified theoretical orientations as reported by Cook, Biyanova, Elhai, and Schnurr (2010). Information collected aided in analysis of differences as well as moderation of key variables.

Email and survey construction. Due to a historically low response rate to internet-based surveys (Couper, 2000), with a recorded 25-30% response rate (Kittleson, 1997), research have sought to identify variables and techniques that can be used to increase completion. Such techniques include creating personalized emails to invite each participant to participate, as well as providing follow-up reminder emails (Cook, Heath, & Thompson, 2000). Kittleson (1997) found that sending follow-up emails can serve to double the response rate for email surveys. Accordingly, emails sent to each licensed psychologist or clinical training director was personalized. Data was collected from January 2011 through May 2011. Initial emails went out within the first week of January, with a follow-up, reminder email being sent out two months after initial contact.

Additionally, the questions themselves on the survey were worded to provide maximum clarity and brevity and were tested through a pilot study conducted with 158 participants from Nova Southeastern University in Fort Lauderdale, Florida.

Participants

Nonacademic licensed psychologists. The participants were gathered from across the United States and included academic and nonacademic licensed doctoral level clinical psychologists, as well as current doctoral level clinical psychology students (Ph.D. and Psy.D. doctoral candidates including first, second, third, and fourth year students, as well as interns, and postdoctoral students). A list of licensed nonacademic doctoral level clinical psychologists was compiled from the American Psychological Association's Division 12 (Clinical Psychologist) division webpage. From this webpage, a total of 3506 listed clinical psychologists were invited. A standardized email that included personalized invitation was sent to each registered APA Division 12 member inviting them to participate in the study. Each email provided a brief explanation of the study, asked if they were interested in partaking in the study, and contained a weblink to the survey. Should a participant wish to partake in the study, they could click the link in the email to be taken to a "Participant Sheet" page. This sheet outlined the purpose, risks, and goals of the study, as well as contact information for Dr. Barry Nierenberg (academic advisor) and the NSU IRB should a participant have any questions. This page also conveyed that the survey will likely take no longer than 10-15 minutes to complete. A final clause stated that if a participant agrees to the conditions, they can click the "Next" button to consent and begin the survey; however they understand that they are free to leave the study at any time if they feel uncomfortable.

Academic current and future psychologists. In order to gather information from licensed and future psychologists from universities, a standardized email, similar to that sent to Division 12 members, was sent to the clinical training directors of each American Psychological Association accredited university in the United States (*N*=210). A complete list was collected from the Council of University Directors of Clinical Psychology (CUDCP) website. As with the Division 12 email, the invitation were personalized to each director and provided a brief explanation of the study, while also asking if each clinical training director would be willing to verbally or electronically convey the objectives, methods, and intent of the study to their students and faculty. The email also contained a pre-written paragraph that each training director was encouraged to send to the students and faculty of their department. In an attempt to avoid coercion, each clinical training director was asked to stress that students and faculty that they are free to not participate without fear of repercussions. Other information contained was identical to that sent to Division 12 members.

In addition to predetermined criteria (E.g., licensed psychologist, or doctoral level clinical psychology student), all participants were to be of at least 18 years of age and speak English as their primary language to participate in the study.

Final sample. Overall, a total of 308 doctoral level students (Mean Age= 27.66, *SD* = 5.9) were gathered for the sample comprised of 65 males (21.1%) and 243 females (78.9%) with a mean face-to-face experience of 2.7 years (*SD* = 2.4). Please refer to Figure 2 for a graphical representation of age distribution, and Figure 3 for a graphical representation of face-to-face experience distribution. When broken down by academic level, there were 61 first year graduate students (19.8%), 59 second year graduate

Figure 2. Students (1, 2, 3, 4, Intern, PostDoc) Ages in Years

Mean = 27.66
Std. Dev. = 5.928
N = 308
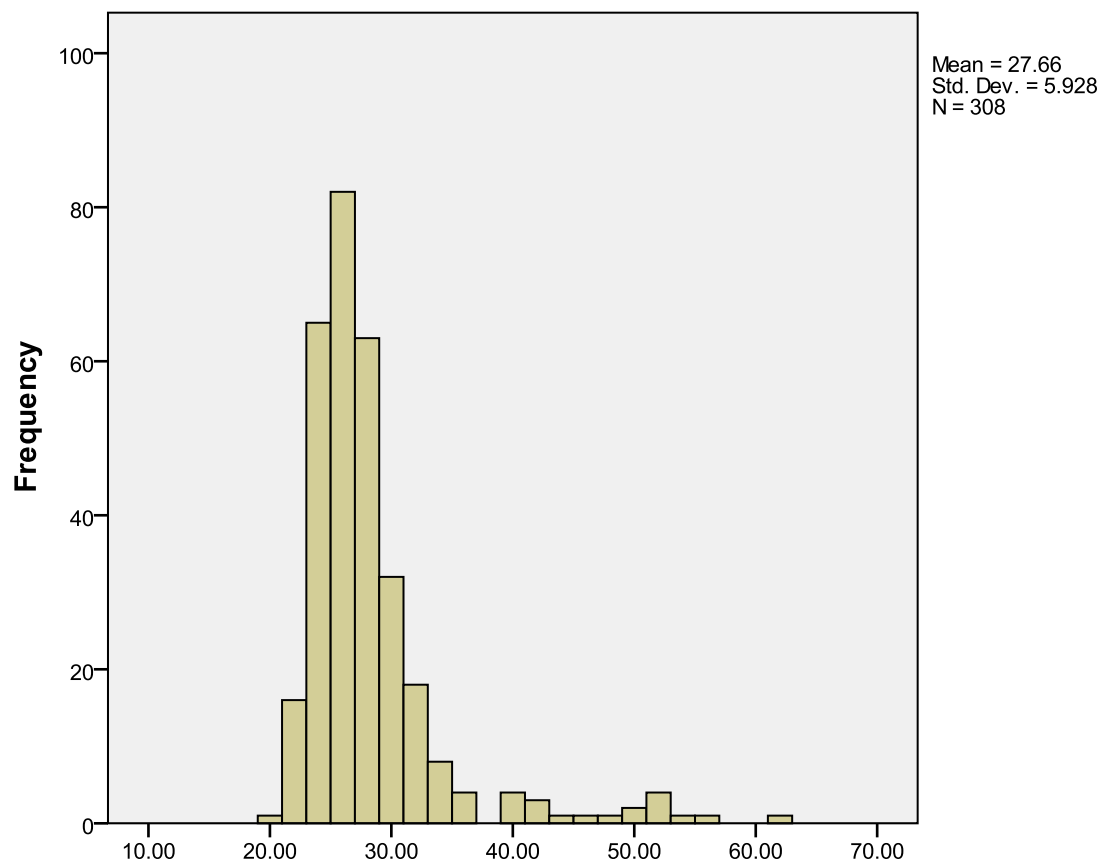
Figure 3. Students' Years of Face-to-Face Clinical Experience

Mean = 2.75
Std. Dev. = 2.422
N = 307
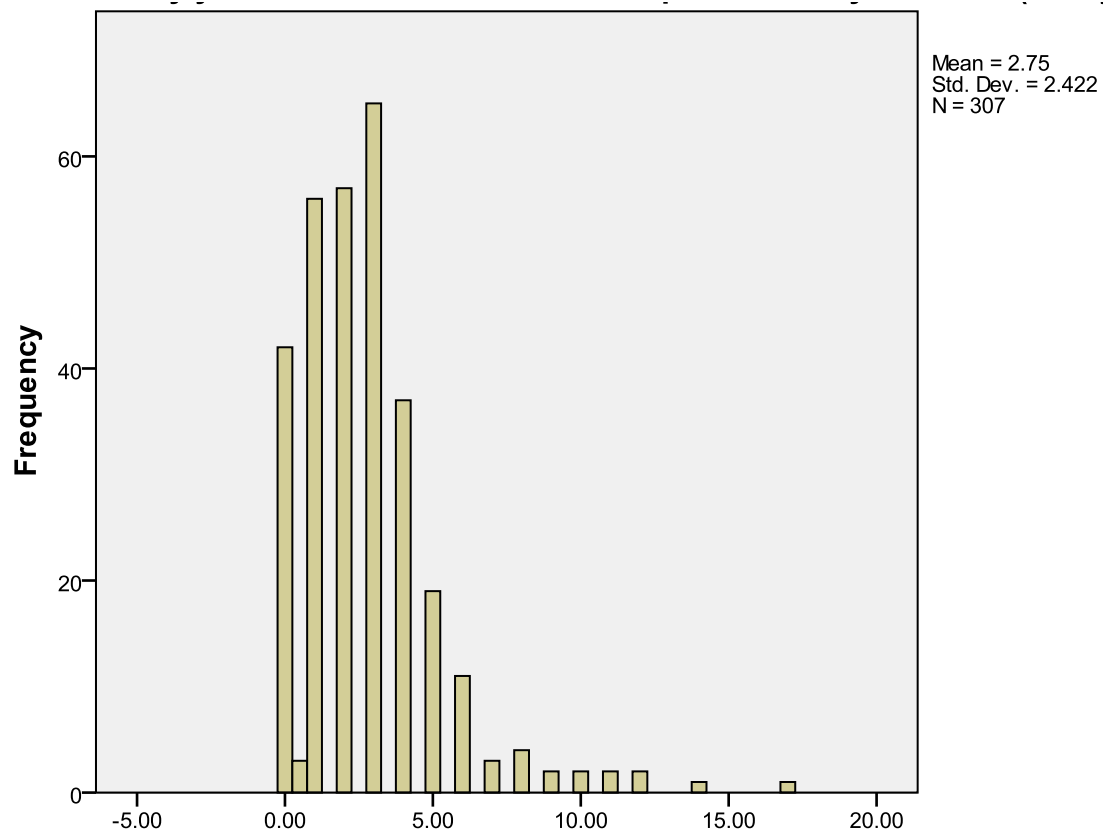
students (19.2%), 59 third year graduate students (19.2%), 80 fourth year graduate students (26.0%), 36 psychological interns (11.7%), and 13 post-doctoral students (4.2%). For the student sample, eight identified themselves as having a cognitive theoretical orientation (2.6%), 219 as having a cognitive-behavioral orientation (71.1%), 13 having a behavioral orientation (4.2%), 34 having a dynamic/analytic orientation (11.0%), 24 having an existential orientation (7.8%), and 10 as having a systems orientation (3.2%). Geographical location as defined by the United States Census Bureau (2011) was as follows: 32 (10.4%) participants living in the Northeast, 20 (6.5%) participants living in the Midwest, 235 (76.3%) participants living in the South, and 21 (6.8%) participants living in the West. Participants were asked to rate their overall computer-related knowledge and ability. Of this sample, 2.3% reported themselves to have little or no

The final sample also contained 409 licensed psychologists (Mean Age= 56.57, *SD*=11.01) comprised of 242 males (59.2%) and 167 females (40.8%) with an average of 28.02 years of experience. Please refer to Figure 4 and 5, respectively, for graphical representations of age and face-to-face distributions. Of the 409 licensed psychologists, 352 reported that they are currently practicing (86.1%) Of this sample, 23 recognized themselves as having a cognitive theoretical orientation (5.6%), 239 as having a cognitive-behavioral orientation (58.4%), 10 as having a behavioral orientation (2.4%), 99 as having a dynamic/analytic orientation (24.2%), 14 as having an existential orientation (3.4%), and 24 having a systems orientation (5.9%).

Geographical location as defined by the United States Census Bureau (2011) was as follows: 109 (26.7%) participants reported living in the Northeast, 70 participants

Figure 4

Licensed Psychologists Age in Years
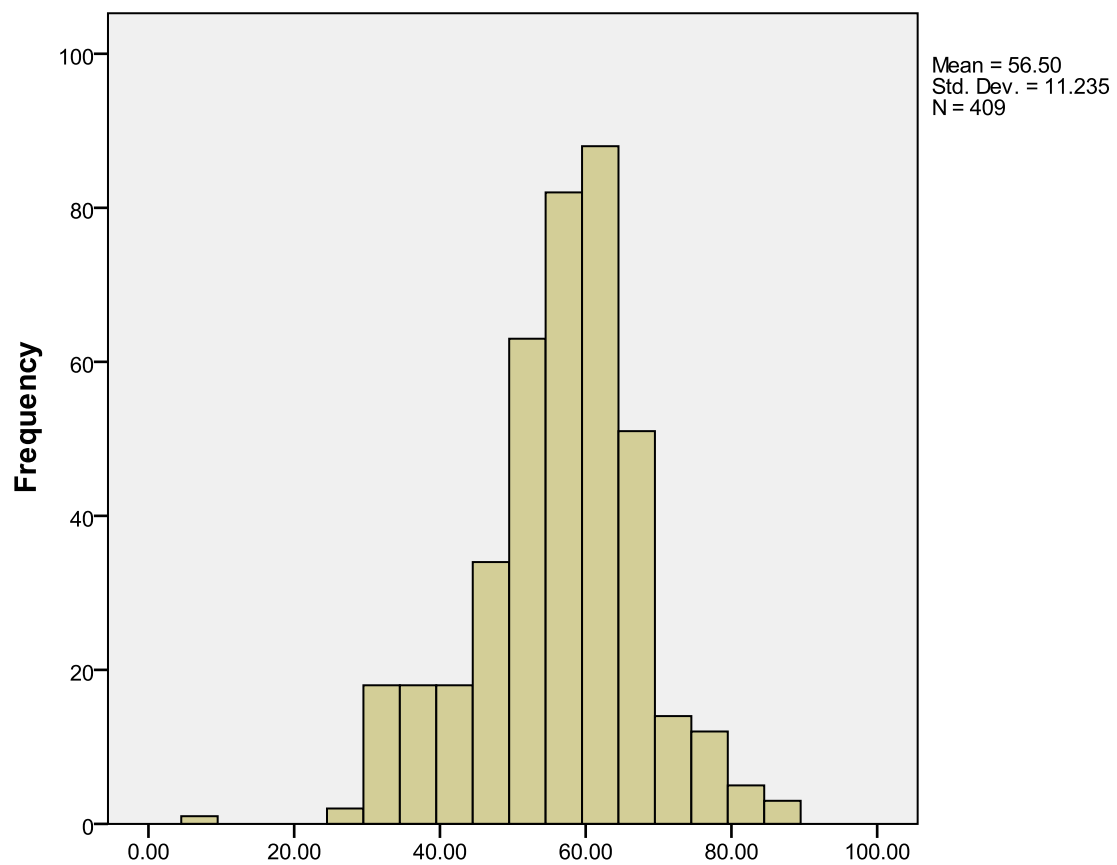
Figure 5

Licensed Psychologist's Years of Face-to-Face Clinical Experience

Mean = 28.02
Std. Dev. = 11.161
N = 406
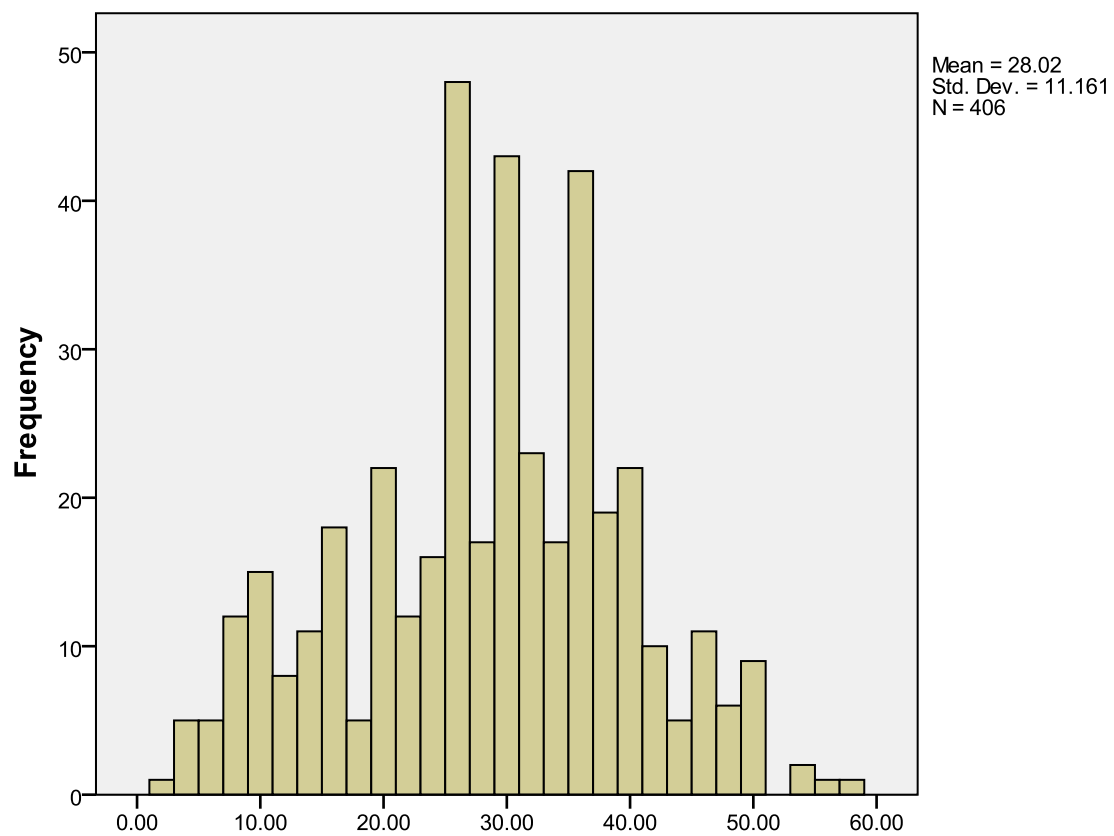
(17.1%) reported living in the Midwest, 139 (34.0%) reported living in the South, and 91 (22.2%) reported living in the West. Participants were asked to rate their overall computer-related knowledge and abilities. Of this sample, 2.0% reported themselves to have little or no knowledge and ability, 9.8% reported that most people have more knowledge and ability than they do, 32.5% have as much knowledge and ability as others, 35.9% have more knowledge and ability than some others, and 19.8% have more knowledge and ability than a majority of others.

Please refer to Figure 6 for a graphical representation of the overall state distribution of participants, and Figure 7 for a breakdown of geographical location as per the U.S. Census (2011).

Chapter IV: Results

Hypothesis 1

General acceptance. Initial analyses included the examination of key variables to determine the percentage of overall acceptance of tele-health modes of therapy. For the purposes of analyses most variables were recoded. As the general questions were interested in examining overall acceptance or rejection, the answer choices of "I Disagree," "I Somewhat Agree," and "I neither agree nor disagree," were recoded into "towards rejection." This is based around the assumption that if someone either rejects or is unsure of the utilization of the tele-health systems, then they are not accepting of them and would likely not utilize. The "towards acceptance" percentages composite included a selection of "I Agree," and I Somewhat Agree." All analyses in this study utilized this method of outcome variable coding. When data were analyzed together, participants shared a 67.36% towards acceptance and 32.64% towards rejection for the variable, "I

Figure 6. Overall Location Distribution By State
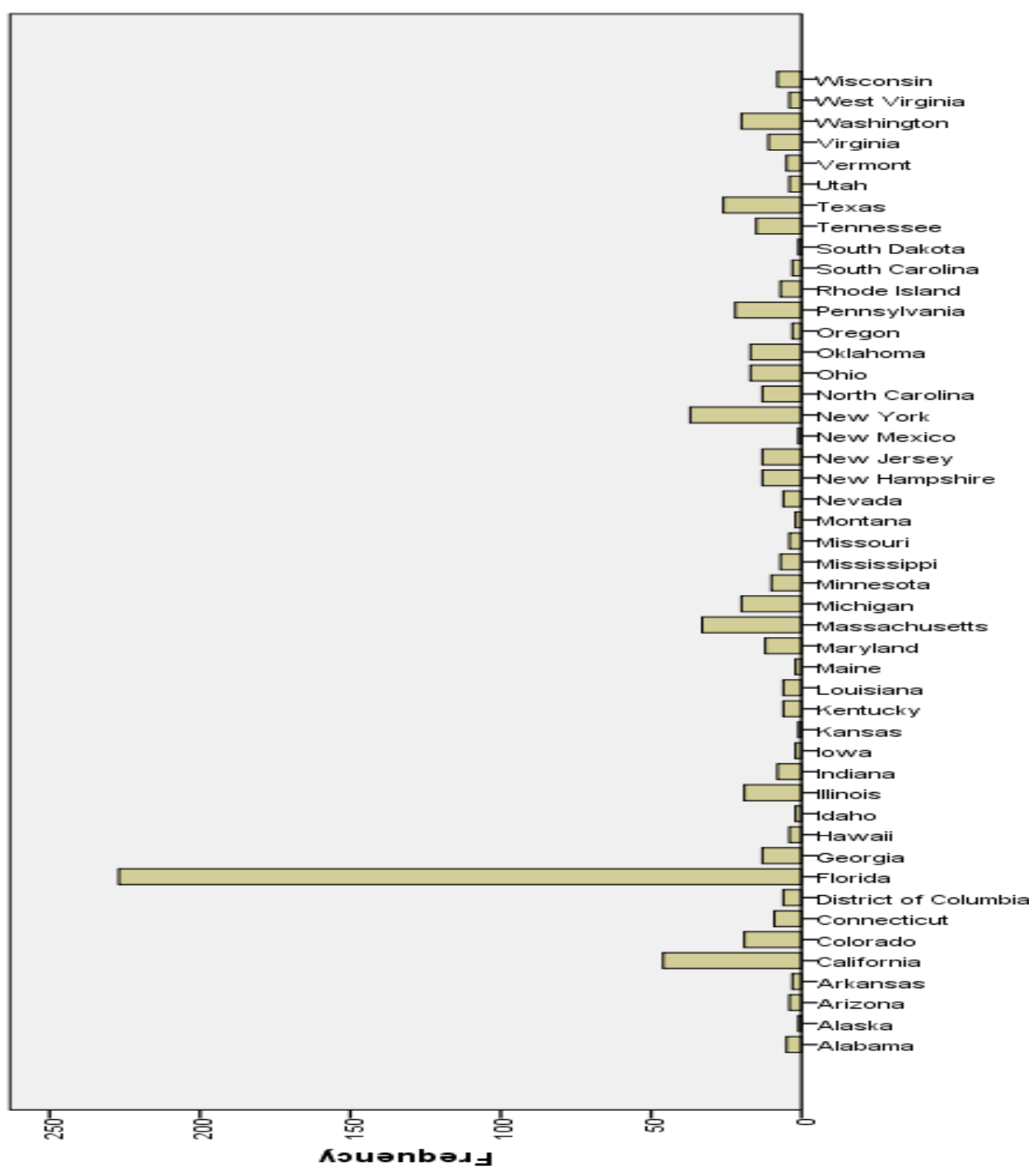
Figure 7. Overall Geographic Location Distribution Based on U.S. Census (2011)
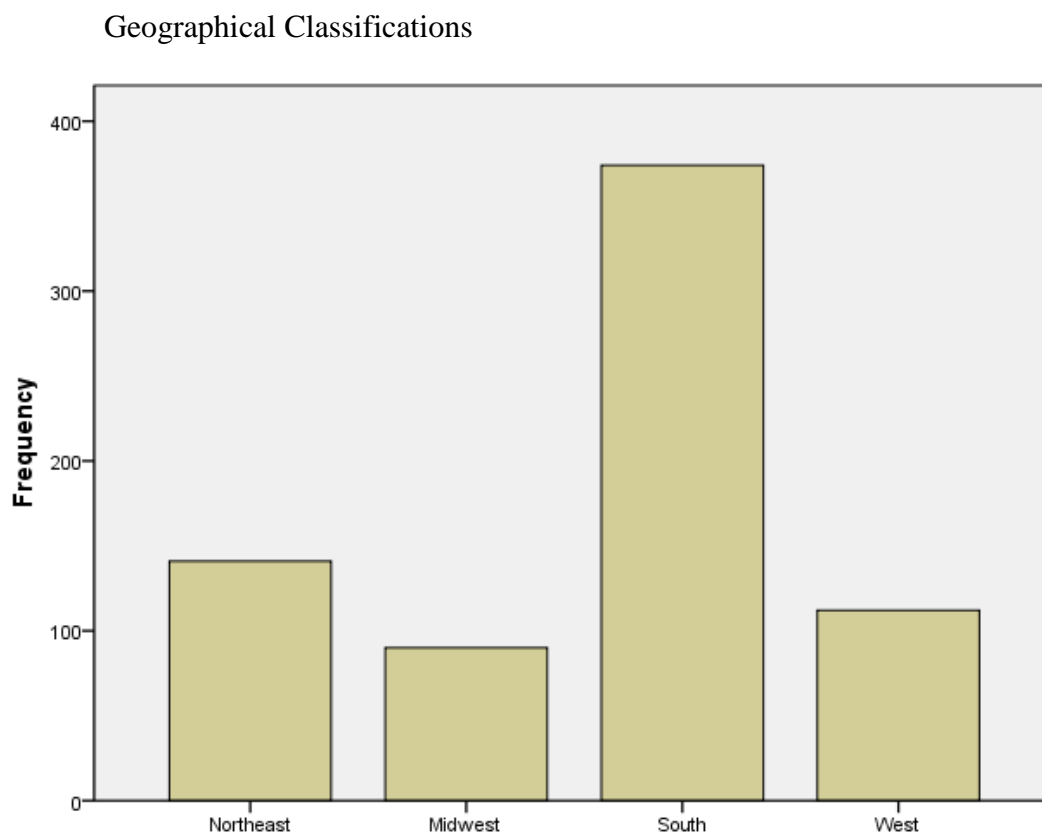
Geographical Classifications

believe that computer-based interventions (of any kind) can be effective in the treatment of psychological disorders." When further examined, it was found that 76.29% of participants were towards agreement that, "[They] believe that computer-based interventions (of any kind) can be an effective treatment tool for some disorders, but not others," suggesting that individuals may believe that tele-health modes of intervention can be helpful, but their acceptance varies by the type of disorder and individual presents with. Overall, highest acceptance of tele-health interventions, such as those conducted with a web camera, were found for agoraphobia (64.16% towards acceptance), social anxiety (62.90% towards acceptance), generalized anxiety disorder (70.15% towards acceptance), and specific phobia (61.37% towards acceptance). Lowest acceptance was found for schizophrenia (15.75% towards acceptance), and schizoaffective disorder (15.76% towards acceptance). For a complete list of towards acceptance and towards rejection percentages of examined disorders, refer to Table 1. Participants were also asked if they believe that computer-based interventions can be as effective as face-to-face therapy. Participants generally rejected this notion with a 24.13% towards acceptance.

Acceptances separated for student and licensed psychologists. When analyzed separately by academic standing, the student group (1st, 2nd, 3rd, 4th, intern, and postdoctoral students) had a 68.51% towards acceptance rate, while the licensed psychologists yielded a 66.50% rate when asked if, "[They] believe that computer-based interventions (of any kind) can be effective in the treatment of psychological disorders." When further examined, it was found that 77.92% of the student group, and 75.06% of licensed psychologists are towards acceptance for the variable, "I believe that computer-based interventions (of any kind) can be an effective treatment tool for some disorders,

Table 1

Acceptance for Web-Camera-Based Interventions for Disorders

I believe that web cameras can be used by therapists to conduct therapy for clients with the following disorders:	Towards Acceptance Percentage	Towards Rejection Percentage
Agoraphobia	64.16	35.84
Substance Abuse Difficulties	43.51	56.49
Bipolar I	27.48	72.52
Bipolar II	28.17	71.83
Major Depressive Disorder	55.51	44.49
Dysthymia	63.32	36.68
Generalized Anxiety Disorder	70.15	29.85
Social Anxiety Disorder (Social Phobia)	62.90	37.10
Specific Phobia	61.37	38.63
Obsessive-Compulsive Disorder	51.19	48.81
Panic Disorder	53.84	46.16
Post-Traumatic Stress Disorder	44.91	55.09
Acute Stress Disorder	47.84	52.16
Gender Identity Disorder	37.94	62.06
Schizophrenia	15.76	84.24
Schizoaffective Disorder	15.76	84.24
None of the Above	12.55	87.45

but not others." However, only 22.72% of the student group, and 25.18% of the licensed psychologist group were towards acceptance and believed that computer-based interventions can be as effective as face-to-face interventions.

For a listing of overall towards acceptance/rejection across theoretical orientations and techniques, age classifications, and therapy types, please refer to Tables 2-4.

Adjunct to face-to-face. As it was hypothesized that participants, both student and licensed psychologist, would be more accepting of tele-health modalities (involving a therapist's involvement in the adjunctive modality) as an adjunct to face-to-face, several survey questions directly inquired about this possibility. It was found that 72.25% of participants reported towards acceptance for this notion, with only 27.75% towards rejecting demonstrating an overall acceptance of tele-health as adjunctive to face-to-face therapies.

When examined independently by group, 75.00% of the student group, and 70.17% of the licensed psychologist group were also towards acceptance for utilizing a tele-health intervention, such as through a web camera, as an adjunct to face-to-face therapy.

Although many may utilize tele-health interventions as an adjunct to face-to-face, questions also investigated if current or future psychologists would be willing to utilize a stand-alone program as an adjunctive method rather than system involving such techniques as web-cameras (involving a therapist). Similar values were found for a standalone as was found for a psychologist involved tele-health method; with 71.41% reporting values towards acceptance and 28.59% towards rejection. When examined independently by student and licensed psychologist, students were found to have a

Table 2

Acceptances for Orientations

I think the following theoretical orientations/techniques can be effectively completed through web cam-based therapy:	Towards Acceptance Percentage	Towards Rejection Percentage
Cognitive-Behavioral Therapy	78.94	21.06
Behavioral Therapy	73.64	26.36
Cognitive Therapy	78.80	21.20
Psychodynamic-Oriented Therapy	24.69	75.31
Existential Therapy	28.17	71.83
Systems-Oriented Therapy	27.61	72.38
Motivational Interviewing Techniques	63.05	36.96
Group Supportive Therapy	29.01	70.99
Parent Training Techniques	69.73	30.26
Reality Testing	10.04	89.96

Table 3

Acceptances for Age Classifications

I believe that computer-based interventions can be effective for treatment of the following:	Towards Acceptance Percentage	Towards Rejection Percentage
Children (5-12 years of age)	44.21	55.79
Adolescents (13-17 years of age)	73.08	26.92
Young Adults (18-35 years of age)	85.08	14.92
Adults (36-65 years of age)	77.99	23.01
Older Adults (65+)	46.03	53.97

Table 4

Acceptances for Intervention Type

I believe that computer-based interventions can be effective for the following:	Towards Acceptance Percentage	Towards Rejection Percentage
Individuals	91.49	8.51
Couples	45.05	54.95
Families	32.91	67.09
Group Sessions	26.50	73.50
None of the Above	7.81	92.19

73.05% rate towards acceptance for utilizing a stand-alone intervention, while 70.17% of the licensed psychologists were towards acceptance. Due to variability in responses, follow-up analyses (Hypotheses 2 and 3) were performed to determine what factors may influence responses.

Apprehension and contention. With many controversial issues surrounding the use of tele-health in mental health care, it was also important to examine the apprehension and contention related to the use of such modalities. Results demonstrated that 62.21% of participants, both current and future psychologists, were apprehensive about utilizing online or tele-health services. Research has suggested several reasons for this apprehension (e.g., Suler, 2000; Emmelkamp, 2005), however few studies have directly questioned psychologists about these points of difficulty. Based on this research, the most commonly cited reasons for rejection were probed. Of these reasons, 46.03% stated lack of privacy as a concern, 47.42% identified confidentiality concerns, 57.60% reported concerns over crisis situations, 19.11% reported concerns of billing, 29.29% reported licensure concerns, and 44.63% stated a lack of ethics coverage. Another concern identified as a considerable concern was that of a lack of research on the tele-health modalities; with 63.04% reporting this as a concern. Interestingly, 31.52% endorsed tele-health modes with little to no qualms being recognized.

A final commonly cited criticism that may lead many to avoid utilizing tele-health services is that of a lack of education in the modes of therapy. Overall, it was found that only 21.33% were towards agreement that they had adequate training and experience to effectively conduct such therapies (e.g., internet-based therapy with web cameras or computer-based programs). Interestingly, 75.03% reported that they would be more prone

to utilize online or computerized services if they had additional/adequate training experiences. Coupled with this notion, 73.36% reported that they would attend Continuing Education classes or seminars to educate themselves on online and computerized interventions suggesting a large margin of interest in learning about such services, and potential utilization.

Hypothesis 2

Outcome measures. For the purposes of the study, five dependent variables were utilized: a) I believe that computer-based interventions (of any kind) can be effective in the treatment of psychological disorders; outcome variable 1, b) I believe that computer-based interventions (of any kind) can be an effective treatment tool for some disorders, but not others; outcome variable 2, c) I believe computer-based interventions can be as effective as face-to-face therapy; outcome variable 3, d) If given the opportunity, I would use a standalone computer-based program as an addendum to face-to-face therapy (e.g., homework); outcome variable 4, e) If given the opportunity, I would use a tele-health intervention as an addendum to face-to-face therapy (e.g., homework); outcome variable 5.

Preliminary analyses. Preliminary analyses indicated that data collected violated assumptions of parametric models (e.g., normal distribution, homogeneity of variance test) due to skewed groups. For this reason nonparametric tests were appropriate (Field, 2009). Particularly binary logistic regression models were utilized to compare groups of interest; as well as the odds ratios of acceptances. Initial analyses were conducted to determine the influence of gender and age on outcome measures. Analyses indicated that no significant contribution of gender was found (as tested through the Mann-Whitney U

analysis), however age was found to significantly contribute, and was subsequently analyzed to determine degree of influence.

Age as predictor. Due to age being believed to be a contributing factor in the model, age was analyzed as a predictor to all five outcome measures. To examine this, a median split of age was created, with the split being at 45 years of age. Analyses then compared those older than 45 to those younger than 45. Across the first three outcome measures, age was not found to be significant, suggesting that the outcomes do not vary as a function of age differences. However, significant findings were found to exist among the variables interested in questioning whether psychologists would utilize a standalone computer-based intervention (outcome 4), or a tele-health intervention (outcome 5) as an adjunctive treatment to face-to-face. For a standalone intervention as an adjunct, those younger than 45 were 1.768 times more likely (B=.570, Wald $X^2(1)$=11.521, p=.001) to endorse towards acceptance than those older than 45 years of age. Similarly, when asked if they would utilize a tele-health intervention as an adjunct to face-to-face; one that includes therapist involvement rather than a standalone program, those younger than 45 were 1.464 times more likely (B=.381, Wald $X^2(1)$=5.150, p=.023) to report towards acceptance than those older.

Current versus future psychologists. Binary logistic regression models were used to address hypothesis 2; an examination in degrees of acceptance between currently licensed and future psychologists in relation to tele-health modes of intervention. Data was dummy coded with 0 representing currently licensed psychologists (as the comparison group in the model) to the students who were coded 1 to allow for accurate comparison (Field, 2009). No significant differences among the student or licensed

doctor group were found among any of the outcome variables of interest. Neither group differed in their endorsement of whether they believe that computer-based interventions can be effective for any psychological disorder ($p=.571$), if they believe that it can be effective for some disorders, but not others ($p=.373$), and whether they believe that a computer-based intervention can be as effective as face-to-face therapies ($p=.447$). Additionally, neither group differed in their reporting of whether they would use a standalone computer-based program ($p=.398$), or a tele-health intervention ($p=.153$) as an addendum to face-to-face therapy.

Hypothesis 3

Differences of acceptance varying by orientation. Although hypothesis 2 found that no significant differences of attitudes differ between licensed psychologists and future psychologists, previous research suggested that orientation may play an important role in acceptance or rejection of tele-health modes of intervention. Overall, cognitive-behavioral, behavioral, and systems orientations were significantly more inclined towards accepting the novel modes of therapeutic interventions than were dynamic/analytic, and existential orientations. To allow for such analyses, variables were recoded. Each orientation was individually used as a comparison group with a simple contrast being applied to allow for comparison of each orientation. Primary outcome measures utilized odds ratios to compare the overall endorsement towards acceptance. Please refer to Table 5 for analyses statistics of binary logistic regressions for hypothesis 3.

Outcome 1. When divided by outcome variable, those who subscribed to the cognitive-behavioral theoretical orientation were 2.340 times more likely ($B=.850$, Wald $X^2(1)=17.693$, $p<.000$) than dynamic/analytic therapists, and 2.042 times more likely

Table 5

Significant Findings for Binary Logistic Regression Examining Orientation To Outcome Measures

		B (SE)	Sig.	95% CI for Odds Ratio		
				Lower	Odds Ratio	Upper
Outcome 1						
	Included					
	CBT[1]	.850 (.202)	.000	1.575	2.340	3.478
	Systems[1]	1.103 (.440)	.012	1.273	3.014	7.140
	CBT[2]	.714 (.342)	.037	1.044	2.042	3.995
Outcome 2						
	Included					
	CBT[1]	.837 (.215)	.000	1.514	2.309	3.522
	Systems[1]	1.443 (.562)	.010	1.407	4.235	12.745
	CBT[2]	.869 (.356)	.015	1.187	2.385	4.795
	Systems[2]	1.476 (.630)	.019	1.274	4.375	15.029
Outcome 3						
	Included					
	Behavioral[2]	1.445 (.643)	.024	1.204	4.243	14.948
Outcome 4						
	Included					
	Cognitive[1]	.849 (.432)	.049	1.002	2.337	5.449
	CBT[1]	1.192 (.206)	.000	2.198	3.295	4.938
	Behavioral[1]	2.306 (.760)	.002	2.263	10.037	44.521

Note: 1: Comparison Group of Dynamic/Analytically Oriented Psychologists; 2: Comparison Group of Existentially Oriented Psychologists. Alpha Value = 0.05.

Table 5 *Continued*

Significant Findings for Binary Logistic Regression Examining Orientation to Outcome Measures

		B (SE)	Sig.	95% CI for Odds Ratio		
				Lower	Odds Ratio	Upper
Outcome 4 *Continued*						
	Systems[1]	.977 (.426)	.022	1.153	2.655	6.116
	CBT[2]	1.026 (.345)	.003	1.419	2.790	5.485
	Behavioral[2]	2.140 (.809)	.008	1.742	8.500	41.478
Outcome 5	Included					
	CBT[1]	.752 (.208)	.000	1.410	2.121	3.191
	Behavioral[1]	1.485 (.644)	.021	1.250	4.417	15.604
	Systems[1]	.938 (.460)	.041	1.038	2.555	6.291
	CBT[2]	.845 (.346)	.015	1.181	2.329	4.591
	Behavioral[2]	1.579 (.701)	.024	1.227	4.848	19.153

Note: 1: Comparison Group of Dynamic/Analytically Oriented Psychologists; 2: Comparison Group of Existentially Oriented Psychologists. Alpha Value = 0.05.

(B=.714, Wald $X^2(1)$=4.352, p =.037) than existentially-oriented therapists to endorse towards acceptance that computer-based interventions of any kind can be effective in the treatment of psychological disorders. Those who identify themselves as systems therapists were 3.014 times more likely (B=1.103, Wald $X^2(1)$=6.290, p =.012) to endorse towards acceptance than dynamic/analytic therapists.

Outcome 2. When asked if therapists would endorse the interventions as helpful for some disorders, but not others, cognitive-behavioral oriented psychologists were 2.309 times more likely; B=.837, Wald $X^2(1)$=15.083, p<.000, and systems oriented therapists were 4.235 times more likely to endorse towards acceptance than dynamic/analytic orientated psychologists; B=1.443, Wald $X^2(1)$=6.595, p=.010. When compared to existentially oriented therapists, cognitive-behaviorally oriented psychologist were 2.385 times more likely; B=.869, Wald $X^2(1)$=5.954, p=.015, and systems oriented were 4.375 times (p=.019) more likely to endorse towards acceptance; B=1.476, Wald $X^2(1)$=5.495, p=.019.

Outcome 3. Psychologists were also asked to report whether they believe that computer-based methods can be as effective as face-to-face therapy. Generally, no significant differences were reported, with the exception of behaviorally oriented therapists being 4.242 times more likely (B=1.445, Wald $X^2(1)$=5.059, p=.024) to endorse towards acceptance than existentially oriented therapists.

Outcome 4. As it was also hypothesized that more therapists would be accepting of tele-health modes of therapy if they were used as an adjunct to face-to-face therapy, outcome four investigated whether psychologists would be interested in utilizing a standalone computer-based program (e.g., an interpretation bias retraining program that is

fully automated and self-correcting with no therapist involvement) in conjunction with face-to-face treatments. Strong contrasts were observed between the groups. When compared to dynamic/analytic oriented therapists, cognitive therapists were 2.337 times (B=.849, Wald X2(1)=3.859, p=.049) more likely, cognitive-behaviorally oriented therapists were 3.295 times (B=1.192, Wald X^2(1)=33.356, p<.000) more likely, behaviorally oriented therapists were 10.037 times (B=2.306, Wald X^2(1)=9.207, p=.002) more likely, and systems oriented therapists were 2.655 times (B=.977, Wald X^2(1)=5.263, p=.022) more likely to endorse towards acceptance of standalone computer-based interventions being used as an adjunctive treatment to face-to-face. Additionally, when compared to existentially oriented psychologists, cognitive-behavioral oriented therapists were 2.790 times (B=1.026, Wald X^2(1)=8.850, p=.003) more likely, and behavioral oriented therapists were 8.500 times (B=2.140, Wald X^2(1)=7.002 p=.008) more likely to endorse towards acceptance.

Outcome 5. A final outcome question was interested in whether they would utilize a tele-health mode (e.g., webcam with a licensed psychologist to a client) as an adjunctive treatment to face-to-face. Similar findings were found as outcome 4. When compared to dynamic/analytic therapists, cognitive-behavioral oriented therapists were 2.121 times (B=.752, Wald X^2(1)=13.027, p<.000) more likely, behavioral oriented therapists were 4.417 times (B=1.485, Wald X^2(1)=5.320, p=.021) more likely, and systems oriented therapists were 2.555 times (B=.938, Wald X^2(1)=4.166, p= .041) more likely to endorse towards acceptance. Similarly, when compared to existentially oriented therapists, cognitive-behavioral oriented therapists were 2.329 times (B=.845, Wald

$X^2(1)=5.954$, $p=.015$) more likely, and behavioral were 4.848 times ($B=1.579$, Wald

$X^2(1)=5.073$, $p=.024$) more likely to endorse towards acceptance.

Additional Analyses

When examined, it was found that the dynamical/analytical oriented psychologists demonstrated an overall older mean and median age than the other orientations. Due to this, additional analyses were conducted to ensure that orientation differences were not a reflection of age rather than orientation differences.

Age * orientation interaction. Age was controlled for, and a computed effect of age * orientation was analyzed through binary logistic regression models. Despite this interaction term being entered, no significant effects of interactions were found for any of the outcome measures.

Chapter V: Discussion

Hypothesis 1

General acceptance. With the ever-expanding literature base of mental health tele-health interventions, but a lack of general consensus of interest, the current study is one of the first to provide validation of an interest in such intervention delivery systems by the general psychological community. Through the national sample collected in the current study, a general acceptance rate of approximately 67% was found for the collected sample, significantly higher than that of the Mora, Nevid, and Chaplin study (2008). Although not as significant, current findings are also in line with Jacobsen and Kohout's (2010) work in which many that completed a survey by the American Psychological Association's Center for Workforce Studies surveying psychology health service providers reported an interest in such services, with 87% reported having tried

tele-health services at least once. Collected finding suggest that there is a significant interest in tele-health modes of intervention among psychologists; both current and future.

Furthermore, approximately 76% of those surveyed believed that tele-health modalities of intervention can be effective for some disorders, but not others. One largely cited criticism by many suggests that tele-health intervention may only be helpful for a select range of disorders, such as those more "easily" treatable (e.g., anxiety, depression). This notion seems to be supported by the current findings which found such disorders as agoraphobia (64% towards acceptance), and generalized anxiety disorder (70% towards acceptance) are among the more endorsed disorders that can be treated through tele-health domains, while those with poor reality testing such as schizophrenia (16% towards acceptance) are not endorsed.

Additional findings suggested that a general agreement was found between current and future psychologists in terms of whether they believe that computer-based interventions (of any kind) can be as effective as face-to-face (24% towards acceptance). Although a meta-analysis of 92 studies by Barak, Hen, Boniel-Nissim, and Shapira (2008) which utilized more than 10,000 participants who used some form of electronically delivered therapy was found to have an effect size of .53, an effect size comparable to the average effect size for traditional face-to-face therapy, it appears that clinical judgment of therapists is that computers, no matter how helpful they may appear, can never be as effective as a face-to-face interaction. Interestingly, despite the consensus that computerized interventions cannot be as effective as face-to-face, many are still interested in either utilizing them, or learning more about them.

Divided sample. General acceptance was further split and analyzed by standing (students versus licensed psychologists). When divided, similar results as to the general sample was found with greater than 60% of individuals indicating responses towards acceptance for their belief that tele-health modes of intervention can be effective in the treatment of psychological disorders. Also similar to the general sample, greater than 70% of surveyed groups indicated that the modes of intervention may be better for some disorders, but not others.

Results of the survey indicated that initial hypotheses were confirmed, and a significantly higher endorsement towards acceptance of computerized and general tele-health modes of intervention was evidenced than in previous studies. Although Mora, Nevid, and Chaplin's (2008) findings are probably a representation of the time of sampling and population, the exponential growth of both utilization and education on the usage of tele-health mental health interventions may have served to create a further shift in the zeitgeist of acceptance. Surprisingly, percentages indicated that there are no large differences in attitudes towards tele-health between students and licensed psychologists, as was originally predicted.

Adjunct to face-to-face therapy. A second question of Hypothesis 1 dealt with the idea of tele-health services being used in conjunction with face-to-face services, either as a direct adjunct, or as a homework assignment. Current findings agree with that of Mora, Nevid, and Chaplin (2008) in that psychologists seem to general favor this notion. In the current study more than 70% indicated responses towards acceptance of utilizing a tele-health mode of intervention (e.g., web camera) in addition to face-to-face therapy. These percentages held true when the data was split for doctors and students.

A follow-up question investigated whether this trend of acceptances continues for asynchronous forms of intervention, such as through a standalone computer-based interventions being used as an adjunctive intervention. Similarly, a 70%+ acceptance was found for both groups. These findings suggest that of those surveyed, whether students or currently a licensed psychologist, the additional adjunctive intervention is generally accepted regardless of the type used; as long as there is evidence to support its use. Collected findings agree with previous suggestions by Wangberg et al. (2007) which stated that a great percentage of mental health professionals would endorse the computerized modes of therapy as an adjunct to face-to-face rather than as a standalone method.

Apprehension and contention. Even with an endorsement as to the positive effects of tele-health modes of intervention, approximately 62% of participants indicated that they had some apprehension about utilizing such online or computer-based services. Interestingly, some of the highest rated concerns including a lack of privacy (46%), confidentiality concerns (47%), and concerns of crisis concerns (57%) have all been addressed in previous literature. Although once paramount concerns, recent gains in the literature base, as well as assistive technology have allowed for privacy and confidentiality to be maintained (e.g., Shaw, 2006; Iconic Health's HomePsych program), and crisis situations to be properly controlled and planned for (Fenichel et al., 2002; Barak, 2007).

A final concern that is worth noting is that of a lack of ethics governing usage as a reason for apprehension. Current data suggests that nearly 45% of those surveyed indicated a lack of ethical coverage as a reason as a point of apprehension and a possible

reason for rejection. For these individuals, a shift in their attitudes may come with the release of the American psychological Association's new tele-health ethical guidebook that is to be realized in the next few years; serving to outline all topics from licensure to utilization of evidence-based treatments. With more clear guidelines as to ethical usage of such technologies, more may be willing to try the modes of intervention without a fear of ethical backlash.

Overall. Overall, it appears as though a large percentage (>60%) of both students and licensed psychologists endorsed tele-health modes of interventions. Preliminary analyses conducted utilizing percentages and descriptive statistics evidenced that a significant degree of acceptance between students and licensed psychologists, which was hypothesized to exist, may not be the case. Rather, responses towards agreement rates for the effectiveness, and limitations, seem to be uniform. Although endorsing, caution should be made, as a large percentage of participants also indicated that such tele-health modes should be carefully monitored, and may only be helpful for specific disorders. This suggests that despite being considered helpful for some disorders, other disorders may be better treated by more traditional face-to-face modes of intervention. Despite reservations, this study provides evidence that psychologists of varying academic levels do believe that tele-health modes of therapy can be beneficial under certain circumstances.

Ultimately, it seems that a lack of education on the safe and evidence-based means to conduct tele-health-based interventions may be responsible for an endorsement of rejection. As many cited reasons that have been previously addressed, it can be assumed that if many of these individuals knew about such solutions, they may be more

inclined to endorse the mode of therapy. This is further substantiated by a finding of only 21% of those surveyed reported that they had adequate training and experience to effectively conduct such therapies or interventions. Even with the many points of apprehension, over 30% reported that they fully endorse tele-health modes of therapy with little to no qualms or reservations being recognized. With more continuing education and workshop classes being offered, it is hypothesized that education may serve to sway some that were otherwise apprehensive to, at the least, try the novel forms of intervention in addition to face-to-face therapy. If nothing else, many who have in the past been oppositional to the new technology, have become interested in these novel techniques. With this, over 70% in the current study reported that they were towards acceptance that they would be interested in attending continuing education classes or seminars to educate themselves on online and computerized interventions. This suggests a large population who are at least interested in learning more about the techniques.

Hypothesis 2

Influence of age. When age was entered separately with a median split, no significant differences were found for the first three outcome variables. However, a median split of 45 years of age allowed for a different look at the outcome variables interested in utilization of adjunctive therapies. Interestingly, those younger than 45 years of age were more endorsing of computers both as a standalone adjunct (1.7 times more likely than those older than 45), and as a tele-health adjunct (1.5 times more likely). This age differential could be more suggestive of a comfort level with computers in general, as a common stereotype is that the younger generation grew up with computers more than the older generation. As it was found that no significant differences exist between the

student and licensed psychologists group, it may be the case that the younger generation being more accepting of tele-health modes is removed of the interventions themselves, and rather a level of comfort issue.

Current generation versus the future generation of psychologists. Due to differences being found among the descriptive statistics for endorsement as split by age, binary logistic regressions aided in deciphering the degree of difference between those currently licensed psychologists, and the graduate students. Binary logistic regressions further supported conclusions drawn from the percentages and descriptive statistics. Despite Mora, Nevid, and Chaplin's (2008) findings of a potential bias in some psychologists towards not knowing, or wanting to learn about the tele-health modes of intervention, the current study did not find such divides. The theory proposed that the younger generation of psychologists(the current graduate students) being more accepting of tele-health modalities was disproven, as both the student and licensed psychologist groups had fairly even levels of overall acceptance, with no significant differences between the groups being recognized. These trends also were present in the questions of whether psychologists believe that either a standalone computer-based program or a tele-health intervention can be effective as an adjunct to face-to-face therapy. As no significant differences in statistical analyses were yielded, coupled with the overall percentages calculated, it is believed that there is a general agreement between both grouping classifications that tele-health modes of intervention can be effective, especially for specific disorders, and can be effective as an adjunct to face-to-face therapy. Additionally, data suggests a universal stance that tele-health modes of intervention are not as effective as face-to-face interventions.

Hypothesis 3

The role of theoretical orientation in acceptance/rejection. While often hypothesized, but rarely studied, the influence of theoretical orientation on tele-health endorsement has remained one of the primary areas of interest for many professionals. Overall, data indicated that predicted hypotheses were correct, as cognitive-behavioral, behavioral, systems, and cognitive theoretically orientated psychologists were much more likely to report acceptance of tele-health modalities than were existential and dynamic/analytic therapists. These findings appear in agreement with trends observed in Mora, Nevid, and Chaplin's (2008), as well as Wangberg et al.'s (2007) studies. Similar trends were also observed with the CBT, cognitive, behavioral, and systems therapists being more accepting of adjunctive interventions, whether standalone, or therapist involved, than those dynamic/analytic, or existential psychologists. To ensure that age is not influencing the analyses, and it is truly the orientations that are different, age * orientation interaction analyses were run, however no significant findings were yielded suggesting that the orientation findings were independent of any age effects. Ultimately, data indicated that the theoretical orientation of a psychologist plays a large role in their levels of endorsement of computer-based interventions.

Interestingly, no great differences were found between the theoretical orientations when questioned if the psychologists from different viewpoints believe that tele-health modes of intervention can be as effective as face-to-face. However, one exception was noted, with behavioral therapists being more likely to endorse as accepting than existential therapists. While this could be due to the often manualized treatments

associated with behavioral interventions, it is unclear why this difference is only accounted for in the relationship with existential and not dynamic/analytic orientations.

Explanation for differences. While differences in endorsement as dictated by orientation were found; this finding does not explain why such trends exist. One possible explanation for differences among the CBT, cognitive, behavioral, and systems therapists and the existential and dynamic/analytic therapists could be the focus and means of change for each therapy. Due to differences in techniques and means of change, it is possible that many dynamic/analytic and existential therapists do not believe that the same gains can be achieved through tele-health modalities. For example, in dynamic theory the analysis of nonverbal behaviors and the use of silence are paramount. Although important in CBT, cognitive, behavioral, and systems theories, many have stated that the nonverbal cues are significantly more relevant in dynamic, and possibly existential theories. As Hill, Siegelman, Gronsky, Surniolo, and Fretz (1981) reported, it is not necessarily the frequency of occurrence of nonverbal behavior, but an occurrence as specific points that are important. With the limitations of tele-health modes of treatment, it is possible that many dynamic/analytic, or existential therapists may feel that they are not getting all of the important information; not even if using a web camera. This is especially true for simple habits such as swinging a foot, physiological changes such as sweating or muscle tension (Gabbard, 2007), or movements, and facial expressions. Movement of hands and feet may also hold greater meaning, such as arm crossing representing ego defenses or being closed off from others when certain topics are discussed (Ekman, & Friesen, 1968). This assumption translates to dynamic therapists, and those similar in orientation, to view those unconscious enactments that occur in

psychotherapy as richly full of meaning; conveying information that may be outside of the client's awareness (Gabbard, 2007). This focus on nonverbal behaviors was even recognized by Freud, as he recognized that clients may not remember or verbalize certain pieces of information which may be outside their consciousness, however these unconscious actions or feelings will be repeated in the clinical setting (Freud, 1958). This dynamic theory conceptualization may be in contrast to others including cognitive which utilizes a framework of understanding difficulties in cognitive terms, uncovering and helping clients respond to interfering cognitions (Beck & Tompkins, 2007), behavioral which is more focused on the behavior of the person and changing maladaptive behaviors to more positive behaviors, and systems approaches which may be more focused on the interaction of several systems and how they interplay to create difficulties, including maladaptive means of communicating.

An additional hypothesis for differences relates to the interpretation of the therapeutic relationship. For example, in existential therapy, the focus is in the "here and now" relationship between the therapist and the client which is seen as one of the primary sources of change (Yalom, 2002) and healing (Yalom, 1980). Despite the relationship being important in other theoretical orientations, such as CBT, it is not as primary a component for therapeutic change as it is in an existential relationship. With so many factors of a relationship being important, it may be difficult for all components to converge within a digital setting.

Despite the differences found in the current study, it should be noted that each theoretical orientation is based on a different viewpoint and ideals that ultimately all work towards providing the maximum gains for each client. This is not to say that any

theoretical orientation or their acceptance or rejection is more correct, but rather that differences in focus for treatment may be a deciding factor for utilization of tele-health interventions.

Gender Differences

Although not a primary question, gender differences were also examined for significant differences related to acceptance/rejection. While Whitley's (1998) meta-analysis of gender differences discovered that there are gender specific attitudes with males demonstrating more self-efficacy with computers; it could be hypothesized that males would be more accepting than females of tele-health modes of intervention, as they would hold a higher self-efficacy towards the mode than females. However, the current study did not recognize such trends. Rather, analyses suggested that gender did not significantly influence acceptance or rejection, despite this possible elevation in male self-efficacy when compared to females.

Limitations of the Current Study

Limiting geographical range. Despite running a pilot study to work out design flaws, some overlooked factors have been uncovered which can be seen as limitations to the current study. The first and primary criticism, of the current design is the limiting nature of the demographics. The sample was strictly reserved for those students and licensed psychologists living in the United States. However, in emailing potential participating, it was concluded that a small portion attempting to take the survey were in fact practicing/living in Canada. Due to this design flaw, they were unable to participate, as the answer choices for location were limited to the 50 states and the District of Columbia. Although it is unlikely that Canadian attitudes would significantly differ from

those over their American counterparts, it is still worth of comparison. Future studies should not only include Canadian populations, but other areas such as Europe, and South American to create a more global understanding of the attitudes and perceptions of tele-health.

Limiting orientation range. A similar criticism to the limiting geographical range can be applied to orientations. A list of the most commonly cited theoretical orientations as found by research conducted by the American Psychological Association was utilized; however, this design may have omitted other orientations. This design of using several of the most commonly cited orientations was to place participants into orientation brackets because if a write in response was allowed, it was hypothesized that there would not be enough participants in each field to do a true analysis, as too many individual theoretical orientations exist that are variations of more global overarching orientations (e.g., Experiential, Gestalt, and Emotional Focused all falling under the "Existential Orientation" framework). As with the demographic range, future work should create a coding system to allow for all documented theoretical orientations to be represented.

Response Rate. Due to a historically low response rate of 25-30% (Kittleson, 1997), several measures were taken to increase the amount of surveys completed. Despite efforts, a low return rate from both students and licensed psychologists was noted. This low response rate is hypothesized to be in part due to the increased interest and proliferation of web surveys (Couper, 2000; Dillman & Bowker, 2000). With this development, some have concluded that many potential participants have difficulty distinguishing the good from the bad, as they are bombarded with online survey requests

(Couper, 2000). Due to this and the numbers of requests being asked of both students and therapists, many who would otherwise complete the surveys are becoming less inclined to participate (Couper, 2000).

Possible bias of responses. One of the possible biases of the study may involve a responder selection. In order to reduce a bias of responders, the study invitation email referred to the study as "internet delivery systems" instead of "tele-health" thus not allowing potential participants to be deterred from the study after initially seeing the words "tele-health." It is possible that the participants who completed the study held strong opinions of the topics. The design of the study was intended to control for this by including all known accredited clinical training schools for clinical psychology doctoral degrees in the United States, as well as all of the Division 12 members listed on their website; inviting all to participate, despite any preconceived notions of bias in order to get a holistic representation of the field. However, it was found that only a fraction of the clinical training directors emailed actually sent the email to their faculty and students, thus limiting the sample pool. Additionally, only a fraction of the Division 12 members responded. While a respectable sample was gathered, a larger participant pool could make for even stronger findings and generalization. Coupled with this, the survey itself was hosted online, rather than paper and pencil. While this was done for logistic, financial, and time purposes, it is acknowledged that some of those who didn't respond did not do so because they do not often use the computer. Despite these criticisms, it is unknown if a true responder bias exists among those who participated in the study.

Reasons for rejection limitations. A criticism among those who completed the survey was that it was too stringent when it came time to reporting the reasons for

possible rejection of tele-health modalities. Although the most common reasons for rejection, as gathered from previous research, were used as answer choices, it was recognized that these choices left out several possible other reasons for rejection that should be included in future research. Based on responses, such additional reasons not directly offered as response choices included a lack of education, effect on therapeutic relationship, personal anxiety related to a new form of treatment that you may feel uncomfortable with, a loss of nonverbal communications, lack of interpersonal interaction, a believed lack of efficacy, and difficulty expressing warmth.

Ethnic identification. A final criticism of the current design involves the lack of an ethnic identification section on the demographics. Although no direct evidence has been found that would make one believe that ethnic classifications would influence one's adoption of tele-health modes of therapy, a lack of questioning about this does not allow for clarification of such an assumption.

Conclusion

While the current study suggests there is significant interest in tele-health modes of therapy, it is recognized that some individuals will never fully believe that tele-health modes of interventions can provide adequate treatment or be comparable to face-to-face treatments; despite research suggesting otherwise. Despite this, there appears to be a great interest of many who are interested in learning and utilizing tele-health modalities for the treatment of their clients. With this knowledge, it is believed that with continued education and an increased amount of research related to the tele-health interventions, some may begin to be swayed, and ultimately attempt such techniques. As one participant of the study eloquently stated, "Responses [to the study] would have been less

supportive/favorable had I not attended a workshop focused on this issue a week ago."
Regardless on stance, it is recognized that face-to-face will, and should, continue to be used whenever possible, as it is a "tried and true" form of therapy; as tele-health research is still evolving. However, with changes in technologies, and individual's lives, it is hypothesized that face-to-face therapy may begin to play a smaller and smaller role in therapeutic interventions (Epstein, 2011). For this reason, research should continue to provide evidence for or against the usage of tele-health in certain domains of computer- and internet-based treatment to determine the most efficacious use of such interventions.

As Dielman and colleagues (2010) proclaimed, it is critical that psychologists develop an agreement regarding how technologies should be applied, as it will influence the practice, research, and training of psychological services. In this vein, it is believed that the current study succeeded in creating a national sample to assess currently licensed and future licensed psychologists' attitudes towards various aspects of tele-health interventions while addressing such concerns of previous research as small sample size, conflicting reports (e.g., Mora, Nevid, & Chaplin, 2008; Wangberg, Gammon, & Spitznogle, 2007), and a lack of analysis comparing acceptance/rejection across theoretical orientations. Despite Rabasca's (2000) concern that many practitioners are apprehensive about embracing a mode of therapy that has been so little studied, current results do not agree with this claim. Rather findings indicated that no significant differences in acceptance/rejection exist between currently licensed and future psychologists. Overall, a consensus was found that most currently licensed, as well as most future psychologists were accepting of tele-health modes of interventions, with many not only willing to learn more, but eager to do so. This proposes a positive outlook

for the field of psychology; as psychology is a science, and therefore must continue to grow and evolve with the times.

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Appendix A

Mental Health Practitioners' Attitudes Towards Computer-Based Interventions Survey

Computer-Based Interventions

Current and Future Psychologist's Attitudes Towards Internet-Based Tele-Health

Hello—my name is Jonathan Perle and I am a doctoral student at Nova Southeastern University conducting research on internet-based therapy.

I am approaching future and current doctoral level clinical psychologists from around the country in the hopes of gathering information about psychologist's perspectives regarding internet-based therapy—specifically whether you endorse such modalities and whether you would be interested in employing these methods in the future.

I have a brief survey that would take 10 minutes or less to complete. Your participation in the study is completely voluntary—meaning that you can choose not to participate or can discontinue participation at any time.

As the questions are very basic and we are not collecting your name or other identifying information there is minimal risk involved in completing the survey. The responses you provide could increase our knowledge regarding future practitioners' willingness to use computer-based therapeutic techniques in practice.

Your completion of the survey will be taken as your consent for participation. Please print this cover page and retain for your records. Below are names and contact information for myself (Jonathan Perle), my faculty supervisor, Dr. Barry Nierenberg, Ph.D., ABPP, and the Institutional Review Board at Nova Southeastern University. Please feel free to contact Dr. Nierenberg or the Institutional Review Board with any questions or comments regarding your participation.

Thank you!

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There are 22 questions in this survey

With the current wave of computer-based intervention and psychological based websites providing computer-based and web based therapeutic interventions, it is important to get gather information as to whether current and future psychologists are accepting or rejecting of computer-based interventions. As current and future practitioners, your opinion is of great importance and can influence the future direction of psychology.

For this survey the following definitions should be used for specific phrases:

1) Computer-based interventions refer to *any type* of computer intervention including both therapist involved and standalone computer-based programs and interventions.
2) Tele-health and Internet-Based Interventions refer specifically to *online methods* in which a psychologist is interacting with a client through various means including web camera, e-mail systems, and chat rooms.
3) Standalone computer-based programs specifically refer to standalone intervention programs that function *without involvement from a psychologist* (e.g., cognitive retraining computer program, exposure computer programs).

1. What is your current age in years?

_____ years old

2. What is your gender?

Male   Female

3. What is your current academic status?

1st Year Graduate Student   2nd Year Graduate Student

3rd Year Graduate Student   4th Year Graduate Student

Psychological Intern   Post-Doctoral Student

Licensed Psychologist

4. How many years of face-to-face clinical experience do you have? (0 – 99 years)
_____years

5. What orientation do you *most* identify with? Please choose at most 1 answer:

         Cognitive   Behavioral

         CBT   Dynamic/Analytic

         Existential   Systems

6. What state are you currently in?

         [Drop Down Menu of All States in United States]

7. Are you currently practicing as a licensed psychologist?

         Yes   No

8. How would you rate your overall computer related knowledge and abilities?

1	2	3	4	5
Little to No Computer Related Knowledge and Ability	Most people have more computer related knowledge and ability than I do.	I have as much computer related knowledge and ability as others.	I have more computer related knowledge and ability than some people.	I have more computer related knowledge and ability than a majority of others I know.

9. What is your self-perceived competency for:

	1	2	3	4	5
	Little to No Knowledge and Ability	Most people have more knowledge and ability than I do.	I have as much knowledge and ability as others.	I have more knowledge and ability than some people.	I have more knowledge and ability than a majority of others I know.
Webcams					

E-Mailing					
Chat Rooms					
Online Tutorials					

10. Should psychologists be allowed to use computer-based therapy of any kind
(with or without psychologist involvement to clients)?

1	2	3	4	5
No	Somewhat No	Neither Yes or No	Somewhat Yes	Yes

11. I believe that computer-based interventions (of any kind) can be effective in the
treatment of psychological disorders.

1	2	3	4	5
I Disagree	I Somewhat Disagree	I Neither Agree Nor Disagree	I Somewhat Agree	I Agree

12. I believe computer-based interventions can be *as effective* as face-to-face therapy?

1	2	3	4	5
I Disagree	I Somewhat Disagree	I Neither Agree Nor Disagree	I Somewhat Agree	I Agree

13. I believe that computer-based interventions (of any kind) can be an effective
treatment tool for some disorders, but not others.

1	2	3	4	5
I Disagree	I Somewhat Disagree	I Neither Agree Nor Disagree	I Somewhat Agree	I Agree

14. I believe that computer-based intervention can be effective for the following client group:
    Please choose all that apply:

       Children (5-12)   Adolescents (13-17)

       Young Adults (18-35)   Adults (36-65)

       Older Adults (65+)   It cannot be effective for any age range

15. I believe that computer-based interventions can be effective for the following :
    Please choose all that apply

       Couples   Individual

       Families   Group Sessions

       None of the Above

16. For the following questions, please indicate whether you believe that *web cameras* can be used by therapists to conduct therapy for clients with the following disorders: Please choose **all** that apply.

Agoraphobia
Substance Abuse problems
Bipolar 1
Bipolar 2
Major Depressive Disorder
Dysthymia
Generalized Anxiety Disorder
Social Anxiety Disorder (Social Phobia)
Specific Phobia
Obsessive-Compulsive Disorder
Panic Disorder
Post Traumatic Stress Disorder
Acute Stress Disorder

Gender Identity Disorder
Schizophrenia
Schizoaffective Disorder
None of the Above

17. I believe evidence-based computer-based interventions can be as effective as non-computer-based evidenced based interventions.

1	2	3	4	5
I Disagree	I Somewhat Disagree	I Neither Agree Nor Disagree	I Somewhat Agree	I Agree

18. I believe that standalone computer-based programs (e.g., interpretation bias retraining programs for anxiety or cognitive restructuring programs for depression) can be effective in providing a significant reduction in overall symptoms.

1	2	3	4	5
I Disagree	I Somewhat Disagree	I Neither Agree Nor Disagree	I Somewhat Agree	I Agree

19. If given the opportunity, I would use a *standalone computer-based program* as an addendum to face-to-face therapy (e.g., homework).

1	2	3	4	5
I Disagree	I Somewhat Disagree	I Neither Agree Nor Disagree	I Somewhat Agree	I Agree

20. If given the opportunity, I would use a *tele-health intervention* as an addendum to face-to-face therapy (e.g., homework).

1	2	3	4	5
I Disagree	I Somewhat Disagree	I Neither Agree Nor Disagree	I Somewhat Agree	I Agree

21. I think the following theoretical orientations/techniques can be effectively completed through web cam based therapy.

	1	2	3	4	5
	I Disagree	I Somewhat Disagree	I Neither Agree Nor Disagree	I Somewhat Agree	I Agree
Cognitive-Behavioral Therapy					
Behavioral Therapy					
Cognitive Therapy					
Psychodynamic Oriented Therapy					
Existential Therapy					
Systems Oriented Therapy					
Motivational Interviewing Techniques					
Group Supportive Therapy					
Parent Training Techniques					
Reality Testing (e.g., for those suffering from hallucinations and delusions)					

22. I believe that online services would be better for those who have previously attended f2f therapy.

1	2	3	4	5
I Disagree	I Somewhat Disagree	I Neither Agree Nor	I Somewhat Agree	I Agree

| | | Disagree | | |

23. I am apprehensive about online services.

1	2	3	4	5
I Disagree	I Somewhat Disagree	I Neither Agree Nor Disagree	I Somewhat Agree	I Agree

24. I feel I have adequate training and experiences to conduct internet-based therapies.

1	2	3	4	5
I Disagree	I Somewhat Disagree	I Neither Agree Nor Disagree	I Somewhat Agree	I Agree

25. Would you be more prone to use online services if you had additional/adequate training?

Yes   No

26. I believe that there is too little research on efficacious evidence-based online treatments for me to utilize such modalities.

1	2	3	4	5
I Disagree	I Somewhat Disagree	I Neither Agree Nor Disagree	I Somewhat Agree	I Agree

27. I would attend Continuing Education or seminars to educate myself on online and computerized interventions.

1	2	3	4	5
I Disagree	I Somewhat Disagree	I Neither Agree Nor Disagree	I Somewhat Agree	I Agree

28. If you do not endorse online or computerized services which is the primary concern? Please choose **all** that apply.

Privacy
Confidentiality
Crisis Situations
Billing
Licensure Issues
Lack of Research
Lack of Ethics Covering Usage
I Endorse Online Therapies

29. Please state any opinion/concerns you may have.