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Abstract

Videoconferencing is quickly becoming a part of daily life as technologies using the Internet and computer advances are now being employed to deliver synchronous, highly discernible video and audio content on devices used for daily communication.

Videoconferencing is also being increasingly used by counseling professionals to provide counseling sessions and other services, and counseling accrediting and licensing bodies have recognized its use in some professional practice situations.

This experimental study used a regional sample of counselors, other mental health professionals, and counselors-in-training ($N = 126$), to examine whether participants, randomly assigned, rated three different measures of counseling process—working alliance, session suitability, and counselor qualities—differently when witnessing two videos of a simulated, basic, sufficiently-working, typical, college mental health counseling session. The videos were produced to be equivalent, except that one was conducted by high-quality, dedicated videoconferencing technology (VC), and the other done in the traditional face-to-face (FTF) manner.

A discriminant analysis confirmed a significant difference between the FTF and VC groups. Examination of the canonical discriminant function revealed a large canonical correlation, with an effect size of 21.5 %. Standardized discriminant function and structure coefficients were examined to evaluate the predictors that contributed to the group differences. The main finding was that the quality of counselor attractiveness, and to a lesser extent, the bond in the working alliance, were most influential in contributing to this difference. Results also revealed that the groups did not differ on any of the control variables—age, gender, and attitude

toward technology. Results for the group centroids showed that the FTF group was substantially higher than the VC group, indicating that the group differences pertaining to counselor attractiveness and working alliance bond can be attributed to the FTF group. However, a comparison of the mean values for all of the counseling process variables showed that differences between the groups on almost all of the variables were very small. This indicates that, even with the significant finding of differences between the groups, participants found the FTF and VC sessions to be more similar than different.

Implications for common factors approaches and counseling practice are discussed.

PERCEPTIONS OF FACTORS RELATED TO THERAPEUTIC CHANGE IN
FACE-TO-FACE AND DISTANCE COUNSELING ENVIRONMENTS

by

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B.A., University of Rochester, 1977
M.S., Syracuse University, 1998

Dissertation

Submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy in *Counseling and Counselor Education*

Syracuse University

May 2012

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Introduction

According to Hanson, Curry, and Bandalos (2002), the essential outcome question, “Is psychotherapy effective?” has been answered affirmatively, with support from at least five decades of research (Lambert & Bergin, 1994; Smith, Glass, & Miller, 1980; Wampold, 2001). The authors assert, however, that an answer to the fundamental process question, “What makes psychotherapy effective?” has not been adequately determined. Furthermore, they cite the pervasive need for research on factors that affect the counseling change process.

As the fields of counseling and psychotherapy venture ahead in the twenty-first century, an additional need for research on the causal factors involved with making counseling effective has emerged, related to provision of direct counseling services by distance. Advances in technology are arguably driving the use of technology-based media in many forms of human communication, including counseling. Videoconferencing (VC), in particular, is an area of technology that has recently witnessed improvements in audio and video quality, and increased accessibility for everyday users of computers and their peripherals. *The NCC* (2006), the official newsletter of the National Board for Certified Counselors (NBCC), in explaining the need for the introduction of the Distance Counseling Credential (DCC), emphasizes that distance counseling involves the use of unique counseling skills that are grounded in, but go beyond traditional, face-to-face counseling skills. Compared to years past, in which the use of videoconferencing was a rare event, counselors and clients are now using VC more extensively and beginning to explore how best to use this special environment to work together collaboratively to form a therapeutic relationship and instill processes and qualities that will promote positive outcomes.

The current study examines the fundamental topic of whether distance counseling, in this case videoconferencing, can facilitate a “plainly satisfactory” counseling process, and to explore

some of the factors and aspects related to its use by counselors and other mental health professionals. Counseling facilitated by VC, for the purposes of this study, refers to counseling that is done by a point-to-point videoconference in which the counselor and client are in two separate locations and which is conducted by means of contemporary videoconferencing equipment, which, in most cases, uses Internet technology.

A 2008 survey conducted by the American Psychological Association (2010) reports that, between 2000 and 2008, practitioners' use of telepsychology is on the rise, and, in particular, the use of videoconferencing to provide direct health services rose from 2 percent to 10 percent. As videoconferencing technology continues to improve and become easier to use (e.g., now included with some cell phone services), the trend of mental health practitioners increasingly using videoconferencing to provide direct services is expected to continue (Jacobsen & Kohout, 2010).

In a Delphi Poll on the future of psychotherapy in the first decade in the new millennium, Norcross, Hedges and Prochaska (2002) reported that "virtual therapy services were expected to flourish" (p. 316), including distance counseling methods such as videoconferencing. Based on the responses of 62 psychotherapy experts, counseling methods distinguished by computer technology were predicted to increase, with computerized therapies ranked fifth in the category, Predicted Changes in Therapeutic Interventions. Similarly, Internet therapy services and telephone therapy services were ranked as second and fourth, respectively in the category, Predicted Changes in Psychotherapists. Looking back to 2002, it appears that these predictions, particularly for distance counseling, have been born out in the years that have followed.

Videoconferencing, perhaps more than any other medium, is currently changing how we deliver counseling. For instance, videoconferencing is being used to connect clients in

geographically remote areas, persons who may have difficulty getting to counseling—persons with agoraphobia, persons with disabilities, persons who might otherwise not seek counseling, and individuals whose jobs require travel, to counseling services (Mallen, Vogel, Rochlen & Day, 2005).

In their extensive review of online counseling research, Mallen et al. (2005) recommend that “furthering the quality and quantity of research in this area should provide critical information on both the positive and negative aspects of online counseling” (p. 847). Furthermore, they recommend that future research should focus on factors of process and outcome that have already been researched in face-to-face (FTF) forms of counseling. The authors point out that:

Common factors of effective FtF counseling have been identified (Wampold, 2000), and these factors should be examined to see the degree to which they are present in an online-counseling session. Preliminary research has suggested that these important common factors can be achieved in online counseling. (p. 847)

Furthermore, they assert that, in addition to measuring process and outcome variables from the client’s perspective, it will also be important to measure therapists’ evaluation of online mental and behavioral health services. Research has demonstrated that therapists have been less favorable toward online services than have clients, and this dynamic should continue to be evaluated (pp. 847 – 848).

Recognition by Major Accrediting and Licensing Organizations

A prominent indication of the increasing prevalence of distance counseling for the provision of direct services in the mental health fields is its, now, wide recognition by major accrediting and licensing organizations, and their affiliated bodies. Notably, the National Board

for Certified Counselors and the Center for Credentialing and Education (CCE), an affiliate of NBCC, have recently issued *The Practice of Internet Counseling* (2009), the document that specifies the principles by which the advancing practice of Internet counseling is to be guided. It states that, “the delivery of technology-assisted distance counseling continues to grow and evolve.... The rapid development and use of the Internet to deliver information and foster communication has resulted in the creation of new forms of counseling” (p. 1). Specified in its taxonomy is video-based counseling, with definitions for individual, couple and groups modes. Related to the purpose of this study, the definition for video-based individual Internet counseling is the following: “involves synchronous distance interaction between counselor and client using what is seen and heard via video to communicate” (p. 3). Furthermore, the document, in defining forms (modalities) of counseling, specifies that distance counseling may be the selected medium due to necessity or preference:

The selection of a specific form of counseling is based in the needs and preferences of the client within the range of serves available. Distance counseling supplements face-to-face counseling by providing increased access to counseling on the basis of necessity or convenience. Barriers, such as being a long distance from counseling services, geographic separation of a couple, or limited physical mobility as a result of having a disability, can make it necessary to provide counseling at a distance. Options, such as scheduling counseling sessions outside of traditional service delivery hours or delivering counseling services at a place of residence or employment, can make it more convenient to provide counseling at a distance. (p. 2)

It can be inferred from this statement that NBCC and CCE recognize that counseling processes in a distance format can be effective in many situations, otherwise; there would not be this prescription based on necessity and convenience.

Similarly, the American Counseling Association (ACA, 2005) provides ethical guidelines for the appropriate use of technology, including distance counseling, in its Standard, A.12, entitled Technology Applications, in the ACA Code of Ethics. Kaplan (2006) quotes Christine Moll, member of the ACA Ethics Revision Task Force, that, in regard to Standard A.12, it “is meant to be educational, visionary and inspirational. It therefore outlines areas that counselors need to learn about if they choose to utilize technology in their direct services, teaching or supervision” (p. 3).

Furthermore, in recognition of the increasing prevalence of distance counseling and the special skills needed to provide best practices via this medium, the CCE, in January 2004, established a credential for counselors –the Distance Credentialed Counselor (DCC). Counselors are eligible to apply for this credential if they are licensed to practice counseling or a related field and have successfully completed the required fifteen-hour DCC training course accredited by CCE. In the fall of 2006, *The NCC* (2006) reported an increase in the demand for the DCC credential: “the number continues to grow rapidly as more and more counselors move toward technology assisted methods, including teleconferencing, ...and videoconferencing”(p. 5). According to *The NCC*, “distance counseling is a counseling approach that takes the best practices of traditional counseling as well as some its own unique methods...In its own way, distance counseling presents special advantages beyond replication of best practices from face-to-face counseling” (p. 5). *The NCC* further specifies that, “telecounseling...techniques demand special counseling and communication skills from the counselor and the client” (p. 5). This

language as well implies that distance counseling can sustain the processes that can make for a feasible and competent session, and further suggests that processes and techniques, though grounded in traditional, FTF practices, may be different or go beyond what is required for FTF.

In addition, the Association for Counselor Education and Supervision (ACES) established the *Technical Competencies for Counselor Education: Recommended Guidelines for Program Development* (2007), in which it specifies eleven technical competencies that master's and doctoral students in counseling need to acquire in their curricula in order to promote a level of technological literacy that will allow graduating students fully participate in counseling practice in the twenty-first century:

Application of technology into counseling practice holds promise to enhance practice management, client and professional education and access to information that can directly impact counseling effectiveness. Use of various forms of technology can be adjunctive to practice and designed to facilitate human interactions that are the foundation of counseling efficacy. (p. 1)

Specifically, Competency 2 recommends development of the ability to use videoconferencing equipment for a point-to-point videoconference based on the rationale that this “will facilitate counseling professionals’ participation in a variety of supervision, teaching, collaboration and professional development opportunities” (p. 3).

Potential Benefits to Counseling by Videoconference

Beyond its recognition by major accrediting and licensing organizations, the counseling literature has described some of the important potential benefits to the uses of counseling done by VC. These benefits are sufficient and principal reasons for pursuing research in this area and

for practitioners, researchers, counselor educators, supervisors and consultants, clients, and others to further its use.

First and foremost is the potential for counseling by VC to reach new and underserved clients and to extend the provision of services (Mallen et al., 2005). In particular, there is the potential to provide services to client populations that may not be receiving sufficient counseling or that might otherwise not seek counseling in FTF sessions due to fear, stigma, availability, or convenience – men, teenagers, persons of color, LGBT persons, persons with disabilities, older adults, prison inmates, persons with chronic health conditions, persons with HIV, persons with certain mental health conditions—depression, social phobia, agoraphobia, persons who are not matched in language, families whose members are separated by distance, and military service members (Rochlen, Zach & Speyer, 2004). Similarly, counseling by VC may be a vital means of extending services to populations that might be more isolated due to geographical distances: persons in rural areas, persons in remote locations where there are no mental health providers in their immediate community, clients who do a substantial amount of travel, and business persons with hectic and variable schedules. It is expected that these factors of increased access and convenience could lead to a greater continuity of care for many clients.

Second, Mallen et al. (2005) suggest a number of benefits to the client and the therapeutic process from computer-mediated counseling, of which VC is a prominent type. Distance counseling can create an environment that a client can, in part, control, and this aspect can be empowering to clients, helping them to build greater strength and resilience. The authors state that:

By allowing an individual to receive treatment without coming directly to a counseling psychologist's office, online-counseling methods may result in the client's feeling less

dependent on his or her therapist. Not only may a client feel more comfortable in his or her normal environment, but in some modes of online counseling, the client may also have more control over self-presentation and can think through what he or she wants to say. (p. 849)

Third, in the area of multicultural counseling, there are also potential benefits to counseling by VC. Counseling by VC may be the primary means of providing clients access to counselors who have expertise with their ethnicity or cultural background. In addition, for persons for whom English may be a new language, counseling by VC may give them access to counselors who speak their native language (Mallen et al., 2005).

Fourth, counseling by VC is also expected to enhance educational and career development counseling opportunities and services. Mallen et al. (2005) point out that clients who seek these services may not (always) be looking for them to be delivered FTF. Given the abundance of information that is often available on the web, VC career and educational counseling sessions may effectively help clients in sorting out this information and identifying the most valuable resources. VC counseling interactions may allow career counselors an additional means to provide accurate information and useful interpretations regarding career assessments (Mallen et al., 2005). VC career counseling is also likely to be effective in the areas of academic advising, mentoring, coaching, and practice interviewing (Knouse, 2001).

Fifth, similar to educational and career counseling, distance counseling by VC is potentially a boon to counseling in the areas of prevention, psychoeducation, and wellness (Kirk, 2000). Sessions with counselors may serve to refer clients to psychoeducational resources and to clarify information that the client has acquired (Mallen et al., 2005).

Sixth, distance counseling also presents some potential benefits for counselors and their practices. According to *The NCC* (2006), distance counseling may benefit counselors by helping them reach and serve a greater number of clients, allowing them to conduct sessions when the client is not able to meet FTF. *The NCC* also points out that distance counseling may help counselors accommodate client preferences—that some clients may “seek distance counseling for practical/logistical and personal preferences” (p. 5).

Seventh, distance counseling is likely to change and potentially improve the ways that supervision and consultation related to counseling are done (Kanz, 2001). Especially supervision and consultation sessions done by VC have the capability of making available expert supervisors or consultants who might otherwise not have been able to participate due to distance (Mallen et al., 2005). Similar to counseling sessions, VC has the potential to increase counselors’ access to supervision, which can generally be expected to lead to greater quality of care for the client provided by the supervisee or consultee (Clement, Brooks, Dean, & Galaz, 2001).

Lastly, related to access to counseling services, are the potential cost and efficiency benefits associated with the provision of services by VC in remote and rural areas and to certain populations. These include those who may reside in institutions or be homebound such as persons with disabilities, prison inmates, older, and those with chronic illnesses (e.g., AIDS) (Liss, Glueckauf & Ecklund-Johnson, 2002). Liss et al. note that for some rural specialty care populations (such as epilepsy and traumatic brain injury),

rural patients and their families must bear the inconvenience and high cost of transportation, parking, and time away from work, along with the associated wage loss.

From the consumer’s perspective, it may be substantially more efficient to obtain

telehealth consultation, treatment services, or both at their local health department than to drive several hours for similar care. (p. 10-11)

Consultation and treatment services conducted by VC clearly have the potential to create positive efficiencies in the areas of cost, need to travel, time spent on travel, and the need for additional staff and facilities, among other factors (Liss et al., 2002).

It must be mentioned here that, in addition to the benefits described above, some authors have pointed out a number of potential limitations and challenges associated with distance counseling. These included the lack or the minimization of non-verbal clues, the need for prior assessment, ethical and liability issues, safety (Alleman, 2002), crisis management, limitations in counselor's or client's technical abilities, and technical issues—losing connection, time delays, and poor connections leading to the misreading of visual cues (Mallen et al., 2005).

In their review of online-counseling research, Mallen et al. (2005) call for “furthering the quality and quantity of research in this area” (p. 847). The authors point out here that counseling by VC is especially amenable and adaptive to both quantitative and qualitative research. For VC done with high-end technology (e.g., dedicated Polycom cameras), capturing the audio and video content at both ends of an interaction is accomplished in a straightforward fashion by connecting lines out of the camera to a recording device such as a camcorder, thus recording the content displayed on the monitor and emanating from the speakers. The resulting files can be combined into an integrated one that provides an accurate and detailed account of what transpired in a session. For purposes of research, this record can then be reviewed and rated by clients, counselors, supervisors, expert observers, and others.

In summary, there is evidence that distance counseling may provide benefits for certain types of counseling or counseling populations. Multicultural counseling, educational and career

counseling, wellness counseling and counseling aimed at prevention, and supervision and consultation, were all types of counseling for which there may be benefits. The counseling populations that may benefit include: persons with disabilities, men, teen agers, persons of color, LGBT persons, older adults, prison inmates, persons with chronic illnesses, persons with certain mental health conditions, family members separated by distance, persons in the military, and persons who frequently travel, as well as counselors, supervisors and counseling consultants.

An Overview of Videoconferencing Technology

Given the potential benefits to the uses of counseling done by VC, it is important next briefly to review some of the recent developments in videoconferencing technology, and some that are anticipated in the twenty-first century. Videoconferencing technology that uses the ever-increasing bandwidth of the Internet is a relatively recent development in the technical realm and is arguably changing the way we communicate. From webcams (now standard, built-in components of many laptop and desktop models) to elaborate telecasts like the Metropolitan Opera (2011) that use a complex array of high-end cameras and elaborate production studios to create a rich high-definition broadcast, videotechnology is touching and connecting many people, including counselors and clients. Indeed, a recent Cisco Systems (2008) television advertisement, showing two grade school classrooms interacting across continents, boldly proclaims that, "Being here is being there."

For the purposes of this study, it is important to note that videoconferencing via the Internet became available in 1992, soon after the public introduction of the Internet. Initially low in quality, upgrades to systems and software, and access to ever-increasing bandwidth have led to substantial improvements, with dedicated systems capable of delivering rich video in real-life size, and distinct and synchronous audio. In the coming years, perhaps the most dramatic

development affecting daily life related to videoconferencing will be the prevalent use of personal computer-based technologies such as Skype, iChat, and Adobe Connect. In addition, these technologies are currently being adapted to cell phones and other portables (such as iPads), and feature video cameras and synchronous video (and audio) transmission.

Guiding Question for the Study

Despite its increasing prevalence in counseling practice, the possibility of counseling done by VC has been minimally studied. In particular, counselor perspectives about its use have been little studied, and, in its simplest form, counselors comprise the vital other half of the counseling relationship. It is suggested that we, as counselors, need to know what we are getting into when we do counseling by this modality. A fundamental question that guides the current study is: can a basic, satisfactorily competent counseling process be adequately facilitated by current videoconferencing technology? Here, ‘basic’ refers to counseling in its simplest configuration—a single client and single counselor, and ‘satisfactorily competent’ refers to a counseling process that is working for the client and counselor—they are able to establish rapport, have reasonably meaningful exchanges on topics relevant to the client’s needs, and the counselor’s interventions are appropriate and based on established standards of practice. ‘Adequately facilitated’ means that the transmission of the session is highly discernible to the viewer both visually and aurally, and that there are no distracting delays, interruptions or other changes to the signal that affect the synchronicity of the event.

Purpose of the Study

The essential purpose of this study is to determine whether counselors, functioning as expert observers, perceive differences in the VC and FTF counseling processes shown in two videos depicting a basic, satisfactorily competent counseling session. By ‘satisfactorily

competent', it is meant that the counselor and client were communicating in a way so as to promote appropriate counseling exchanges and interactions.

More specifically, the study examines whether counselors (and counselors-in-training), randomly assigned, rate three different measures of counseling process—working alliance, session suitability, and counselor competence—differently when witnessing two videos of a simulated, basic, sufficiently-working, typical, college mental health counseling session segment (at its beginning) that were produced to be equivalent, except that one was conducted by high quality, dedicated videoconferencing technology, and one that was done in the traditional face-to-face manner.

In designing the study, the intent was to construct the videos to be like what the participants have witnessed in their own training, supervision, or consultation experiences. They are also similar to the views that a counseling supervisor would have through a one-way mirror, a common live technique used in training, supervision and consultation.

In addition to this primary purpose, participants' age, gender and attitude toward the use of technology will be tested as control factors, as the mixed literature on these factors suggests.

Rationale for the Study

Although distance counseling has been studied previously (as will be covered later), numerous questions remain to be answered in relation to its provision: can counseling process be facilitated by this modality? And in what situations or contexts? What adjustments, changes or considerations does the counselor need to undertake in order to provide adequate counseling? It is proposed that it is logical to study counseling process first because if counseling process done by VC proves not to be satisfactory, then it would follow that counseling outcomes would also not be satisfactory.

In response to the question: “why is it important to study the modality of VC in possibly facilitating counseling process now?”, the most basic answer is that the VC technology has possibly improved to such an extent that it can arguably convey the high quality audio and video information needed for a counselor and client to communicate successfully and to form a satisfactory working relationship.

In addition, it is important to study counselors’ perceptions of the use of VC in counseling because the counselor perspective has been little studied. Counselors are the vital other half of the counselor-client dyad, and there is basically a dearth of research in the area of counselor reactions to the VC environment except for Rees and Stone (2005), and theirs has significant limitations. As will be covered in the review of the literature, other studies that look at the counselor’s perspective are best construed as exploratory with quite small numbers.

Framework for the Study

In considering the design of the study, it was deemed vital to use current, high-quality, dedicated videoconferencing technology because many of the previous studies did not, either because this technology was not available (due to the fast pace of technological developments) or because other VC technologies, such as webcams and Skype, were chosen to be studied. This was considered important as it presented to the counselors viewing it, a counseling session conducted via videoconference, with nearly optimal conditions. Producing the VC video with optimal conditions was viewed as crucial to the study as it portrayed the distance situation in the best light possible in relation to the FTF situation, in terms of quality of video and audio information, and synchronicity.

Next, an analogue research design was chosen because of its ability to focus almost entirely on the experimental factors in question—the modality by which the counseling session is

delivered (FTF or VC). According to Kazdin (2003) and Heppner, Kivlighan, and Wampold (1992), an analogue design can be especially appropriate in studying a specific aspect of a clinical application, in this case, counseling process in two different types of environments.

An analogue research design has advantages in that important threats to its internal validity are minimized. Kazdin (2003) explains that:

An analogue study usually focuses on a carefully defined research question under well-controlled conditions. The purpose of the research is to illuminate a particular process or to study treatment that may be important in clinical applications. The process or topic is considered to closely resemble or to provide a model for some phenomenon that is more difficult to study or to isolate in everyday life. (p. 141)

In the literature, there are a number of studies that effectively employ an analogue design to focus on a clinical process or factor that would be difficult to study *in situ*. Lakey, Cohen and Neely (2008) used analogue videos of therapists to isolate relational effects in psychotherapy, with clients and students rating the viewed videos on expected therapist supportiveness and expected therapy process constructs. Dalgin and Bellini (2008), in a study of the impact of invisible disability disclosure on employers hiring decisions and views of employability, used videos of short employee interview vignettes to focus on key aspects of invisible versus visible disabilities. Li, Kim and O'Brien (2007), Del Vento, Bavelas, Healing, Maclean, and Kirk (2009), Tashiro and Frazier (2007), and Leierer, Strohmer, Leclere, Cornwell and Whittens (1996) are other studies that effectively use analogue designs with videorecording processes to isolate and examine questions related to counseling and psychotherapy.

In this case, it is the experimental conditions, FTF and VC, which are difficult to isolate in *in situ* situations; the analogue design permits these conditions to be controlled so that the

differences between the two groups are limited to the modality used in the simulated counseling segment. In designing this study, one model envisioned was requesting dyads of counselors and clients to undergo actual counseling sessions and to randomly assign them to the FTF or VC condition. Experiments with this design were considered to have the potential to introduce many confounding variables and thus produce alternative explanations for results—variability in counselor personality, style, skill, theoretical orientation, capacity for empathy, personal effectiveness, to name a few, and there could be similar types of client variability, as well as variables that result from the particular counselor and client interaction.

Another advantage to the analogue design is that by being once removed from the counseling situation, counselors who are witnessing these videos have the opportunity to be more focused—to not become distracted by myriad events that could occur (internally and externally) if they were actually in the counseling situation. It is also pointed out that counselors are currently very familiar with using and viewing video recordings, which have become the standard (in comparison to audio-only recordings) for counseling practice, supervision, consultation and education.

Heppner et al. (1992) define analogue research in counseling as: “research that is conducted under conditions that resemble or approximate the therapeutic situation” (p. 305). The authors point out that, in attempt to adhere to Kerlinger’s “MAXMINCON” principle (Kerlinger & Pedhazur, 1973), some researchers have turned to an analogue research design in order to “reduce bias and extraneous variables by creating tightly controlled conditions that approximate the counseling context” (p. 305). Kerlinger’s often-cited principle proposes to define what is meant by variance control in experimental research, with “MAX” referring to maximizing the variance associated with the relationship between the predictor and criterion variables, “MIN” to

minimizing the error variance related to measurement of the criterion variables, and “CON” to controlling extraneous variance attributable to other variables not included in the study.

In keeping with Bordin’s (1965) rules for achieving “acceptable” simplifications, the chief aim of which is to avoid oversimplifications of the phenomenon of interest, the current study starts and keeps in central focus on the natural phenomenon of interest (first rule)—the basic, satisfactory counseling process that is occurring in the initial phase of a counseling interview. In addition, in reference to Bordin’s second rule, which specifies that, “the degree to which a researcher can safely depart from the naturalistic setting is proportional to the amount already known about the phenomenon in question” (Heppner et al., 1992; p. 307), the current study is viewed to be reasonably safe in departing from the naturalistic setting, as the other significant study (Rees & Stone, 2005) of counselor perceptions of counseling done by videoconference also had an analogue design.

Despite its limitations, especially in terms of external validity, the analogue design, with adequate numbers (to be discussed later) of participants, was calculated to result in a small, but important knowledge claim about whether counselors view counseling, in some forms, as being feasible by VC in some practice situations. Furthermore, the design employed here permitted the isolation and examination of specific small events—the counselor interventions, which were construed to be fundamental listening and attending skills (Ivey, Ivey & Simek-Downing, 1993). The design also helped with the reduction of practical obstacles, particularly with subject availability as a fully powered *in situ* design was beyond the financial limits of this study.

Conceptual Foundations for the Study

Given the foregoing purpose and rationale, it is central in this section to further explain the conceptual foundations that underpin and inform them. These are derived partly from a reasoned argument and partly from fundamental counseling theory.

In terms of reasoned argument, the basic logic supporting the study is that both the FTF and VC environments provide the transmission of the sufficient sensory information (i.e., the visual and auditory information; this information corresponds to what is described in the counseling field as verbal and non-verbal information) needed for participants to effectively communicate in a counseling context. Very basically, it is proposed that the VC modality successfully communicates all of the interactions between the client and counselor needed for sufficient counseling. It follows that, if the stimuli produced in the VC and FTF counseling environments were essentially equivalent, and if the participants in these environments (in this case the counselor and client actors) perceived these stimuli as equivalent and acted accordingly, then counselors observing recordings of these equivalent interactions in these environments, would perceive no difference in the demonstrated counseling process.

The basic arguments that the previous contentions are plausible are: first, it is fairly intuitive that, these days, VC facilitates basic human communication. Assuming a reasonable quality connection, even a first time user of Skype or a Polycom dedicated system can easily attest that VC is effective in synchronously connecting two persons by providing very discernible audio and visual data. And, because of being able to see the other person (even just a head shot), it is immediately apparent to the user that VC is a richer environment than a telephone call because it contains much of the non-verbal, visual information being conveyed by an individual.

Second, anecdotally, it seems to be the case that, especially in recent years, commonly available forms of VC are capable of facilitating basic counseling. An example of this trend is the 2008 APA survey (Jacobsen & Kohout, 2010) in which licensed psychologists indicated that they were using videoconferencing in increasing numbers (up to 10 percent in 2008). And it can be surmised that this must be true for counselors and other mental health professionals all over the country; so much so that NBCC now offers a Distance Credentialed Counselor (DCC) credential.

Third, there is ample empirical information that the telephone can be effective in facilitating counseling in some situations. A summary of this literature is found in Mallen et al. (2005). This is also true of text-based forms of communication—email and synchronous chat. These text-based forms of communication are traditionally devoid of audio information and contain visual information only in the form of text. If these forms of distance counseling can be effective, then VC, an arguably richer form (one that contains both verbal and non-verbal, audio and visual information) of communication, can be as well.

In addition to reasoned argument, fundamental counseling theoretical models also served as conceptual bases for guiding the study. In particular, the design and development of the stimulus videos are informed primarily by the works of Carl Rogers, Allen Ivey, and Bruce Wampold.

Perhaps as early as the 1930's, mental health scholars and researchers had observed that very different approaches to psychotherapy and counseling shared common elements and fundamental qualities (Rosenzweig, 1936). In addition, noting that these dissimilar approaches all could claim positive counseling outcomes to their credit, Rosenzweig cited the now infamous Dodo Bird pronouncement from Alice's Adventures in Wonderland (Dodgson & Tenniel, 1941),

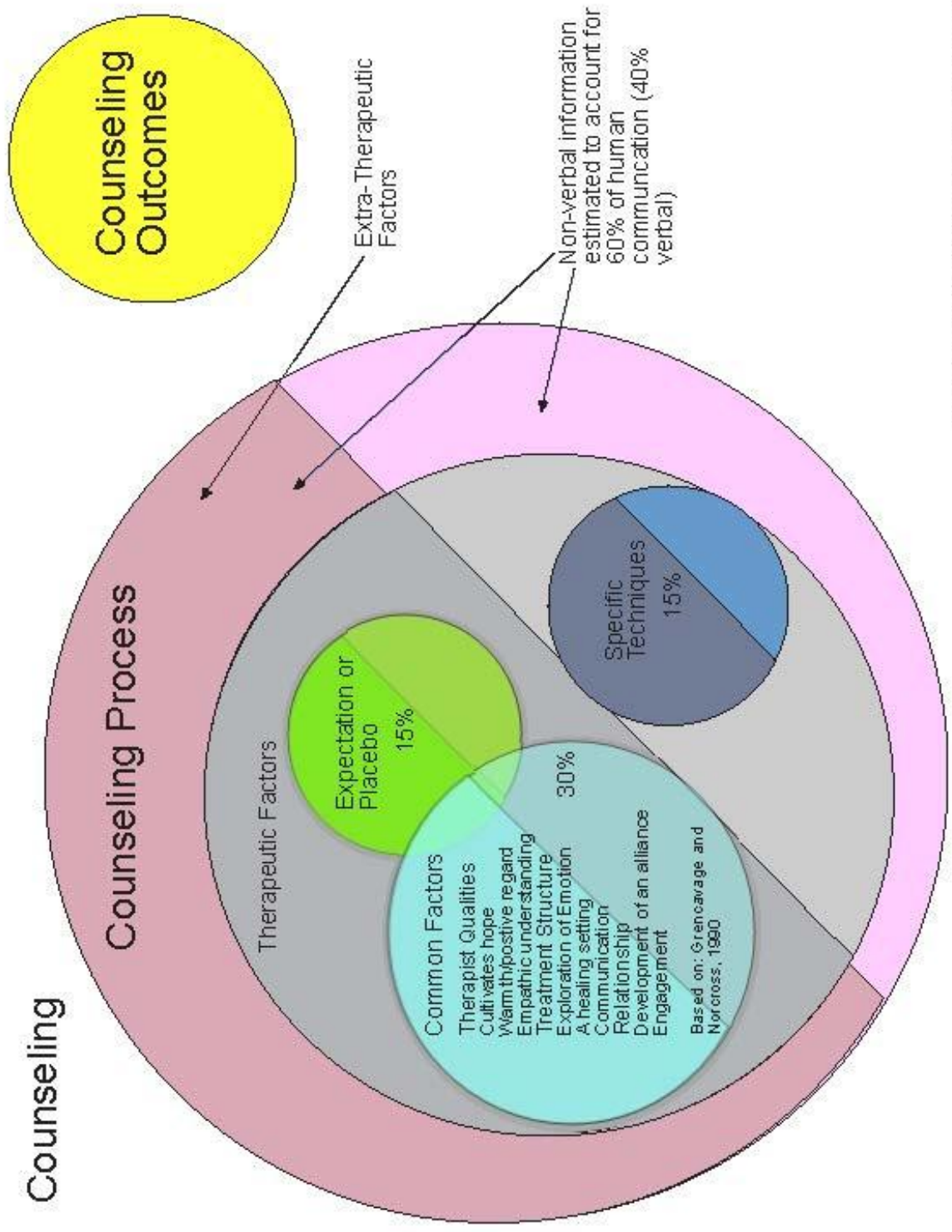
“Everybody has won and all must have prizes.” In 1940, Sollod (1981), citing the observations of Goodwin Watson at the time, reports of a meeting among such diverse persons as Saul Rosenzweig, Alexandra Adler, Frederick Allen, and Carl Rogers, to distinguish areas of commonality among successful approaches to psychotherapy. Watson reports that the group reached consensus that insight, support, behavior change, specific therapist qualities, and a positive therapeutic relationship were common and central factors. This meeting perhaps marked the historical beginning of the development of the common factors approach.

Common Factors Approach

In answer to the question, “What makes psychotherapy effective?” one, which is supported in the counseling literature, is that common factors (therapist qualities, certain change processes, and relationship factors) can make a large difference (Wampold, 2007; Imel & Wampold, 2008). In their review of the psychotherapy literature related to common factors, Lambert and Barley (2002) conclude that common factors account for approximately 30% of the variance in treatment outcomes, whereas specific techniques and expectation or the placebo effect account for approximately 15% each. (Figure 1 provides a Venn diagram depiction of common factors based on Lambert and Barley). Furthermore, Wampold (2001), in a large review of the quantitative literature, found that 70% of the benefits of counseling were because of common factors, whereas, only 8% were attributed to specific ingredients/factors (e.g., techniques specific to cognitive behavioral, or psychodynamic approaches).

Given the central place of common factors research, it was important, in this study, to operationalize key aspects of them as the derivative question of, “Are perceptions of these aspects of common factors by counselors and counselors-in-training equivalent in FTF and VC contexts?” is examined. Based on this consideration, the key factors of therapist qualities,

Figure 1



Based on: Lambert and Barley, 2002

therapeutic change processes, and relationship factors were foremost guides in the construction of the stimulus videos and in the selection of the process variables to be rated by the participating counselors and counselors-in-training.

In conceptualizing and developing the counseling situation for the videos, the intent was to portray the most basic, most fundamental aspects of the beginning of a counseling session. The reasoning behind this was that if the distance counseling environment could not adequately facilitate the most basic, beginning types of interventions, then more complex counseling interventions, such as developing insight and promoting action, would also not be facilitated.

Rogerian therapy can be considered to be the starting point from which this study was conceptualized because of its emphasis on the development of the therapeutic relationship, a cornerstone of common factors theory (Imel & Wampold, 2008). Essential to conceiving and constructing the counseling situation that is portrayed in the stimulus videos (the representation of counseling that is the primary object of this study), is Rogers' (1957) first condition for therapeutic personality change—"two persons in psychological contact" (p. 257), the minimal relationship that is the fundamental beginning of the therapeutic alliance. In the videos, what is depicted is construed to be a basic, working relationship that has developed over a number of sessions and is, thus, at least a sufficiently minimal relationship, showing two individuals in psychological contact. With this in mind, the actors were coached to exhibit appropriate exchanges, to stay on topic, and to demonstrate attending behavior toward each other. In the latter stages of the development of the videos, aspects of these qualities were incorporated into the script and cues that resulted from the practice sessions.

The seminal work of Allen Ivey and his colleagues (Ivey, Normington, Miller, Morrill & Haase, 1968), because of its emphasis on the essential behaviors and interventions that the

therapist needed to enact in order to facilitate an empathic therapeutic relationship, was the second key perspective that guided the construction of the methods of this study. A primary intent was to include distinct examples of what Ivey (1969) describes as *counseling microskills*, and what Hill (2004) terms as *helping skills*. These *microskills* or *helping skills* represent the interventions and responses that, in a counseling session, lead to the establishment of a working alliance and the presence of other common factors. Ivey asserts that these are the: “underlying processes believed important to all approaches to counseling” (p. 19). In depicting the beginning segment of a session, the goal, therefore, was to provide the participant a sufficient view of principal examples of these underlying processes. In each of the seven exchanges between the counselor and client, the counselor’s responses were all designed to match what Ivey terms as attending and listening skills, and what Hill refers to as helping skills in the exploration stage, usually the beginning phase of a session. In the stimulus video for each the two types of environments, (i.e., VC and FTF), the counselor’s responses include demonstrations of: open questions, encouraging, summarizations, paraphrases or restatements, and reflections of feeling. It was the intent to portray these fundamental, basic counseling skills in the exploration stage of a session, as they serve to develop the rapport that is needed to set the stage for more complex interventions that often come later in the session such as focusing, interpretation, and confrontation or challenging. Again, the reasoning behind this choice was that if the distance environment could not support the most basic counseling microskills, then it also would not support the more nuanced ones.

Another main goal in the conceptualization and development of the methods was to avoid the inclusion of what Imel and Wampold (2008) describes as specific counseling factors—factors that usually relate to a specific theoretical counseling approach such as psychodynamic or

cognitive behavioral approaches. The basic thinking behind this was that it was important to have participants focus on basic, elemental common factors related to therapist qualities, elements of the counseling relationship, and some treatment structures that support the counseling process, and to not have to integrate these into the additional context of a theoretical approach.

Conclusion

Using the current findings from the field on counseling and videoconferencing, and building on the relatively few studies that focus on the counselor's perspective, this study aims to investigate, from the perspective of expert observers, counselors' views on the use of videoconferencing in counseling. Utilizing a regional sample, the research design outlined and implemented herein responds to specific recommendations in the literature to further study the use of current dedicated VC systems that maximize the use of available bandwidth, and to explore counselors' perspectives. It also builds upon the author's previous research on counselors' responses to viewing the VC counseling environment. Primarily exploratory in nature, the findings herein may point to the breadth and depth of issue as it is perceived by the profession, and may serve as the basis for further *in situ* studies on the same topic. They may also provide preliminary insights into the types of counseling situations that may be the best-suited for the use of videoconferencing.

The ensuing review discusses the factors that make counseling effective, a brief history of videoconferencing, the empirical underpinnings of the use of videoconferencing in counseling, and the relevant literature related to age, gender and attitudes toward technology. This is followed by a description of the framework for the study, including the key research question and hypothesis that guided this inquiry.

Review of the Literature

Factors that Make Counseling Effective

As early as the 1930's, it was recognized that all of the major theoretical approaches to counseling had reported positive outcomes associated with counseling conducted with their specified techniques. Noting this development, Rosenzweig (1936) and others began to inquire about the commonalities among these approaches. If it were generally true that many of these approaches were effective in bringing about positive outcomes for clients, then it was reasonable to wonder what these seemingly disparate approaches had in common in terms of fostering conducive counseling processes. Rosenzweig postulated that one possible answer was therapeutic common factors and he suggested that these might include the therapist's personality, catharsis or the release of emotion, and psychological interpretation (Grencavage & Norcross, 1990).

Just several years later, Watson (1940) recounted the outcomes from a meeting that included such varied persons in the counseling field as Carl Rogers, Alexandra Adler, Frederick Allen and Saul Rosenzweig. The purpose of this meeting was to explore areas of agreement among the current psychotherapeutic schools of thought, and the group reached consensus that support, interpretation, insight, behavior change, a positive therapeutic relationship, and certain therapist qualities were common features of effective counseling.

In recent times, the common-factors approach has been identified as one of the three central features of the psychotherapy integration movement; the other features specified as theoretical integration and technical eclecticism (Grencavage & Norcross, 1990; Norcross, 1986). The common-factors approach searches for the core ingredients among the different

theoretical approaches that may contribute to the development of more effective counseling interventions and processes.

Imel and Wampold (2008) introduce a current common factors perspective, *the contextual model*, which is compared with the medical model, which suggests that psychotherapeutic treatments directly address a specific underlying disease state and biological dysfunction. The authors note that, unlike other studies in social science in which the independent variable can be closely controlled, psychotherapy is notoriously difficult to study. In addition, the increasing abundance of treatment models and techniques (Bergin & Garfield, 1994) creates a wide range of therapeutic practices, which in first consideration, seem quite diverse and complex. One customary approach for dealing with this complexity is to treat each therapy or therapeutic technique as a distinct observable occurrence, each with explicit criteria and training for the achievement of specific counseling interventions so that the causal mechanisms for a particular procedure can be examined. On the other hand, Imel and Wampold maintain that “a common factors approach to understanding the effects of psychotherapy holds that the unique theoretical content of an intervention is not an important guide to the mechanisms responsible for client change” (p. 249). Rather, the main emphasis of this approach is to attempt to determine the key, core ingredients present in all effective theoretical approaches so that a more parsimonious explanatory model can be constructed.

Toward the end of developing a more integrated and parsimonious explanatory model of the mechanisms of change in counseling, a number of common factors models have emerged. Highly notable is the foundational work of Sol Garfield. In his book, *Psychotherapy: An Eclectic-Integrative Approach* (1995), he described the following change factors that are common to all effective therapies: (a) the therapeutic alliance, (b) interpretation, insight, and

understanding, (c) cognitive modifications; (d) catharsis, emotional expression and release; (e) reinforcement; (f) desensitization; (g) relaxation; (h) information; (i) reassurance and support; (j) expectancies; (k) exposure to and confronting of a problem situation; (l) time; and (m) the placebo response (Imel & Wampold, 2008).

Due to the recent focus on common factors research, the number of treatment variables identified as potential common factors has grown and reviewers of the literature have attempted to devise conceptual models that distinguish the usual categories of common factors. In their review of common factors research, Lambert and Ogles (2004) proposed a model of common factors based on when it was likely to occur in the counseling process. In this model, three factors, with over thirty agents in each category, are elucidated: (a) support factors, (b) learning factors, and (c) action factors, with support preceding learning, and learning likely to precede action.

In another review, Grenavage and Norcross (1990) identified 89 common factors and classified them into four general categories: (a) therapist qualities, (b) change processes, (c) treatment structures, and (d) relationship. The authors found that forty-one percent of the common factors reviewed were related to change processes that may be central to counseling approaches; most frequently cited were the factors of: therapeutic alliance, catharsis, practice and acquisition of new behaviors, and positive client expectations. The study herein examines factors related to therapist qualities, treatment structures and the counseling relations; i.e. three of the four general categories that Grenavage and Norcross describe. The fourth category, change processes, is not addressed in the study as the instruments chosen for it do not relate to the constructs listed under it.

In an empirical study, Tracey, Lichtenberg, Goodyear, Claiborn, and Wampold (2003) asked experienced psychologists to compare the similarity of common factors identified by Grencavage and Norcross that were drawn from 14 larger categories. A multidimensional scaling and cluster analysis revealed two types of themes or commonalities: (a) thinking (cool) and (b) feeling (hot) therapeutic activities; and three clusters or groupings: (a) bond, (b) information, and (c) role. Imel and Wampold (2008) point out that, since these categories were empirically derived and not likely influenced by the previous models of researchers, they may provide insight into how common factors come into play in practice processes.

In general, common factors appear to be crucial to successful counseling. Lambert and Barley (2002), in their large review of the psychotherapy literature, concluded that the common factors account for 30% of the variance in treatment outcomes, whereas specific techniques account for only 15%. Similarly, in a substantial meta-analytic integrative review, Wampold (2001) reports that common factors accounted for 70% of the benefits of psychotherapy, with specific ingredients accounting for only 8%. Imel and Wampold (2008) conclude that “research suggests that common factors account for a sizable portion of the variance (from 30% to 70%) in therapeutic outcomes and thus are likely important variables in the process of psychotherapy” (p. 255).

A Brief History of Videoconferencing

Despite recent recognition of its growing prominence, videoconferencing has a history spanning nearly ninety years. The first, simple analog videoconferencing systems accompanied the invention of the television by pioneers such as John Logie Baird, Philo Farnsworth, and Vladimir Zworykin (Tiedemann, 2004). Tiedemann, in a review of the history of videoconferencing, states that the first long distance video transmission was made in 1927, a

one-way, full motion video call from Secretary of Commerce, Herbert Hoover (in Washington, D.C.) to executives at AT&T in New York City. In the advent of World War II, the German postal system developed a network of closed-circuit television systems that used cable to connect Berlin and several other cities (New York Times, 1938). In the 1960's, NASA, during the first manned space flights, used two radiofrequency (UHF or VHF) links to create a closed caption TV channel to connect two distance locations. However, closed-circuit television systems were expensive and the cost of these systems severely limited their use in the fields of medicine, education, human services, and business (Firestone, Ramalingham & Fry, 2007). Technologies developed later in the 1960's and 1970's that employed normal phone lines such as the AT&T videophone (first issued in 1964) never prospered due to poor picture quality and the absence of an effective video compression capability (Bell Laboratories, 1969). The AT&T videophone, however, employing a 250-line video display using a bandwidth of 1-MHz, was an important forerunner of the technologies we use today (Tiedemann, 2004).

In the 1980's, the first audio and video compression systems were introduced, allowing for the development of digital telephony transmission networks such as integrated services digital network (ISDN). Later in the 1990's, based on the invention of efficient video compression technologies, internet protocol (IP)-based videoconferencing emerged (Harrison, 2009). This development along with the public introduction of the Internet in 1991, led to personal computer (PC)-based videoconferencing. In 1992, the development of INRIA Videoconferencing Systems and CU-SeeMe by Tim Dorcey and his colleagues at Cornell introduced videoconferencing to the general public. Since 1992, computer software and web plug-ins such as NetMeeting, Skype, MSN Messenger and others have allowed for the use of inexpensive, PC-based videoconferencing. Transmissions were initially low in quality, but in the

past few years, upgrades to systems and software, and access to ever-increasing bandwidth have led to substantial improvements of this low-end, PC-based videoconferencing in the areas of reliability, synchronicity, and audio and video characteristics (Harrison, 2009).

Currently, there are two main types of VC systems in use: high-end, dedicated systems meant for enterprise-level use, and low-end, desktop (and laptop) systems meant for personal use. Dedicated systems usually have integrated components with at least one high quality, remote-controlled video camera (such as Polycom and Axis), and omnidirectional microphones connected to the console or system. These are also known as pan, tilt and zoom cameras. A key feature of most professional, dedicated systems is the use of acoustic echo cancellation that can significantly reduce problems such as echo, reverberation, and feedback (Negash & Whitman, 2008).

Current trends in videoconferencing include the developments of multipoint videoconferencing systems, video telephony (videophone calls), and telepresence systems.

Multipoint videoconferencing is defined as VC with simultaneous connections among three or more remote points. This is accomplished by means of a Multipoint Control Unit, which acts as a bridge to interconnect the calls. Modern *video telephony* involves the use of mobile phones employing their internal video cameras (and microphones) to make video calls wirelessly through supporting Universal Mobile Telecommunications System networks. *Telepresence* systems are high-end, integrated systems using various technologies to accomplish videocalling and videoconferencing contacts. These can include state-of-the-art rooms with advanced cameras, displays, audio-systems, and processors that utilize very high capacity bandwidth transmissions to make one-to-one, one-to-many, and many-to-many connections for distance

education, telemedicine, business, and scientific research purposes, among others (Negash & Whitman, 2008).

Counseling with Videoconferencing Literature Review (Empirical)

This section reviews the empirical studies ($N = 19$) that have counseling facilitated by videoconferencing as their primary focus. The dates of these studies range from 1986, with the first empirical study of counseling using closed-circuit television (CCTV) (Dongier, Tempier, Lalinec-Michaud, & Meunier, 1986), to recent times (King, Stoller, Kidorf, Kindbom, Hursh, et al., 2009). These studies also reflect a range of technologies, with present-day high-end VC argued to be the closest to face-to-face in terms of the quantity and quality of information provided. Videoconferencing is unique among other forms of distance communication—telephone, text-based chat, email—in that it includes the visual (video) information from a counseling session. The empirical studies on VC will be reviewed in terms of the following themes: findings, types of research designs, measures, populations, ways that VC and FTF were operationalized, and technologies used. (Appendix A presents a summary table of these empirical studies.)

Findings

To date, the current knowledge base concerning the use of videoconferencing in the counseling process and determining counseling outcomes is not extensive. In general, the empirical studies that have examined the use of videoconferencing in counseling have demonstrated mixed results. More specifically (and this is the order in which they will be reviewed in detail), some studies have mixed results on the use of VC in counseling, some studies demonstrate support for VC, and one study demonstrates support for FTF as superior to VC.

Studies with Mixed Results

A number of studies ($n = 7$) have reported mixed results in terms of support for the use of VC in counseling. These include: Dongier et al. (1986), Sorlie, Gammon, Bergvik, and Sexton (1999), Stevens, Doidge, Goldbloom, Voore, and Farewell (1999), Schopp, Johnstone, and Merrel (2000), Glueckauf, Fritz, Ecklund-Johnson, Liss, Dages, and Carney (2002), Wade, Wolfe, Brown, and Pestian (2005), and Khasanshina, Wolfe, Emerson, and Stachura (2008). Of these, all used a FTF comparison except for Wade et al. (2005), which studied the use of VC only.

In perhaps the first study to use a control group to compare the use of two-way closed-circuit television (CCTV) with face-to-face contact in psychiatric interviews, Dongier et al. (1986) examined the responses of three groups to the process of these interviews: patients, consultants (visiting psychiatrists who were conducting the interviews with the patients), and consultees (hospital professionals whose work with the patients was ongoing). The authors found no significant differences in how patients rated aspects of the interview on an instrument that was devised for this experiment. The visiting psychiatric consultants and hospital professional consultees, however, rated CCTV as significantly inferior to FTF for the purpose of determining global assessment and diagnosis. These two conditions were assessed with a different instrument, also devised for this study.

A patient group ($n = 50$), including adults and children) for the experimental condition was selected from a larger group of 200 consecutive interviewees, and a control group ($n = 35$) was selected that matched the previous group in terms of diagnosis, sex, and age. Consultees (hospital staff professionals working with the patients) and consultants (visiting psychiatrists, $n = 3$) rated the two conditions with a different instrument also devised for this study. The size of the

consultee group is not specified, nor is it indicated whether these participants took part in both conditions. A majority of the CCTV patient interviews were rated “above average in comparison with past experience” (p. 33). However, a two-tailed t test demonstrated no significant ($p > .10$) differences between the patient CCTV and control groups. Consultees also rated CCTV as better than average in comparison to their prior experience. The consultant group was comprised of only three participants and presumably they took part in both conditions. The size of the consultee group is not specified, nor is it indicated whether these participants took part in both conditions. Overall, the authors found support for the use of CCTV as an adjunct to face-to-face interviews particularly in remote regions.

Sorlie et al. (1999) evaluated the quality of the supervision process in FTF and videoconferencing-based (VC-based) sessions. The study examined the responses of six dyads of psychiatric supervisors and their trainees, and the main findings were that there were no differences between the modalities of VC and FTF on ratings of quality of communication and the supervisory alliance, but that psychiatric trainees scored higher on disturbing (upsetting) factors in the VC condition compared to FTF.

The six pairs of supervisors and trainees participated in five alternating FTF (A) and VC (B) sessions, following a basic ABAB design. Both trainees and supervisors provided self-report information on the quality of communication, the supervisory alliance, and disturbing elements in the sessions. Additionally, an independent rating of the videotaped sessions was conducted by external supervision pairs to validate the questionnaire that was developed for the purpose of this study, and a qualitative interview was completed with the participants at the end of each session. Using a procedure in which the ratings in each condition were nested for each supervisor and supervisee, the overall means among the variables were then analyzed (t tests). The authors

describe some of the limitations of the technology used in the study (picture quality, shoulder up view), but conclude that videoconferencing can be a satisfactory means of providing psychotherapy supervision and that this new technology can be viewed not only as a supplement to face-to-face models but as an alternative as well. The strengths of this study derive from the efforts of the authors to insure adequate reliability of the instrument they created for this study and to validate the instrument by obtaining ratings from the external supervision pairs, which were then included in the analysis of the three clinical factors. The study's limitations partly derive from its same-subjects design, in which the subjects participated in both the experimental (videoconference) and control conditions (face-to-face). It could be reasonably expected that a participant's experience in one condition could influence one in the next condition. Although the authors do indicate the levels of previous experience with the videoconferencing environment, there is no mention of how representative the six pairs were of their colleagues or whether they were randomly selected.

Stevens et al. (1999), examined client and psychiatrist ratings of VC and FTF interviews of 40 clients recruited from the community who were in need of general psychiatric assessment. The major findings were that no differences were found in client ratings of the Interview Satisfaction Scale (ISS) (an instrument specifically developed for the purposes of this study) and California Psychotherapy Alliance Scale (CPAS), both measures of the counseling process. The psychiatrists, however, rated VC lower on the ISS. The five participating psychiatrists were apparently also the authors of the study.

The clients in need of general psychiatric assessment, were recruited in the vicinity of Campbellford, Ontario, from family practices and a community mental health service. Prior to the intervention, all subjects were assessed by a face-to-face interview using the Structured

Clinical Interview for the DSM-III-R – Patient Version 1.0 (SCID-P). The authors do not identify the clinicians who conducted these prior assessments. Recruitment ultimately yielded 19 psychotic and 21 non-psychotic patients. These two subgroups were randomly assigned to televideo and face-to-face interviews with five psychiatrists, who were also the authors. The interviews were 90-minute unstructured sessions meant to determine DSM-III-R diagnoses and treatment recommendations. The FTF sessions took place in Campbellford, and for the televideo group, a psychiatrist in Toronto interacted with the patient in Campbellford. There is no mention of how the psychiatrists were assigned to the sessions. After the interview, both psychiatrists and patients completed the California Psychotherapy Alliance Scale and the Interview Satisfaction Scale. On patient versions of the ISS and CPAS, *t*-tests revealed no differences, leading the authors to conclude that these results corroborated previous anecdotal reports that patients found the VC interviews as satisfactory as FTF.

The authors point out that although psychiatrists rated the televideo interview significantly lower on the ISS ($t = -3.83$, $p = .0001$) than the FTF interview, psychiatrists still rated satisfaction favorably ($M = 2.13$; the scoring range was 1 to 5 on a five-point Likert scale, with low scores indicating endorsement of positive statements). The authors further point out that the psychiatrists, were exposed to both conditions of the experiment and could have been influenced by their subjective comparison of the two modalities.

In a study of 98 adult outpatients with a wide range of neuropsychological problems, Schopp et al. (2000) compared neuropsychological assessment interviews done with videoconference technology to FTF. The authors found no differences in clients' ratings on satisfaction with the psychological session, ease of communication, degree of relaxation, and

psychologist caring. The psychologists conducting the neuropsychological assessments, however, rated the FTF condition higher in satisfaction than the VC condition.

The design of the Schopp et al. (2000) study was as follows. The client participants were randomly assigned to interviews conducted via the two modes of evaluation: videoconference or FTF. The nine interviewers consisted of four neuropsychologists, three neuropsychology postdoctoral fellows, and two neuropsychology interns. Clients and interviewers rated their satisfaction with the interview process, the degree to which they felt relaxed or stressed, the ease of their communication, and whether they would repeat the experience. Clients were also asked to rate how caring they felt the interviewer to be. On the measures of client satisfaction, the ease of communication, psychologist caring, and degree of relaxation, no differences were found between the two conditions, and on repeating the experience, clients reported a greater willingness to use the videoconference condition than the FTF condition. The authors mention several factors that might explain this last result: client interest in participating in a two-way VC session and feeling fortunate to have the opportunity to take part, the belief that telehealth may make it easier to access high-quality care, and feeling pleased to receive services in one's local community.

Glueckauf et al. (2002), in a study of 22 adolescents from the Midwest with seizure disorders and their parents ($n = 36$), evaluated the use of videoconference-based family counseling in rural communities. The following modalities were compared: home-based videoconference counseling, home-based speakerphone counseling, and office-based face-to-face counseling. The authors found that both the adolescents and their parents reported significant and equivalent reductions in severity and frequency of identified family problems,

pre- to post-treatment, on all conditions. Adolescents ($n = 22$) with seizure disorder, however, rated the working alliance lower in VC than FTF and audio only.

The research design utilized by Glueckauf et al. (2002) was a modified randomized field experiment, because four of the families who were initially assigned to the videoconference family counseling (VFC) group were reassigned to speakerphone family counseling, due to the lack of access to an ISDN connection. The intervention consisted of six family counseling sessions over a six-week period, and teenagers and parents rated the assessments—problem severity and frequency, Social Skills Rating System, and a modified Working Alliance Inventory—before the first session, after the sixth session, and at a six-month follow-up. Teachers and parents also assessed problem behaviors. It was found that both teenagers and parents reported significant decreases in problem severity and frequency from pre-first session to post-sixth session to six-month follow-up across all three modalities, and parents reported significant improvements in prosocial behaviors from pre-first session to post-six session to follow-up. Across the three modalities, no differences were found in the degree of treatment adherence. The authors conclude that counseling modality did not significantly influence initial treatment outcome measures or adherence.

Wade et al. (2005) examined the use of VC only to facilitate counseling with six families with a child with traumatic brain disorder (TBI). Videoconferencing was accomplished by furnishing the homes of these families with personal computers, web cameras and Internet service. The six families (8 parents, 5 siblings, and 6 children with TBI) completed between 7 and 11 online videoconference sessions with the therapist.

The major findings were that parents reported improvements in the children's prosocial behavior, and children with TBI reported fewer conflicts with parents over school, post-

treatment. Children with TBI, however, rated the videoconference sessions as less helpful in comparison to other family members and in relation to face-to-face sessions. In addition, children with TBI reported less conflict with parents over school, after completing the VC sessions, while parents reported reductions in the children's antisocial behaviors.

Khasanshina et al. (2008) explored whether VC-based Tele-Mental Health services could be used to supplement onsite services for students with psychiatric diagnoses at a rural university. Initially, Counseling Center (CC) students were assessed onsite for need of psychiatric services and 53 clients who were the most challenged in terms of counselor ratings of client severity rating forms were referred to the Tele-clinic (TC). At the Tele-clinic, psychiatric services were provided by supervised Medical College of Georgia psychiatric residents. Of the original 53 clients, 44 completed Post-Intake Surveys after their initial Non-Tele-clinic (NTC) assessment session and their first TC session. On the Post-Intake Survey, TC clients rated their interaction with the provider highly, and their comfort level with the mental health treatment and overall results of the the session as moderately high. These results were compared with TC clients' initial NTC intake Post-Intake surveys. These showed that TC clients felt significantly more comfortable after their NTC intake session than TC intake session, and also rated the relationship formed with their NTC intake counselor as higher than with the TC provider. Finally, the mean scores of the 44 TC clients on the Post-Intake Survey items (initial TC session) were compared with 495 NTC client responses after their initial NTC session. These showed that NTC clients uniformly rated items higher than the TC clients. It is noted, though, that the TC group was presumably a distinct subpopulation from the NTC group.

Studies Demonstrating Support for VC

A number of studies ($n = 11$) have reported findings demonstrating support for VC. Nine studies demonstrated support that VC was not different from FTF. Two studies, which did not employ a comparison with FTF, found support for its use. These include: Matsuura, Hosaka, Yukiya, Ogushi, Okada, and Nakamura (2000), Day and Schneider (2002), De las Cuevas, Arredondo, Cabrera, Sulzenbacher, and Meise (2006), Nelson, Bernard, and Cain (2006), Hufford, Glueckauf, and Webb (1999), Bouchard, Paquin, Payeur, Allard, Rivard, Fournier et al. (2004), Magaletta, Pagan, and Peyrot (2000), Carey et al. (2008), King et al. (2009), Bouchard, Payeur, Rivard, Allard, Paquin, Renaud et al. (2000), and Hill, Allman, and Ditzler (2001). The latter two, Bouchard et al. (2000) and Hill et al. (2001), did not compare the use of VC with FTF.

Matsuura et al. (2000) investigated the reliability of psychiatric evaluations conducted via videoconferencing. Seventeen participants underwent psychiatric evaluations using the brief psychiatric rating scale (BPRS); nine were ostensibly healthy nursing students, and eight were psychiatric outpatients. The participants were interviewed in three different conditions: face-to-face, high-resolution VC, and low-resolution VC. The results revealed that the interclass correlation coefficients of total BPRS scores had high inter-rater reliability on all three conditions. The authors conclude that videoconferencing, even at a low resolution, is a reliable method of assessing psychiatric outpatients. A strength of this study was its design, which involved two experimental conditions, one using high-resolution videoconferencing technology and the other low-resolution. A key limitation of the study was its use of two distinct populations, which were not clearly used as a comparison. In terms of gender, the nursing group was exclusively female, and the psychiatric outpatient group predominantly so; the two groups also had substantially different mean ages, approximately 20 years. Furthermore, it is not clear

how the subjects were assigned to the three experimental conditions. There is no mention of the persons who conducted the psychiatric interviews and evaluations, and who performed the observation and psychiatric evaluation. In the results section, it is not specified that the interclass correlation coefficient data from the total BPRS are statistically non-significant, though they are presumed to be so. Given that there were only 17 subjects, and an unknown number of evaluators and observers, it can be estimated that the statistical power of the study is quite low.

In a study that examined a number of process and outcome measures, Day and Schneider (2002) compared selected process and outcome variables across three modalities of therapy—face-to-face, real-time VC, and two-way audio—to examine whether the level of working alliance differs with each mode of delivery and whether outcome differs according to each mode and in comparison to a no-treatment wait-list control group. The authors found no differences among VC, audio only, and FTF groups on the ratings of 80 adult clients recruited from the community. Subjects were randomly assigned to three conditions, with one quarter assigned to a 4-5 week wait-list to serve as controls after which they were reassigned to one of the condition groups. In terms of process findings, Client Participation subscale scores on the measure of working alliance (Vanderbilt Psychotherapy Process Scale; Strupp, Hartley, & Blackwood, 1974) were higher when clients were not face-to-face, a result which was not in the expected direction. The authors speculated that clients in the distance modes made: “more of an effort to communicate, taking more responsibility for the interaction than they did in face-to-face traditional therapy, or that distance made openness seem safer” (p. 503). In terms of outcome findings, no significant differences were found among the three groups as judged by comparisons of scores on the Brief Symptom Inventory (Global Severity Index; Derogatis, 2004), the Global Assessment of Functioning (GAF), the Target Complaints (TC, Battle et al., 1966), the Client Satisfaction Scale

and the Therapist Satisfaction Scale (CSS, TSS, Tracey & Dundon, 1988). The authors, who utilized a waiting list before assigning adults clients from the community to treatment groups, found that treatment was superior to no treatment, regardless of modality (VC, FTF, and audio only). The authors point out a number of limitations to their study. First, they explain that this was an analogue study, where the clients still had to come to the clinic to receive therapy, as the VC condition was implemented by closed-circuit television. Clients were, therefore, not able to experience themselves receiving therapy in a location convenient to them and from a distance. Also, because cognitive-behavioral approaches were used exclusively, this study cannot be generalized to other therapeutic approaches. Lastly, since a follow-up study was not conducted, the authors were not able to conclude whether any mode of treatment had greater durability than the others.

In a study of 130 psychiatric outpatients with a range of ICD-10 diagnoses (International Classification of Diseases, 10th edition), De las Cuevas et al. (2006) evaluated the effectiveness of videoconferencing to deliver psychiatric therapy sessions with patients diagnosed based on the Composite International Diagnostic interview. No differences were found between FTF and VC on client ratings of a number of psychiatric outcome measures. Initially, one hundred forty psychiatric outpatients were randomly assigned to either face-to-face treatment or videoconference treatment, with treatment consisting of eight, 30-minute sessions of cognitive behavioral therapy (CBT) over a 24-week study duration. All diagnostic and treatment sessions for both groups were conducted by the same psychiatrist. Changes in psychiatric scores on the Clinical Global Impressions–Severity of Illness (CGI-S) and Improvement (CGI-I) scales, and Global Indexes on the Symptom Checklist 90, Revised (SCL-90R; Derogatis & Fitzpatrick, 2004) served as the primary criteria for evaluating treatment efficacy, with initial scores obtained

at the time of the first session (baseline) and final scores at the end of the study period (week 24). One hundred thirty out of the original 140 completed the study, with 4 dropping out of the VC group and 6 out of the FTF group. Significant improvements were reported for both treatment groups on the CGI and SCL-90R Indexes scores, and no significant differences were detected between the face-to-face and videoconference groups. In addition, the authors reported significant improvements for both VC and FTF groups on the psychiatric measures of SCL-90R and CGI indexes, post-treatment.

Nelson et al. (2006), in a pilot feasibility study, examined the use of ISDN videoconferencing to deliver an eight-session cognitive-behavioral therapy (CBT) course for children with depression and their caregivers. Twenty-eight children with depression and their caregivers ($n = 28$) were randomly assigned to either the face-to-face or interactive televideo group. Overall, the results demonstrated that the VC and FTF groups did not differ in terms of frequencies of responders and non-responders to treatment. At the conclusion of treatment, an 82% remission from depression based on DSM-IV (1994) criteria was observed for both groups, and this rate did not differ significantly between the two groups. The authors conclude that despite the small bandwidth, the CBT skills were successfully delivered via videoconference to both children and caregivers. A limitation that the authors note is the lack of a wait list control group.

In a study of 3 adolescents with seizure disorders and their mothers, Hufford et al. (1999) evaluated the use of videoconferencing in the provision of counseling services to at-risk adolescents with seizure disorders and their families. The three adolescents with seizure disorders and their mothers rated measures of comfort, distraction, and therapeutic alliance across the three modalities: home-based videoconferencing, home-based speakerphone

counseling, and office-based counseling. The study utilized an A-B-C-B-C-A repeated measures design where A represents an office-based session, B a home-based speakerphone session, and C a home-based videoconference session. The videoconferencing was accomplished with ISDN technology, with a second unit placed in the adolescent's home for those sessions. Two of the measures, the Audiovisual Equipment Rating Scale (AVERS; Hufford, Glueckauf, & Webb, 1999) and the Audiovisual Equipment User Survey (AVEUS; Hufford, Glueckauf, & Webb, 1999), were designed for this study. The main finding was that the adolescents and their mothers reported low levels of distraction and moderately high levels of therapeutic alliance and comfort across all three modalities. The authors explain that, because of the small sample, no inferential statistical tests were done. They conclude that these findings provide preliminary support for the use of videoconferencing in the counseling of at-risk adolescents with seizure disorders.

Bouchard et al. (2004) examined the effectiveness of cognitive-behavior therapy (CBT) for panic disorder with agoraphobia when treatment was delivered either by face-to-face (FTF) or by videoconference (VC). The authors found that treatment delivered by VC was effective in the counseling of adults with panic disorder with agoraphobia. They also reported a significant reduction in all measures of symptoms of panic disorder and agoraphobia. In an overall sample of 21 participants, 10 received FTF treatment at the local site, and 11 received VC treatment at the remote site in rural Canada. Assignment to treatment group was nonrandomized and based on location. On measures of treatment outcome and process, the authors found no differences between CBT delivered by VC and CBT delivered FTF. In the videoconference group, it was noted that the clients reported the development of a strong therapeutic alliance as early as the first session. In terms of symptom reduction, the percentage of participants reporting to be panic-

free receiving CBT by VC was 81% at the conclusion of treatment and 91% at a six-month follow-up.

Magaletta et al. (2000) conducted a preliminary study in which 75 prison inmates received psychological consultation via VC over time and found that inmates rated consultations done by VC positively. These inmates had previously received treatment FTF. In particular, the study examined prison inmates' responses to psychological consultations delivered by videoconference, their satisfaction with the consultation process initially, and over time, their willingness to return for follow-up. The inmates, with a range of diagnosed psychopathologies, responded to a six-item questionnaire developed by the authors, and reported satisfaction with the different aspects of the videoconference consultation and a willingness to participate in a follow-up session. It was noted that inmates with more severe pathologies reported satisfaction with the process, but some problems with inmates becoming angry and frustrated did develop, and this was attributed to the technology's slow transmission speed and low resolution. A plurality of participants rated VC as comparable to FTF (46%), with the rest rating FTF as either worse than VC (35%) or better than VC (19%).

Carey et al. (2008) is a more recent study that involved videoconferencing using webcams and personal computers to examine the role of regular prior use of technology in treatment response to an online family problem-solving (OFPS) intervention or Internet resource intervention (IRI) for pediatric traumatic brain injury. The main finding was that prior use of technology was a factor in the OFPS support and treatment of 20 primary care givers of children with traumatic brain injury. Initially, 40 families of children with TBI were randomly assigned to either the OFPS or IRI intervention (which served as a control), and comparisons regarding the prior use of technology were made only with the OFPS group, which received up to 14 VC

sessions. Technology-using parents (primary care givers, $n = 14$) were found to have significantly decreased depression and anxiety (from baseline; these baseline assessment interviews were conducted FTF prior to the distance interventions) compared to nontechnology-using parents ($n = 6$). The lack of prior use of technology and non-adherence to scheduled treatment sessions (the number of sessions rescheduled) predicted depression at follow-up. The authors conclude that, although they found OFPS to be helpful in improving primary caregiver functioning, persons with limited experience with technology may benefit less from an intervention that uses IP-based videoconferencing with webcams and PC's.

In a pilot study, King et al. (2009) evaluated satisfaction and response to group counseling delivered by an Internet-based, videoconferencing platform (CRC Health Group's e-Getgoing) to partial responders to methadone maintenance treatment. Partial responders who tested positive for an illicit substance ($n = 37$) were randomly assigned to the e-Getgoing videoconferencing or onsite group counseling and monitored for 6 weeks. The authors report that patients in both groups responded positively to treatment and were returned to less intensive care. In terms of reported treatment satisfaction, the e-Getgoing group showed a strong preference for the delivery condition, rating counseling convenience, therapist competence, counseling usefulness, counseling experience, and overall satisfaction higher than the onsite group. The onsite group also reported moderately high levels of satisfaction on all of these items. The authors conclude that the inclusion of VC-based group counseling with onsite treatments would help improve care and expand the continuum of care in methadone treatment clinics.

Bouchard et al. (2000), in an experiment considered as a preliminary field study, examined the effectiveness of cognitive-behavioral therapy (CBT) delivered by videoconferencing to treat participants with panic disorder with agoraphobia. The study reports

on the first 8 adults with panic disorder with agoraphobia to complete treatment. These subjects reported very high scores on the WAI (Working Alliance Inventory) in the VC environment. In addition, in treatment that was delivered exclusively by means of VC, the study reported significant improvements in target symptoms related to panic disorder with agoraphobia—frequency of panic attacks, panic apprehension, severity, global functioning, trait anxiety, and general improvement. Participants received 12 sessions of CBT by therapists who were trained to conduct CBT, based on a standardized treatment manual. The eight adults to complete treatment rated measures of target symptoms (frequency of panic attacks, panic apprehension, severity of panic disorder) and global functioning (trait anxiety, general improvement). Using non-parametric analyses because of the small sample size, significant differences were found on all measures assessed before treatment and after the 12 sessions of CBT.

In an account of two case studies of the use of videoconferencing to facilitate family counseling with two military service members and their family members, Hill et al. (2001) reported the development of a virtual interactive presence that promoted social support and the mending of family disconnections. The authors describe the use of videoteleconferences in facilitating the involvement of family members in the mental health care of military service members based in Honolulu, Hawaii. Two case studies in the management of mental illness are presented in which the family member's involvement helped promote social support and the improvement in family communication regarding disconnected relationships. The authors conclude that, "the high clarity images offered through this system were instrumental in developing a virtual interactive presence among the participants" (p. 55).

Study Demonstrating Support for FTF

One study, Rees and Stone (2005), demonstrated support for FTF as superior to VC. The purpose of the authors study was to examine how clinical psychologists in Australia rated therapeutic alliance as witnessed in two videorecordings of equivalent counseling sessions, one done FTF and the other by VC. The main finding was that clinical psychologists who were randomly assigned to view the FTF and VC sessions rated the therapeutic alliance, as indicated by total scores on the Penn Helping Alliance Rating Scale (HAR; Alexander & Luborsky, 1986), significantly lower on the VC session.

The Rees and Stone (2005) study can be interpreted to yield mixed results, however, if one examines the results at the HAR subscale level. The HAR is a 10-item questionnaire that is designed to be rated by a psychologist who independently observes a sample from a session. The HAR is composed of two subscales, Type I Alliance and Type II Alliance. The two subscales can be added to comprise a total score. The first six items measure Type I Alliance: the degree to which the therapist is perceived as warm, supportive and helpful. The last four items measure Type II Alliance: the degree to which is is perceived that the client and therapist are collaborating to resolve the presenting. The authors found significance for the total score and Type I Alliance but the not for Type II Alliance. It is also pointed out that, for the VC condition, the authors apparently used a camera view that was simply set to alternate the image shown based on who was speaking, either the counselor or the client. This is a feature that is usually voice-activated and pre-set in a dedicated system. In effect, what the counseling psychologists witnessed could be construed as alternating halves of a face-to-face session.

Types of Research Designs

Of the nineteen empirical studies reviewed, most ($n = 12$) were considered to be preliminary or field studies with a quasi-experimental research design. These included: Dongier et al. (1986), Matsuura et al. (2000), Gluekauf et al. (2002), Magletta et al. (2000), Bouchard et al. (2004), Nelson et al. (2006), Stevens et al. (1999), Wade et al. (2005), Carey, Wade, and Wolfe (2008), Bouchard et al. (2000), Khasanshina et al. (2008), and King et al. (2009). These were generally characterized by the fact that they did not employ a comparison group (with FTF), nor use random assignment.

Studies with true experimental designs were the next most numerous, with six in number. Of these, two used a single system, within-series design. Sorlie et al. (1999) studied 6 dyads of psychiatric supervisors and their trainees, in an A-B-A-B format in which dyads were exposed to both VC and FTF conditions. Hufford et al. (1999) studied 3 adolescents and their mothers and used an A-B-C-B-C-A format in which both adolescents and mothers were exposed to VC and FTF conditions.

One study, Hill et al. (2001), reported on two case studies with military service members and their families receiving family therapy via VC.

Populations Studied

Of the seventeen empirical studies covered in this section, most ($n = 16$) of the populations examined in these studies are clinical in nature and focus on the client's perspective. They include children, adolescents and adults with a range of presenting issues—from subjects with persistent, chronic conditions such as seizure disorder and traumatic brain injury to ostensibly healthy nursing students.

Several studies ($n = 4$) examined perspectives other than the client's, though these were not numerous. Dongier et al. (1986), in addition to patient reports, examined psychiatric consultants' reports, and Schopp et al. (2000) examined psychologist reports. Both of these studies, as well as Rees and Stone (2005), can be considered to be from the counselor's or therapist's perspective. Sorlie et al. (1999) studied 6 dyads of psychiatric supervisors and their trainees. These reports can be considered to be from the supervisor's and student's perspectives, respectively.

Ways that VC and FTF were Operationalized

Videoconference

In general, there are three main levels of descriptions among the reviewed studies, in terms of the ways that the videoconference condition was operationalized. In the first, studies included the basic details that a VC occurred or that the participants sat in front of a VC unit; also frequently included is information about the general location of the local and remote sites. In the second level, studies provided some details beyond the basic level of description. In the third level, the studies provide significant details about the environment and the process. (Appendix B provides a summary table of how VC, and FTF were operationalized in the reviewed empirical studies)

At the first level of description, there were six studies ($n = 7$) that were in this category. Stevens et al. (1999) indicate that the participants sat in front of a televideo system that produced a visual image of the other person on a 27-inch monitor. It is further mentioned that the psychiatrist was located in Toronto and the patient in Campellford, Canada. Dongier et al. (1986) describe the VC interview as one achieved by two-way CCTV between floors of a hospital. Nelson et al. (2006) specify that the VC intervention was delivered by Interactive Televideo.

Glueckauf et al. (2002) simply mention that families had access to ISDN technology. Hufford et al. (1999) state that a Vistium unit with a 15-inch monitor was placed in families homes (remote locations) and a second unit kept in the Family Assessment and Intervention Laboratory. De las Cuevas et al. (2006) indicate that treatment delivered by VC was delivered from the local site at the University Hospital de la Candelaria in Santa Cruz de Tenerife (the therapist's location) to the remote site at the Mental Healthcare Centre of San Sebastian de la Gomera (the patient location). Last, Hill et al. (2001) mention simply that the patient and the primary provider meet at the Tripler Army Medical Center, while the family is at the site on the mainland closest to the family's home.

At the second level of description ($n = 8$), Schopp et al. (2000) indicate that participants in the VC condition, accompanied by a psychometrist, traveled to a rural county hospital telehealth site approximately 100 miles from the university hub site, where they were interviewed by a university-based neuropsychologist. Carey et al. (2008) describe the VC-based sessions as following the initial home-based FTF session, and as including a self-guided Web session and a one-to-one interview with the therapist. Bouchard et al. (2000) indicate that the VC treatment sessions included images that were displayed on one monitor in full-screen in a waist up view and that participants were seated in a psychologist's office in a mental health clinic.

Matsuura et al. (2000) compared two types of videoconference in their study, high resolution and low resolution. For the high resolution condition, the interviewing psychiatrist was linked to the subject by a high-resolution VC unit from a remote site, while the observer psychiatrist was in the same room as the subject. The low resolution condition was the same as the high resolution condition, except that videophone (low bandwidth) technology was used. Day and Schneider (2002) explain that all of the therapists worked in all three modes: VC, FTF, and

audio only. Each of the two participants sat in a separate room and viewed the other person over a closed-circuit 20-inch television monitor. For the audio-only condition, both participants used a speakerphone, with each in a separate room in the clinic. In both experimental conditions, the client never saw the therapist in person and was not cognizant that the therapist's room was nearby.

Sorlie et al. (1999) state that, in their study, participants sat in front of a 28-inch TV monitor, and were able to view the upper part of the body of the other person. Khasanshina et al. (2008) mention that psychiatric residents at Medical College of Georgia (MCG) and their clients at Georgia Southern University's (GSU) Tele-Clinic (TC) utilized a standard PC monitor with Polycom PVX software and a webcam to teleconference over a private IP network, during 20 minute sessions. Last, King et al. (2009) state that outpatients used their own personal computers and participated in group therapy sessions using e-Getgoing software. During sessions, each participant could hear and see the leader in real time, but had no visual of other participants. The leader could see who was speaking by noticing a designation of the client on his screen.

At the third level of description ($n = 4$), Magaletta et al. (2000) state that the psychiatrist was located at the hub site in Lexington, Kentucky and the referring psychologist, telehealth coordinator, and inmate (all present in one room) at the remote site, either in Lewisburg, Pennsylvania or Allenwood, Pennsylvania. The psychiatric consultations lasted between 10 and 30 minutes and the same exact room was used for all inmates, a room 10 feet by 19 feet in size, carpeted, though not sound-proof, and painted powder-blue to reduce the effect of reflections.

Bouchard et al. (2004) explain that after the initial FTF assessment interview, all subsequent contact between patients at the remote site and therapists was via VC or fax (for homework assignments). The video images were displayed on a 20-inch television monitor in

full-screen view. Participants were seated alone in a psychologist's office at the remote mental health clinic. It is stated that the VC system allowed patients and therapists to see each other and to talk with optimal image quality and without significant delays. The therapists were also invited to use the picture-in-picture function to self-monitor their own behavior and interventions.

Wade et al. (2005) explain that for the VC condition, a Dell computer, 19-inch monitor, and web camera were installed in the families' houses. Families were randomly assigned to one of two platforms for VC; these differed in picture size, video and sound enhancing features, and cost. After the initial assessment interview, which was conducted FTF by the therapist, all sessions (through session six) were conducted by VC.

Rees and Stone (2005) indicate that their VC video was scripted from the recording of the FTF session and the therapist and client actors practiced before recording the VC format. The authors state that "the video-conferencing session consisted of a changing screen depending on whether the client or therapist was speaking" (p. 652). The length of each session was 20 minutes. The videos were viewed at Curtin University of Technology or the participant's workplace.

Face-to-Face

In the empirical studies reviewed, there were a variety of descriptions of the ways that the FTF condition was operationalized. Of these, four ($n = 4$) did not use a FTF comparison group. Of the fifteen studies that use a FTF comparison, descriptions of operationalization ranged from those that merely mentioned that FTF sessions took place to those that provided significant details about the environments and procedures.

Most prevalent was simply the mention that FTF sessions or interviews took place or were delivered at the general, non-remote site (e.g., Stevens et al., 1999, Schopp et al., 2000, and Nelson et al., 2006). De las Cuevas et al. (2006) report that the FTF sessions took place in the same room that the therapist used for the VC condition.

Two studies mention other persons present for the FTF sessions. Matsuura et al. (2000) state that an observing psychiatrist was present during the psychiatric assessment sessions. Dongier et al. (1986) describe the following process: “As in the usual consultative process in this institution, staff members involved daily with the patient were present and took part in the consultation, presenting the case to the consultant before the introduction of the patient.” (p. 33)

Two studies describe the presence of technical equipment in the room in which the FTF interview was held. Hufford et al. (1999) describe the FTF condition as office-based sessions with two video cameras present to record the interaction. Day and Schneider (2002) state that the FTF participants occupied the same room in the typical manner and that all sessions were videotaped.

A number of studies describe a FTF session that occurred prior to the implementation of the VC interventions. Bouchard et al. (2000) and Bouchard et al. (2004), both studies of the use of VC sessions with adults with panic disorder with agoraphobia, utilized a FTF assessment interview at the local site during which patients received a Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I; First Edition, 1997) diagnosis from one of the participating therapists in the study, though not necessarily the same one that would be later assigned to them for treatment delivered by VC. Glueckauf et al. (2002) specify that initial assessment interviews with adolescents with seizure disorders and their parents took place FTF at the lead author’s intervention suite at the university clinic.

Matsuura et al. (2000) report that the interviewer and observer psychiatrists were both present in same room as the subject, resulting in simultaneous FTF interview and observation, whereas Sorlie et al.(1999) specify that the FTF interviews were arranged in a consultation room designed for videoconferencing. Participants sat at an approximate distance of 1.5 meters, with a small table between them; separate video cameras recorded the upper part of the body, and the face and front of each of the participants.

Rees and Stone (2005) is an analogue study in the sense that the participants were all counseling psychologists who viewed a video of a simulated counseling session that was done by VC or FTF. For the FTF video, the authors state that one of them (Stone) and an actor taking the role of a client recorded a simulated counseling session intended to replicate a fourth session interaction. Participants viewed the videos at either Curtin University of Technology or at the participant's workplace.

Technologies Used

The nineteen empirical studies surveyed used a range of technologies to achieve the videoconferencing for the counseling sessions. Only eight describe the technology used to establish the VC in any detail. Dongier et al. (1986), presumably the first study to examine distance counseling sessions that included video and audio feeds, used closed-caption television (in the same building to simulate distance counseling). Magaletta et al. (2000), in their study of prison inmates, do not specify the videoconferencing technology used, but it is also presumed to be CCTV as the transmission took place in the same building. Four of the studies employ ISDN (phone line) technology due to the lack of availability of cable systems in many rural locations and during the years in which the study was conducted. A smaller number ($n = 5$) of more recent studies used Internet Protocol (IP) technology for the videoconference; these included Carey,

Wade and Wolfe (2008), Wade et al. (2005), Schopp et al. (2000), Khasanshina et al. (2008), and King et al. (2009). Carey, Wade and Wolfe (2008), and Wade et al. (2005) also specify the use of webcams and personal computers connected to the Internet. Webcams are affordable video cameras (usually less than \$100 and frequently with built-in microphones) that can facilitate a VC via the Internet, and are currently being built into many laptop computers. Other studies ($n = 8$) do not specify how the VC's were implemented.

In considering the range of technologies represented by these studies, it is observed that, although technological advancements have been made over the years particularly in the areas of hardware and expanding bandwidth, the majority of studies used ISDN technologies with a typical information transmission rate of 384 Kbps (when specified) and did not, generally, reflect these advancements. The presence of two studies (Carey, Wade and Wolfe, 2008; Wade et al., 2005) that used inexpensive webcams and available software such as Skype and Netmeeting, is viewed as an indication that low-end VC has become more practical, feasible and prevalent.

Summary

An important conclusion that can be drawn from the reviewed 19 empirical studies on counseling and videoconferencing is that there is mixed support for the use of videoconferencing in facilitating counseling sessions. That is, some of the studies ($n = 7$) surveyed demonstrated mixed results, whereas others ($n = 11$) demonstrate support for VC, either as not different from FTF or for its use (with studies with no FTF comparison). One study, Rees and Stone (2005), reports support for FTF as superior to VC.

In general, the nineteen studies reviewed tested a range of both counseling process and outcome measures in the experiments, with those that tested counseling process variables being the most numerous (see Appendix A).

The populations studied were most frequently clinical populations, and the outcome measures were most frequently reported from the client's perspective. Less frequently reported were the counselor's, therapist's and trainee's perspective and the independent observer's perspective.

In terms of the ways that the modalities of VC and FTF were operationalized, there was a range of reported methodologies. In describing how VC was operationalized, many studies provide just the basic information that the sessions occurred and name the locations of the local and remote sites. Others go beyond this basic level to provide helpful details about the environment and VC session process, including information on how the participants were viewed, the size and resolution of the image, the nature of the environments (local and remote), whether the VC session was preceded by a FTF session, whether there were other persons present in the session, and whether other technological features were used, such as picture-in-picture. Similarly, the descriptions of how FTF was operationalized range from those including basic information (that the sessions took place and where) to those with a number of illuminating details (whether there were other persons present in the session, the presence of technical equipment in the room to record the sessions, and a description of the physical environment). In general, most of the descriptions of FTF could be considered to be basic, with no account of how environmental variability was controlled. Rees and Stone (2005) conducted an analogue study wherein the counseling psychologists-participants, viewed a twenty-minute recording of a demonstrated counseling session that had been scripted by the authors. Participants viewed these recordings either at their workplace or at the university site, though there is no mention of potential sources of variability for these two general ways of viewing (e.g., such as differences in

the types of computers, screen size, ways that the image was projected, and room-to-room differences).

The types of technologies used to achieve the videoconferencing environments in the studies were also varied. In general, the technologies ranged from analog (CCTV and videophone) to digital (ISDN and IP) and these technologies were also representative of the hardware and software developments in the field at the time when the studies were conducted, 1986 to 2009. Presumably, because of the need to serve rural areas and because of issues with the availability of cable services and fiber optic networks, most of the studies used phone lines (ISDN) to transmit the data for the videoconference. Only a few studies reported using the more recently developed Internet Protocol (IP) technology, and several used closed caption television within the same building. In general, most of the studies used digital processes to achieve the videoconferencing, but a few used older analogue processes.

There are a number of limitations to many of the studies that need to be pointed out. Some of these are discussed by the authors in the existing studies, whereas others are the result of the progression and relative newness of this emerging technology, and this line of research. First, the studies that indicate support for FTF as significantly superior to VC are often limited by small group sizes or unspecified group size, and by the field or preliminary nature (design) of the study. Second, overall, few of these studies used an experimental design. Of the reviewed studies, only six used a true experimental design, and of these, two (Hufford et al., 1999; Sorlie et al., 1999) used same-subject, repeated measures design with total sample sizes of 6 and 12, respectively. Third, only three studies, Day and Schneider (2002), De las Cuevas et al. (2006), and Schopp et al. (2000), used sample sizes that can be considered large enough to provide adequate statistical power. Fourth, although many of the studies focus on outcomes based on the

client's perspective, relatively few are from the perspective of the counselor or therapist, or the supervisor or consultant. These also are limited by small or unspecified sample sizes, the range being 3 in the smallest comparison group to 15 in the largest.

A fifth limitation concerned the types of technologies used to implement the videoconferencing or the lack of information on how this was done. Of the studies that specified how the VC was implemented, the types of technologies used were, by current standards, generally limited in terms of the overall quality of the video image and, probably, synchronicity. In addition to some studies providing little or no information about the type of VC technology that was used, most provided no information about the size or quality of the monitor on which the video image was viewed nor about the technology or speaker quality for the audio component. It can be argued that the quality and size of the video image and the quality of the audio information are crucial components in terms of providing sufficient information to make the counseling interaction feasible and effective.

In conclusion, because of the limitations just noted, only four studies of the nineteen empirical articles are viewed to substantially inform this one. These include: Day and Schneider (2002), De La Cuevas et al. (2006), Schopp et al. (2000), and Rees and Stone (2005). The first three studies were considered to have adequate statistical power and, in general, all found no difference between FTF and VC based on client ratings. Rees and Stone (2005) is also included here because, although the power of the study is considered to be limited, it is the one that solely focused on the counselors' perceptions of the FTF and VC counseling environments. Based on the assessment that only four empirical studies inform the current one, the limitations of the other empirical studies and the dearth of studies focusing on the counselor's perspective, it is concluded that knowledge about the feasibility and effectiveness of counseling that is done by

videoconference is incomplete. Considerable ongoing research will be needed to help fill in these gaps and keep pace with future advances in technology and societies' adaptations to them.

Age

In this study, age is also tested as a predictor variable because of the recent discussion in the literature concerning generational differences in the U.S. in terms of use of technology, technical proficiencies, and learning preferences. Mallen et al. 2005, in reviewing the digital divide literature, suggest that younger persons may be more amenable to use of new technologies whereas older persons may feel more challenged with their use.

Fleschner (2008) asserts that counselors need to be aware of, and prepared to address the needs of a new element of diversity—generational differences—and describes differences and similarities between the three most recent generations—Baby Boomers, Generation X, and Generation Y. Fleschner defines these generations by birth year, with Baby Boomers born between 1946 and 1964, generation X between 1965 and 1980, and generation Y between 1981 and 2002. Shallcross (2011) mentions that most practicing counselors are also members of one of these generations and may share the generation's characteristics and learning styles. The author quotes Elizabeth Nesbit:

Understanding the unique elements of each generation enables counselors to have a better understanding of their sense of self as it relates to their generational identity and culture and also to have a greater understanding of their client's generational culture and its potential impact on values, beliefs, world view and expectations. (p. 328)

Also permeating the discussion about generational differences and cultures has been the recent debate over the terms, first coined by Prensky (2001a), *digital natives* and *digital immigrants*. Prensky asserts that digital natives (corresponding to the millennial generation or

generation Y, those born approximately after 1980), having grown up in the digital age with computers, video games, video cameras, cell phones and other devices, think and process information in ways that are substantially different from previous generations. Individuals from previous generations, who were not born into the digital world are referred to as *digital immigrants*. Prensky (2001b) conjectures that, because of this fundamental change in thinking patterns, digitally native students' "*brains have physically changed* – and are different from ours – as a result of how they grew up" (p. 1). Prensky refers to research done in neurobiology on neuroplasticity as evidence that children raised with the computer have brains that "are almost certainly physiologically different" (p. 4) and surmises that digital natives have thinking skills that are considerably improved by computer games and other digital media. These include representational competence, multi-dimensional visual-spatial skills, inductive reasoning, cognitive mapping, and faster response times to unexpected and expected stimuli, among others.

These contentions, however, have been met by critical review. For instance, Bennett, Maton, and Kervin (2008) point out that despite the model's currency and pervasive claims, there is little empirical evidence to support it. The authors articulate the need for objective, theory-based research to be done on the assumptions that underlie the theory about digital natives, and acknowledge the complexity involved with investigating how young people are interested in and engaged with digital technologies.

Although the preceding studies provide mixed support for age as a potential factor influencing counselors' perceptions toward technology and online environments, it was decided to include it as a predictor variable for this study, since it was a straightforward process to assess a participant's age on the demographic questionnaire. Based on the reviewed literature, a

reasonable hypothesis was that younger participants might have more positive attitudes toward the use of technology.

Gender

A number of empirical studies indicate that gender may be a factor in terms of how technology and online environments may be perceived by counselors. For instance, Rochlen, Beretvas, and Zach (2004), in a study of 213 undergraduates, found that women reported a greater degree of value in FTF counseling than did men. In a subsequent study, Rochlen, Land, and Wong (2004) examined men's attitudes toward counseling vignettes that were conducted with cognitive- and emotion-based approaches in online (text-based chat) and FTF formats. Their results indicated that men with difficulty expressing emotions rated the online-counseling vignette more favorably than the FTF, and the authors suggest that the online environment may be helpful for treating men, who frequently do not utilize mental health services. In a study that examined how experiential learning styles affected program choice in doctoral counselor education and supervision programs delivered online and in the traditional classroom, Glass (2009) found that women with lower concrete experience and higher abstract conceptualization scores had higher preferences for the online learning environment.

However, in a study that examined a sample of 188 counselors in the Southeast U.S. in terms of their attitudes toward computers, using the Computer Attitude Scale (Loyd & Gressard, 1984a), Wood (1996) reported that counselor attitudes toward computers and gender were not significantly related.

Since the preceding studies demonstrate mixed support for gender as a potential factor influencing counselors' perceptions toward technology and online environments, it was decided

to include it as a predictor variable for this study, to rule out whether it was a factor with the groups studied herein.

Attitudes toward Technology

Another predictor variable that is considered to be a factor that may influence counselor perceptions of distance and face-to-face counseling is the individual's attitude toward the use of computers and related technologies. For example, Wood (1996) found that prior experience in terms of computer use and training was significantly correlated with counselor attitudes toward computers as measured by the Computer Attitude Scale (Loyd & Gressard, 1984b). In a study of 213 undergraduates from a large southwestern university, Rochlen, Beretvas, and Zach (2004) found that participant scores on the E-Mail Comfort Scale (developed by the authors for this study) were significantly correlated with online counseling subscales as measured by the Online Computer Attitudes Scale, developed by the authors and examined in this validation study. That is, students with greater comfort with using email expressed deriving more value and experiencing less discomfort related to online counseling. In addition, in a field study of 112 users of two different software systems, an email system and a text editor, Davis (1993), in seeking empirical confirmation of the Technology Acceptance Model, found "that perceived usefulness was 50% more influential than ease of use in determining usage" (p. 475).

These empirical findings, on the whole, lend support for the consideration that attitudes toward computers and related technologies may influence counselors' ratings of distance and face-to-face counseling sessions.

Framework for the Current Study

Based on existing literature, one particularly important line of research inquiry involves the investigation of counselors' perceptions of the videoconference counseling environment

concerning factors considered vital to the establishment of a satisfactory counseling process by the Common Factors model. This research study has undertaken this approach. More specifically, this study used experimental, quantitative methods to investigate whether there were differences between counselors' (as expert observers) perceptions of a counseling session done by videoconference and a counseling session done face-to-face on counseling process measures related to Common Factors constructs.

Research Goals

First, this study sought to obtain a sizeable number of participants (approximately 60 in each comparison group), which would allow the study to be fully-powered (capable of detecting modest to strong variable effects). Second, this study intended to clearly show a VC video with a continuous counseling segment with simultaneous views of the counselor and client, in distinctly different locations, done with dedicated videoconferencing equipment. Third, this study examined not only counselor/observer ratings of working alliance, but two other measures related to constructs considered important by the Common Factors model – counselor qualities, in terms of attractiveness, expertness and trustworthiness, and the quality of the session, in terms of its depth and degree of smoothness.

The study also sought to re-examine and extend the previous work of Rees and Stone (2005) who also used an analogue design to compare counselors' ratings of the working alliance established in pre-recorded counseling vignettes that had been conducted either face-to-face or by videoconferencing. As the authors point out, their study was limited by the small numbers ($n = 15$) in each comparison group.

Research Question

The crucial research question that this study intends to answer is whether there are any differences between counselor/observers' ratings of three measures of counseling process (working alliance, quality of the session, and counselor qualities) after witnessing the same series of exchanges in two video-recorded counseling sessions—one that was facilitated by the face-to-face modality and the other by videoconferencing. Each of these factors will be operationalized by the Working Alliance Inventory-Short (WAI-S), the Session Evaluation Questionnaire (SEQ) and the Counselor Rating Form-Short (CRF-S), and explored on subscale level for each of these measures. This approach yields eight variables that are employed in the Discriminant Analysis as predictor variables: (1) WAI-S Task, (2) WAI-S Bond, (3) WAI-S Goal, (4) SEQ Depth, (5) SEQ Smoothness, (6) CRF-S Attractiveness, (7) CRF-S Expertness, and (8) CRF-S Trustworthiness. In addition to these eight common factors process variables, three additional factors are tested as predictor variables: (9) Gender, (10) Age, and (11) Attitude toward the Use of Technology. Attitude toward the Use of Technology is operationalized by the Computer Liking (CL) subscale the Computer Attitude Scale (CAS). These last three predictor variables are used as control variables, and their contribution to the group comparison is taken into account simultaneously as the VC/FTF criterion variables.

In summary, eleven predictor variables—eight variables related to common factors found in counseling process and derived from the subscales of the WAI-S, SEQ, and CFR-S, and three control variables (Gender, Age, and Attitude toward the Use of Technology)—are used to obtain parameter estimates for the actual differences between the VC and FTF groups.

Hypothesis

Based on the assumption that each environment provides the essential information that counselors need in order to be effective, the primary hypothesis was that the VC and FTF groups would not be different on any of the measures of counseling process: the rating of the counselor, the evaluation of the session, and the working alliance. In other words, it was expected that the null hypothesis would not be rejected.

Method

Introduction

This chapter provides details about how the study was conducted, including its processes and procedures. The chapter is organized in the following way: first, the processes and procedures for Manipulations Check I and II are described, followed by a presentation of their descriptive data. Second is an explanation of the participant group and how they were recruited, including the incentive that was used. Third, details are provided about the development of the two videorecordings that were used as the stimulus. Fourth, is an explanation of the variables studied and how they were operationalized. Fifth, the instrumentation used is described along with summaries of studies that support their use. This also includes a description of the Demographic Questionnaire. Sixth, the procedure for the implementation of the study is detailed. Last is an explanation of the Steps in Data Analysis. This section includes details regarding: the Data Entry, Data Analysis, Demographic Data, Descriptive Data, Primary Data Analyses, and the Power Analysis.

Manipulation Check I

Process and Procedure

To check the equivalence of the VC and FTF conditions and the suitability of the stimulus videos, prototype VC and FTF counseling videos were developed and then evaluated in the context of a doctoral counseling research seminar at a Carnegie I research university in the northeastern United States. The videos were constructed to depict a segment of a college career counseling session, keeping the audio content and the spoken dialogue equivalent in both the VC and FTF videos. The college career counseling session constructed to be straightforward and unremarkable, so that the research seminar participants could focus on the mode of delivery

shown in the video rather than the content of the counseling session. The visual content was constructed to be different for each. The model for the format of the VC video was the same as what was later used in the actual stimulus VC video—four simultaneous frames of equal size showing the room and camera views for both the counselor and client. In contrast, the format of the FTF video contained a single frame from the room view (one seen as if an evaluator were viewing through a one-way mirror). The essential goal in the creation of the prototype videos was to portray in as lifelike and as realistic a manner possible, virtually the same client-counselor exchanges, in terms of audio content and spoken dialogue, for both the face-to-face or videoconferencing situations.

After the development and production of the prototype videos, they were evaluated by the Principal Investigator and the Study Administrator and deemed suitable to be brought to the doctoral research seminar for viewing and evaluation. On November 30, 2006, this plan was implemented. The ten participants were all members of a doctoral counseling research seminar and were experienced counselors. All of the participants had, at a minimum, obtained a Master's degree in counseling. Prior to viewing the videos, the Primary Investigator explained the purpose of the manipulation check and described the process for the evaluation of the videos.

The procedure was as follows: Video A (VC) was played first, then, with little pause and no discussion, Video B (FTF) was played. At the conclusion of Video B, participants responded to a brief survey asking them to rate the videos in terms of how they perceived the differences between the VC and FTF environments, the equivalency of the verbal content, and about their experience with videoconferencing. Using a 7-point Likert scale, participants responded seven statements about the stimulus videos. For items Items 1 to 5, participants indicated the the degree to which they agreed or disagreed with the statements, with scores ranging from 1 (*disagree*) to 7

(*agree*). For items Items 6 and 7, participants indicated the the degree to which they perceived the video to represent a counseling segment done by VC or FTF, with scores ranging from 1 (*not very much*) to 7 (*very much*). (See Appendix C to review complete survey for Manipulation Check I).

The videos were played from a DVD using the local Dell computer in the teaching station in the seminar room, and projected to a medium-sized screen using the high-quality, built-in LCD projector mounted from the ceiling.

Once the data collection for the manipulation check was concluded, the items were analyzed and the descriptive statistics are presented in Table 1, including means and standard deviations for each quantitative survey item.

Descriptive Data

Table 1 presents the descriptive statistics for each of the survey items for Manipulation Check I.

Table 1

Descriptive Data for Manipulation Check I Survey Items

Item	<i>N</i>	Mean	Standard Deviation	Minimum Possible	Maximum Possible
1. Video A accurately depicted counseling session segment done by VC	10	5.90	0.32	1.00	7.00
2. Video B accurately depicted a face-to-face (FTF) counseling session segment	10	6.60	0.52	1.00	7.00
3. The visual information in Video A (VC) was different from that in Video B (FTF)	10	6.10	0.32	1.00	7.00
4. The audio information in Video A (VC) was different from that in Video B (FTF)	10	2.90	0.32	1.00	7.00
5. Information portrayed in Video A (VC) was distinct & different from Video B (FTF)	10	4.70	0.48	1.00	7.00
6. Degree to which Video A (VC) represented a counseling segment facilitated by VC	10	6.00	0.47	1.00	7.00
7. Degree to which Video B (FTF) represented a face-to-face counseling segment	10	6.60	0.52	1.00	7.00

As is shown in Table 1, participants reported agreement on Item 1 and 2, that Video A and Video B accurately depict a counseling session segment done by VC and FTF, with mean scores of 5.90 and 6.60 (out of a possible 7), respectively. Similarly on Items 6 and 7, participants demonstrated high agreement that Video A (VC) and Video B (FTF) represented a counseling segment facilitated by VC and FTF highly, with mean scores of 6.00 and 6.60, respectively. Next, participants showed agreement that Item 3, which stated that the visual information in Video A (VC) was different from that in Video B (FTF), with a mean score of 6.10. With Item 4, which stated that the audio information in Video A (VC) was different than that in Video B (FTF), however, participants moderately disagreed, with a mean score of 2.90. This result was in the anticipated direction, though, as the audio tracks were quite similar. From these results, it was concluded that there was support for the equivalence of the VC and FTF conditions and the suitability of the prototype stimulus videos. Manipulation Check I provided the foundation on which the actual stimulus videos were subsequently developed.

Manipulation Check II

Process and Procedure

The essential purpose of Manipulation Check II was to confirm that the stimulus videos used in the experiment accurately portrayed the intended counseling situation and the VC and FTF modalities by which they were facilitated. To achieve this, six counselors or mental health professionals who had experience using distance counseling in their practice were recruited to participate in the check in which they viewed and evaluated the stimulus videos. Participants were recruited through the Primary Investigator's professional contacts and had, at a minimum, a Master's degree in Counseling, Social Work, Psychology or Marriage and Family Therapy with a number of years of clinical experience. Potential participants with the requisite education and

experience were selected based on their positive response to the question regarding whether they had conducted a counseling, supervision, or consultation session by VC.

The manipulation check was administered to each participant individually, and each was randomly assigned either to watch the FTF video first or the VC video first. The expectation was that the participants viewed the videos on their personal computer. The random assignment process was to assign the first participant to view the VC video first and, as subsequent participants became available, to assign the next participant to view the FTF video first, the next to the VC video first, the next to the FTF video first, and so forth.

The primary way (for four of the participants) that the manipulation check was administered was electronically, with the stimulus videos, survey, and informed consent documentation delivered as links to secured online sites in one email to the participant's address. The email explained the process of participating in the manipulation check. First, it explains the overall process and provides an overview of the procedural steps. Next, it directs the participant to open the link to the Informed Consent document and the Survey; it instructs the participant to read the Informed Consent language and to indicate their consent by checking the appropriate box, after which they are asked to read a brief introduction to the videos. Next, it specifies which video that they are to view first and provides a link to the video, on which they are instructed to click; this behavior prompts a window to open with the video that is played by the University's streaming server. At the end of the first video, participants are instructed to proceed without pausing to the second video. After viewing the second video, participants are instructed to proceed directly to complete the Survey that follows the section on Informed Consent. The first section of the Survey requests participants to rate the videos on the accuracy of how the videos depict the different environments (VC and FTF), on the differences between the audio and visual

content, and on the extent to which the counseling content was the same. Using a 7-point Likert scale, participants responded seven statements about the stimulus videos. For items Items 2 to 6, participants indicated the the degree to which they agreed or disagreed with the statements, with scores ranging from 1 (*disagree*) to 7 (*agree*). For items Items 7 to 9, participants indicated the extent to which they perceived the video to represent a counseling segment done by VC or FTF, and the equivalency of the counseling content, with scores ranging from 1 (*not very much*) to 7 (*very much*). The second section is a demographic questionnaire. (See Appendix D to review the survey and demographic questionnaire for Manipulation Check II)

Once these participants finished with the Survey, they completed the manipulation check and their responses were automatically recorded by the survey software and secure server. Following completion of the Survey, participants were requested to read a brief debriefing statement.

Alternatively, one participant was identified who chose not to complete the Manipulation Check online, and a physical packet was provided for them, with a booklet containing the instructions, the Informed Consent documentation, the Introduction to the Videos, the Survey, and the debriefing statement, as well as DVD's with the FTF and VC videos clearly labeled.

Once the data collection for the manipulation check was concluded, the items were analyzed and the descriptive statistics are presented in Table 2, including means and standard deviations for each quantitative survey item.

Descriptive Data

Table 2

Table 2 presents the descriptive statistics for each of the continuous survey items for Manipulation Check II.

Descriptive Data for Manipulation Check II Survey Items

Item	<i>N</i>	Mean	Standard Deviation	Minimum Possible	Maximum Possible
2. Video A: Face-to-Face (FTF) accurately depicted a face-to-face counseling session segment	5	6.60	0.89	1.00	7.00
3. Video B: Videoconference (VC) accurately depicted a counseling session segment done by videoconference	5	5.80	1.79	1.00	7.00
4. The visual information in Video A (FTF) was different from that in Video B (VC)	5	5.60	1.67	1.00	7.00
5. The audio information in Video A (FTF) was different from that in Video B (VC)	5	2.60	2.51	1.00	7.00
6. Overall, the information portrayed in Video A: (FTF) was different than that in Video B: (VC)	5	5.40	2.19	1.00	7.00
7. Degree to which Video A (FTF) represented a face-to-face counseling segment	5	6.60	0.89	1.00	7.00
8. Degree to which Video B (VC) represented a counseling segment facilitated by VC	5	5.60	1.67	1.00	7.00
9. Extent to which the counseling content was the same in Video A(FTF) as in Video B(VC)	5	6.60	0.89	1.00	7.00

As is shown in Table 2, participants reported agreement on Items 2 and 3, that Video A and Video B accurately depict a counseling session segment done by FTF and VC, with mean scores of 6.60 and 5.80 (out of a possible 7), respectively. Similarly, participants reported agreement on Items 7 and 8, the degree to which Video A (FTF) and Video B (VC) represented a counseling segment facilitated by FTF and VC, with mean scores of 6.60 and 5.60, respectively. Next, for Item 4, participants reported agreement that the visual information in Video A (VC) was different from that in Video B (FTF), with a mean score of 5.60. For Item 5, which stated that the audio information in Video A (FTF) was different than that in Video B (VC), however, participants moderately disagreed, with a mean score of 2.60. This result was also in the anticipated direction, though, as the audio tracks were designed to be very similar. For Item 6 that stated: Overall, the information portrayed in Video A (FTF) was different from that in Video B (VC), participants moderately agreed, with a mean score of 5.40. Last, for Item 9 that stated that the: Extent to which the counseling content was the same in Video A (FTF) as in Video B (VC), participants agreed, with a mean score of 6.60. In all, these results demonstrate uniform support for the equivalence of the VC and FTF conditions and the suitability of the stimulus videos used in the study.

Participants

For this study, counselors, social workers, and psychologists who were at least beyond their first year of training in a Master's program in Counseling, Social Work, Psychology, or Marriage and Family Therapy were recruited to serve as participants. Participants were recruited by the Principle Investigator in Master's level Counseling and Social Work classes at two universities in Northeastern United States and a doctoral research seminar in the Counselor Education program at a research university in the Northeast United States. The reason that only

students who are beyond their first year were chosen is that, by this point in their programs, they will have had ample opportunity to gain experience in assuming the role of the counselor in actual counseling situations, and will, therefore, have a context on which to base their perceptions of the counseling situations portrayed by the vignettes. It was requested that the class attendees voluntarily participate. Once the volunteers in the classes were determined, participants were randomly assigned to the control (A) or experimental (B) group. Individual participants were also recruited by word of mouth at the research university, based on contacts the Primary Investigator had previously established. These participants were also randomly assigned to the two groups. The demographic information collected included the participant's: gender, age, ethnicity, level of education, program of education, and current primary professional role. In addition, information was collected on: the years of work as a mental health professional, the number of technology courses taken, the proportion of the day spent with computers and technology, and the primary use of computers and technology.

Incentive

As an incentive to take part in this study, participants, at the end of their survey packets, chose to fill out a form (Appendix H, Section VII) to receive a Starbucks gift card worth \$5.00.

Counseling Videorecordings

Two videorecordings were developed as the stimulus for this study—one for the face-to-face (FTF) condition and one for the videoconference (VC) condition. The videos developed for Manipulation Check I were prototypes of the ones later developed for the study per se.

Manipulation Check II used the two videos developed for the actual study, not the prototypes.

As much as possible, the two videos were designed to be equivalent except for the modality by which the session was conducted. The same actors were used for both videos; the

counselor was represented by a doctoral student who had previously been a school psychologist, and the student was represented by a senior undergraduate who was finishing her Honors thesis in Communication and Speech Disorders. Although there were no cues given to the actors in terms of pacing, the resultant videos had similar lengths of session—eight minutes, twenty-four seconds for the FTF video and nine minutes, ten seconds for the VC video.

The counseling session segment that was developed was designed to depict a college mental health situation, one that might typically be presented at a counseling center at a major university in the Northeastern United States (Kitzrow, 2009). A college mental health situation was chosen as it was considered to be highly relevant and accessible to practitioners from the four disciplines eligible for the study, and, on a counseling needs continuum, to be positioned in the middle between crisis on one extreme and well counseling (e.g., career counseling) on the other. The session shows a female college senior who is seeking help for difficulties she is having with handling stress and anxiety, and for ways to improve a number of her close relationships. Both the student and the counselor were female and European American.

It is important to point out that, although they were coached to specifically portray the same counseling content, the actors were allowed to naturally react in each of the environments, and there was no attempt to modify this. They were allowed to react and interact as anyone might in front of video cameras or, in the case of FTF, another person. As such, the deck was not stacked to guarantee that all of the actors' behaviors were identical in both environments. The research team ensured that they adhered to the script but otherwise they were allowed to behave naturally in either setting. Both actors had had previous experience in real life as a psychologist and as a client respectively, and were, thus, well-equipped to portray these models of a counselor and a client.

A single script was developed to depict the counseling session segment used in this study. The same script sequence was used for both the FTF and VC recordings of the session segment (See Appendix E to view the script). The script was comprised of ten client disclosures and ten counselor responses, with the content and sequence of each set of disclosures and responses kept constant by the use of written cues listed on a large board. The client disclosures were designed to have medium intimacy value (Jourard, 1971) and the counselor responses were designed to consist of Level II empathic responses and Level III genuineness responses (Carkhuff, 1969).

To further ensure equivalence, the principle investigator, the research assistant and the two actors met three times prior to the actual recording of the stimulus videos to develop and go over the sequence of the counseling session content, and to practice enacting the content as accurately as possible. The last practice session was used to help the actors become familiar with the remote videoconference environment. To facilitate improvement, the three takes that constituted each practice session were videorecorded and sent to each of the actors to be viewed as feedback after the last two practice sessions.

The final recording of the two videos took place on two separate days a week apart (January 23 and 30, 2008). On both days, the actors wore identical clothing for the production. As performance aids, large boards with the scripted sequence of disclosures and responses were placed within each actor's view, but kept out of the range of the camera lens. For each of the environments, VC and FTF, three takes of the session were enacted and videorecordings shown to the production team. The production team included the Primary Investigator, the Learning Environments computer consultant, and the counselor and client actors. The team then decided which take was the most accurate and smooth; in each case, there was consensus that the third take was the most effective, and these segments were then edited for use as the study's stimulus.

The FTF stimulus video was made using a professional grade SONY video camcorder operated by the Primary Investigator. The camcorder was placed on a tripod equidistant between the counselor and client actors, with the lens adjusted so that the image captured all of the actors' body language from head to foot, and so that the counselor actor and client actor had equal presence and position. The actors' chairs were adjusted such that the actors faced slightly outward toward the camera. The reason for this decision was that a slightly angled view (three quarters as opposed to a complete side view) allowed more facial expression and body language to be captured in the recording. Identical chairs were used for the client and counselor actors, so that they would be seated at the same height and relative level. The standard ceiling fluorescent lights, which are the primary sources of lighting in each of the rooms, were used; no additional lighting was brought in. The video was recorded digitally on mini-DV tapes. (Figure 2 provides still photo frames from the FTF and VC videos.)

The VC stimulus video was made using two professional grade SONY camcorders and two Polycom professional grade videoconference cameras. Two separate rooms were used for this purpose. The room in which the client actor was placed was the same as the one used for the FTF video segment. To emphasize the fact that these were two different environments, two different wall hangings—a painting, and two different plants—were inserted into the background directly behind each actor and in the view of the camcorder. The visual distinction between the two environments is also apparent because of the different wall and rug colors in the respective rooms, and because of the different lighting. In the VC final video, there were two instances of barely audible feedback interference that did not impede the interaction. These instances were not edited out, as it was decided that they were an indication of the variances of transmission that can still accompany a videoconference.

Figure 2

View: FTF Condition



View: VC Condition



For the VC video, two camcorders were used in both the local and remote rooms. The first was used to record what was occurring in the room—the client or counselor interacting with the VC unit (and their counterpart at the other site). The VC unit included a cart with a monitor, a Polycom camera, and a recording camcorder. (Appendix F provides a diagram showing how the equipment was used to accomplish the VC recording) The second camcorder was used to record exactly what the client or counselor saw and heard from the monitor. Similar to the FTF takes, a professional grade SONY camcorder was placed on a tripod equidistant between the client actor and the VC unit, and the camcorder lens was adjusted so that the image captured all of the actor's body language from head to foot, and so that all of the of the VC unit is in view. More specifically, the VC unit consisted of an Audio/Visual cart with a video monitor placed at the top level shelf of the cart. Mounted on the top of each monitor was the Polycom camera. On the middle level shelf of the cart was a second professional grade SONY camcorder, which was used to record the input from the Polycom. Specifically, this is the sound and video coming in from the remote room; these are what the actor in the room sees and hears through the video monitor. Similar to the FTF takes, the room camcorder not dedicated to the Polycom was adjusted to give the client actor and VC unit comparable presence and position. In the VC takes, the actors' chairs and the VC unit were also adjusted so that both faced slightly outward toward the camcorder in the room. The reason for this decision was that a slightly angled view allowed more facial expression and body language to be captured in the recording. This also allowed for the video image from the remote room to be captured as the actor addressed the VC unit. An identical set-up was arranged in the room where the counselor actor was placed. (For further technical details about the VC equipment used and the transmission, see Appendix G).

To produce the final video for use in the study, the footage from the one mini-DV tape from the FTF takes and the four mini-DV tapes from the VC takes were captured using iMovie (Version HD) and edited so that only the final take was displayed. For the FTF version, iDVD (Version HD) was used to format and render the iMovie file to a .dv file, a file type that can easily be copied to DVD disk and then played using a DVD-R drive on a computer or DVD player. During the final editing of the .dv file, a title frame was inserted at the very beginning of the video reading: "Face-to-Face Session."

For the VC version, four final iMovie files were generated from the final take: two from the camcorders used in each room to record the session, and two from the camcorders used to record the video and audio output from each of the Polycom cameras. To build the composite video, Final Cut Express (Version HD) was used to import each of the four iMovie files into a single file with a composite frame composed of the two Polycom camera views and the two room views. Within this composite frame, the views were organized as follows: the room views were placed at the top, with counselor's room on the top left and the client's room on the top right; the Polycom camera views were placed at the bottom with the camera view of the client's room on the bottom left and the camera view of the counselor's room on the bottom right. In the room views, the viewer can clearly see the VC equipment cart and the image displayed on the monitor. The reason for this arrangement was that the image displayed on the VC monitor would correspond to the same camera view directly beneath it. It was thought that the proximity of these views would help the viewer verify that the session had been done remotely, and would demonstrate the interaction between counselor and client in real time. All four of the subframes were constructed to be of equivalent size. Final Cut's capability of handling multiple video and audio tracks allowed all four subframes to be accurately synchronized, so that they all displayed

the equivalent content simultaneously. Two of the audio tracks were turned off because they were redundant. In the final version of this file, a title frame was inserted at the very beginning of the video clearly naming it: “Distance Video Counseling Session.” Directly after the title frame, a still frame was inserted with the names of each of the views fading into a caption in the lower portion of each respective subframe. The purpose of these cues was to orient the viewer to each of the four perspectives.

Variables and Operationalization

For this study, the independent variable is the mode of counseling: FTF versus VC. The participant’s age, gender, and rating of attitude toward the use of technology are also examined as predictor variables.

The experimental condition, FTF or VC, is operationalized by the group to which the participant was randomly assigned and the subsequent exposure to the vignette that was produced in either the FTF or VC situation. The experimental condition, FTF versus VC, is treated as a dichotomous variable.

The predictor variables include the participants’ perceptions of the session’s effectiveness, the working alliance formed by the counselor and client, and the assessment of the counselor’s qualities of attractiveness, expertness, and trustworthiness. Session effectiveness is operationalized by the Session Evaluation Questionnaire (SEQ, Form 5; Stiles, 1980), working alliance by the Working Alliance Inventory (WAI; Horvath & Greenberg, 1989), and the assessment of the counselor’s qualities by the Counselor Rating Form-Short (CRF-S; Corrigan & Schmidt, 1983). All instruments yield subscale scores on an ordinal scale that approximates an interval scale.

Rating of attitude toward the use of technology is determined by participants' responses to the Computer Liking (CL) subscale of the Computer Attitude Scale (CAS; Lloyd & Gressard, 1984b). This instrument yields a total score on an ordinal scale that approximates an interval scale.

Instrumentation

Demographic Questionnaire

A demographic questionnaire (Appendix H, Section III) was developed for this study and includes items to gather information on participants' gender, age, ethnicity, level of education, program of education, current primary professional role, years of work as a counseling or mental health professional, the number of technology-related courses taken, the proportion of one's day spent with computers and technology, and primary use of computers and technology. (See Appendix H, Section III to review the demographic questionnaire.)

Session Evaluation

The Session Evaluation Questionnaire (SEQ, Form 5; Stiles, 1980) is 21-item instrument on which participants rate the quality of psychotherapy or counseling sessions. The 21 items yields four 5-item subscales, Depth, Smoothness, Positivity and Arousal, and one item, bad-good, that is not used in any of the four indexes, but is retained in Form 5 as a global evaluation item. The SEQ has been widely used to assess various types of counseling sessions: individual, group, family and marital, and supervision. The SEQ can be completed by participants immediately following a session, or by external raters (as is the case in this study) based on a recorded session.

This study uses only the 10 items that constitute the Smoothness and Depth scales as these scales pertain directly to the evaluation of the session, of interest here because of its

relevancy to counseling process. The other two scales, Positivity and Arousal, were not used as these are used to assess the post-session mood of the participants, and are, thus, outcome measures and are outside of the scope of this study. (Appendix H, Section IV.A shows the items from the SEQ used in the study. The global evaluation item that appears in this Appendix was not analyzed for this study.)

Using a 7-point Likert scale, participants respond to a bipolar adjective format to indicate their ratings of the session's evaluation, with the first 10 items devoted to session evaluation. Session evaluation is divided into two subscales: Depth and Smoothness. Depth is construed as sessions judged to be "powerful and valuable versus weak and worthless", whereas Smoothness refers to "relaxed and comfortable versus tense and distressing" (Stiles, Gordon, & Lani, 2002; p. 176). Depth is composed of the following items: worthless, deep, empty, powerful, and ordinary. Smoothness is composed of: easy, tense, pleasant, smooth, and uncomfortable. Participants are instructed to: "Please circle the appropriate number to show how you feel about this session" (p. 1). Each item is scored from 1 to 7, with specific items reversed as indicated. For Depth, the reversed items are: worthless, empty, and ordinary. For Smoothness, the reversed items are: tense and uncomfortable. Each dimension score is calculated as the mean of the included item ratings, and, the dimension scores, thus, fall upon the same 7-point scale as individual items. The possible range for a dimension score is, therefore, 1.00 to 7.00 and the midpoint, 4.00. Subscale scores can range from 5.00 to 35.00 with 20.00 representing the midpoint. Higher scores indicate greater Depth or Smoothness (desirable qualities in a session).

The initial study to use the SEQ, Stiles (1980), examined the responses of therapists and their adult clients after 113 individual counseling sessions. The therapists were 10 clinical psychologists and two psychiatric social workers in private practice in Chapel Hill, North

Carolina, and four counseling psychology graduate students who were staff members at the University Counseling Center at the University of North Carolina at Chapel Hill. Nine of the therapists were male and seven were female, and most described their counseling approach as eclectic. The authors report that most of the private practice clients were white, middle or upper class, with a college education; there were more females than males. The clients seen at the counseling center were described as graduate or undergraduate university students, who “tended to be of the YAVIS type (youthful, attractive, verbal, intelligent, and successful)” (p. 177). Factor analysis of the session ratings revealed “two distinct factors, called *depth/value* and *smoothness/ease*, in both client and therapist data” (p. 176). In their rating of sessions on these two factors, clients and therapists tended to be in agreement.

Stiles, Gordon and Lani (2002) reported internal consistency reliabilities, measured by Cronbach’s alpha, as .90 for Depth and .93 for Smoothness. Separate factor analyses for both the client and therapist ratings of sessions have demonstrated that the items on the Depth and Smoothness scales comprise the same factors at the client level and session level, the latter based on therapist responses for the same session (Stiles, Reynolds, Hardy, Rees, Barkham et al., 1994; Stiles & Snow, 1984). This indicates that the constituent adjectives for each scale have similar meanings when used to discriminate among sessions as when used to discriminate among clients with multiple sessions (as rated by their therapists).

In a large sample with 2,414 sessions with 218 clients, Stiles et al. (1994) found, using factor analysis, that the SEQ dimensions of Depth and Smoothness achieved internally consistent groups of items that were considerably independent, and that the same analyses yielded the same key dimensions for clients and counselors, suggesting that the two evaluative scales may be used for both kinds of participants.

Stiles et al. (1994) also demonstrated the criterion-related validity of the SEQ; the Depth and Smoothness subscales, were found to be moderately to highly correlated with Understanding, Problem Solving, and Relationship indexes on the Session Impact Scale (SIS; Elliot & Wexler, 1994), with multiple correlations ranging from .49 to .74 at the session and client levels. Depth and Smoothness were also highly correlated with the SIS's single-item global evaluation scales, Good-Bad and Helpful-Hindering, with multiple correlations ranging from .60 to .78 at the session and client levels. The predictive validity of the SEQ is further supported by studies with its use in counseling sessions. Stiles, Shapiro, and Firth-Cozens (1988) found, consistent with their theorized hypotheses, that exploratory sessions (interpersonal/psychodynamic) were rated by counselors and external raters as deeper and more powerful, whereas prescriptive sessions (cognitive/behavioral) were rated by clients, counselors and external raters as smoother and easier. Similarly, Cummings, Slemon, and Hallberg (1993) demonstrated a significant interaction effect between level of counselor experience and role of the participant (client or counselor) for counseling session depth. In a study that made use of both the SEQ and the Working Alliance Inventory (WAI), Mallinckrodt (1993) found, over a course of brief counseling lasting 12 sessions, that early session evaluations were related to alliance ratings later in the course of treatment, and that early positive ratings of working alliance predicted later session evaluations. In support of the concurrent validity of the SEQ, Elliott and Wexler (1994) found that client ratings of the Helpful, Relationship and Task scales on the Session Impacts Scale (SIS) were moderately related to session Depth on the SEQ, with partial correlations ranging from .32 to .55.

Reynolds, Stiles, Barkham, Shapiro, Hardy and Rees (1996) and Friedlander, Bernardi, and Lee (2010) also lend support to the concurrent validity of the SEQ. Reynolds et al. (1996), in

a study of 117 clients with depression who were randomly assigned to 8 or 16 sessions of cognitive-behavioral (CB) or psychodynamic-interpersonal (PI) therapy, found that clients' ratings of SEQ and SIS session impact dimensions (session depth and smoothness, relationship with the therapist, feelings of understanding and problem solving, and postsession mood) became increasingly positive as the course of therapy progressed. Friedlander et al. (2010), in a study that evaluated client behavior in 28 conjoint family therapy sessions on which one family member and the therapist concurred on ratings of the SEQ, found that "better" sessions were characterized by significantly higher ratings of clients on Engagement in the Therapeutic Process and Safety within the Therapeutic System dimensions of the System for Observing Family Therapy Alliances (SOFTA-o; Friedlander et al., 2006). The ratings of clients on these dimensions of the SOFTA-o were done by an external team of judges who evaluated videotape recordings of the family sessions.

Working Alliance (WA)

The initial version of the Working Alliance Inventory (WAI; Horvath & Greenberg, 1989) is a 36-item instrument designed to evaluate the success of the counseling relationship. The instrument employed in this study is the shortened one, the WAI-S, the version developed by Tracey and Kokotovic (1989) for observation rating, which uses 12 items. (Appendix H.IV.C shows the WAI-S items.)

The WAI-S is a self-report measure of working alliance (Tracey & Kokotovic, 1989), and can be scored as an overall measure of the alliance, or scored based on its three subscales: Goals, Tasks and Bond. The WAI-S has been extensively used to evaluate the working alliance in various types of counseling sessions: individual, couples, family, and supervision. The WAI-S

can be administered to participants immediately following a session, or by external raters based on a recorded session. This study uses only the subscale scores for Goals, Tasks, and Bond.

Using a 7-point Likert scale, participants respond to a statement concerning how well the counselor and client worked together. The WAI-S is based on the following theoretical models: Rogers's client-centered theory, Strong's interpersonal influence theory, psychodynamic theory, and Bordin's integrationist model of the working alliance, the WAI measures three domains of the working alliance: Goals, Tasks and Bond (Horvath & Greenberg, 1989). Goals refers to the mutually agreed upon and valued outcomes of counseling, and are the objectives of the counseling interventions. Tasks is construed as the behaviors and perceptions of the counselor and client that form the essence of the counseling process. The concept of Bond signifies the system of constructive personal attachments that are formed between the counselor and client that relate to the establishment of trust and self-reliance. Goals is composed of the following items: (1) There are doubts or a lack of understanding about what participants are trying to accomplish in therapy; (2) The client and therapist are working on mutually agreed upon goals; (3) The client and therapist have different ideas about what the client's real problems are; and (4) The client and therapist have established a good understanding of the changes that would be good for the client. Tasks includes the following items: (1) There is agreement about the steps taken to improve the client's situation; (2) There is agreement about the usefulness of the current activity in therapy; (3) There is agreement on what is important for the client to work on; and (4) The client believes that the way they are working with his/her problem is correct. Bond is comprised of the following items: (1) There is a mutual liking between the client and therapist; (2) The client feels confident in the therapist's ability to help the client; (3) The client feels that the therapist appreciates him/her as a person; and (4) There is mutual trust between the client and

therapist. Each item is scored from 1 to 7, with two items reversed only on the Goals subscale. These two items are: There are doubts or a lack of understanding about what participants are trying to accomplish in therapy and; The client and therapist have different ideas about what the client's real problems are. As described, each of the three subscales has four non-overlapping items, with scores ranging from 1 (*never*) to 7 (*always*) (Hanson et al., 2002). Each dimension score is calculated as the mean of the included item ratings, and, the dimension scores, thus, fall upon the same 7-point scale as individual items. The possible range for a dimension score is, therefore, 1.00 to 7.00, with a midpoint of 4.00. Subscale scores can range from 4.00 to 28.00, with 16.00 representing the midpoint. Higher scores represent more positive ratings of working alliance and its subscales, Goals, Tasks, and Bond.

The earliest version of the WAI used a five-point Likert scale, on which participants rated a series of statements about their perceptions of the therapeutic relationship that was established. Horvath and Greenberg (1989), in their initial study to validate the WAI, found adequate reliability, reporting an estimated Cronbach's alpha of .93 for the client's version, and .87 for the counselor's version.

The WAI-S was developed through a confirmatory validation study of the WAI (Tracey & Kokotovic, 1989). The study involved 84 university counseling center clients and 15 therapists rating their sessions with 124 clients; the authors found support for the General Alliance factor as its primary factor and three secondary specific factors (bond, goal and task). Of the 124 sampled dyads, completed questionnaires were obtained from 15 therapists (rating 123 clients) and from 84 clients. Of the 84 clients, 53 were women and 31 were men, with an average age of 22 years. The authors mention that, although no specific data were gathered on the ethnicity and socioeconomic backgrounds of the sampled clients, most of the clients were presumed to be

European American and from middle-class backgrounds. The 15 therapists included 13 PhD-level psychologists and 2 interns; 7 were women and 8 were men. The therapists indicated that their orientations were: psychodynamic (10), humanistic (4), and cognitive-behavioral (1).

Based on these findings, Tracey and Kokotovic (1989), used a hierarchical, bilevel model to select the items most indicative of these three secondary specific factors to constitute a 12-item shortened version of the WAI, the WAI-S, with 4 items each for the subscales of bond, goal and task. Lisrel tests of goodness of fit demonstrated support for a General Alliance factor, as well as the three factors of bond, goal and task. Internal consistency estimates for the WAI-S were: .90, .92, and .90, for the client group, for task, bond and goal, respectively; and .83, .91, and .88, for the therapist group, for task, bond and goal, respectively. Internal consistency estimates for total scores were .98 and .95, for clients and therapists, respectively.

In a study that examined five versions of the WAI, including the WAI-S, including the client and therapist versions, Hanson, Curry, and Bandalos (2002) reported mean reliability estimates, using reliability generalization, ranging from .79 to .97, with a modal estimate of .92. For the WAI-S, the authors reported mean internal consistency estimates for the client and therapist versions ranging from .92 to .98, and .90 to .95, respectively, for the total scores. They conclude that, “in general, the reliability estimates of the WAI scale scores appear to be robust” (p. 659).

Busseri and Tyler (2003), in a study of 54 university counseling center counselor-client dyads which compared ratings of the WAI and WAI-S, used hierarchical linear modeling (HLM) to obtain regression coefficients for the relationship between corresponding WAI and WAI-S scores. The authors report that they were uniformly high, with fourth-session ratings of .97 and .96 for the client and counselor, respectively, and final-session ratings of .88 and .99 for the

client and counselor, respectively. Furthermore, the WAI and WAI-S scores were found to have highly similar descriptive statistics, internal consistencies, subscale intercorrelations, and predictive validity estimates within and across rater perspectives.

In support of the concurrent validity of the WAI-S, Zhang and McCoy (2008) found, in study of 53 counselors working at a university counseling center and university practicum clinic, a significant relationship between counselor-related working alliance and counselor-client discussion of racial difference during counseling sessions in counseling dyads in which the counselor and client belonged to different racial groups. A hierarchical multiple regression analysis revealed that counseling dyads in which racial differences were discussed received significantly higher ratings of working alliance by the counselor on the WAI-S ($F(4,48) = 4.05, p < .01$)

In support of the predictive validity of the WAI-S, Tryon and Kane (1995) found that counselors' total WAI-S scores significantly differentiated between clients who unilaterally or mutually terminated counseling, $F(1,71) = 7.36, p < .009$, with counselors rating the WA lower with clients who later terminated unilaterally. Similarly, Dykeman and La Fleur (1996), in a point-biserial correlational analysis, found 54 adjectives on the Adjective Check List (Gough, 1960) that were significantly correlated ($p < .01$) with WAI-S scores based on counselor's ratings of their clients three weeks later. This result was 18 times the number predicted by chance and the authors state that a strong claim can be made that these correlates contribute to the underlying variance of the WA construct based on this result.

In the current study, the WAI-S was slightly modified from its original version, with the word "therapist" replaced by "counselor", and the word "therapy" replaced by "counseling". This was done to be consistent with the type of session portrayed in the stimulus videos.

Counselor Rating

The current study uses the Counselor Rating Form-Short (CRF-S; Corrigan & Schmidt, 1983) to evaluate counselor qualities. (Appendix H.IV.B shows the CRF-S items). The CRF-S is a shortened version of the widely used Counselor Rating Form (CRF) developed by Barak and LaCrosse (1975; LaCrosse & Barak, 1976). LaCrosse's (1980) study of counseling outcomes demonstrates support for the predictive validity of the original CRF.

The Counselor Rating Form-Short (Corrigan & Schmidt, 1983) is a 12-item survey that evaluates qualities of the counselor in three dimensions: Attractiveness, Expertness and Trustworthiness. The three dimensions can be added together to yield a total score. This study uses only the subscale scores on the three dimensions to evaluate the counselor's qualities. The CRF-S has been widely used to evaluate the counselor's qualities in various types of counseling sessions: individual, group, couples, family and supervision. The CRF-S can be administered to participants immediately following a session, or to external raters (as is the case in this study) based on a recorded session.

Using a 7-point Likert scale, participants appraise the degree to which a counselor displays a quality portrayed by a positive adjective. The CRF-S is based on Strong's (1968) social influence theory which posits that the structure of counselor attributes is constituted of three domains: Attractiveness, Expertness and Trustworthiness. Attractiveness is construed to be the extent that the counselor seems welcoming and open, whereas Expertness is related to the counselor appearing to be knowledgeable and well-qualified. Trustworthiness can best be thought of as the degree to which the counselor seems genuine and truthful. Attractiveness is composed of the following items: (1) Friendly, (2) Likable, (3) Sociable, and (4) Warm. Expertness is made up of the following items: (1) Experienced, (2) Expert, (3) Prepared, and (4)

Skillful. Lastly, Trustworthiness is composed of the following items: (1) Honest, (2) Reliable, (3) Sincere, and (4) Trustworthy.

As mentioned above, each of the subscales, Attractiveness, Expertness and Trustworthiness, is comprised of 4 items. None of the 12 items are reversed. Each dimension score is calculated as the mean of the included item ratings, and, the dimension scores, thus, fall upon the same 7-point scale as the individual items. The possible range for a dimension score is, therefore, 1.00 to 7.00, and the midpoint is 4.00. Subscale scores can range from 4.00 to 28.00 with 16.00 representing a midpoint (neutral) score. Higher scores indicate greater Attractiveness, Expertness or Trustworthiness (desirable qualities in a counselor).

Along with an equivalent factor structure, Corrigan and Schmidt (1983) reported satisfactory levels of internal consistency estimates—above .80 for all subscales. Rochlen et al. (2004) reported internal consistency estimates of .94, .85, and .89, on the subscales of Expertness, Attractiveness, and Trustworthiness, respectively. In a further validation study of the CRF-S in which the original methodology (Corrigan & Schmidt, 1983) was largely replicated, Epperson and Pecnik (1985) found additional support for the validation of the CRF-S. In addition, Tracey, Glidden, and Kokotovic (1988) reported that beyond the three subscales, an overall general construct—a “good counselor factor” emerges, providing support for the construct validity of a total score. In their study of college-aged men, Rochlen et al. (2004) reported that the total score may be regarded as a “total counselor evaluation index,” with an internal consistency estimate of .91.

The criterion-based validity of the CRF-S has been supported by a number of studies. Walter and Handelsman (1996) found, in a study of 205 college students, that those who had received specific information about informed consent prior to the counseling session rated the

counselor significantly higher on the CRF-S. In a study involving 67 counselor trainees, Lawson, Gaushell, McCune, and McCune (1995) found that counseling supervisors' ratings of expertness, attractiveness, and trustworthiness on the CRF-S correlated with scores of personal authority and intergenerational intimidation, fusion-individuation, and triangulation on the Personal Authority in the Family System Questionnaire (PAFS-Q; Bray, Williamson & Malone, 1984). Kokotovic and Tracey (1987) found that client satisfaction, as measured by the Client Satisfaction Questionnaire-Short (CSQ-S; Larsen, Attkisson, Hargreaves, & Nyguyen, 1979) and perceptions of counselor trustworthiness and expertness, as measured by the CRF-S, were related to client's continuing in counseling (returning to scheduled appointments). In a study of 112 college students of color who completed mental health treatment at their college counseling center, Constantine (2002) found that students' counseling attitudes and perceptions of their counselors' general (as measured by ratings on the CRF-S) and multicultural counseling competencies were related to their satisfaction in counseling.

A number of studies have used the CRF-S to study counselor qualities from the observer's perspective. One is Lawson, Gaushell, McCune, and McCune (1995), mentioned above. In addition, Harari and Waehler (1999) and Wilson and Yager (1990) employed analogue research designs using the CRF-S. Specifically, Harari and Waehler empirically assessed the effects of discussing termination in an initial analogue counseling session, in which four different endings of the session were presented on audiotape. The authors used the CRF-S to assess the perceived characteristics of the counselor in these portrayals. Wilson and Yager studied the extent to which the CRF, the CRF-S, and the Counselor Effectiveness Rating Scale (CERS; Atkinson & Carskaddon, 1975) measured the same constructs among 160 undergraduates. Participants were randomly assigned to view one of four videotaped counseling session and to

rate the counselor's characteristics. A substantial number of the participants (93.8%) had had prior experience with some form of counseling as a client.

The version of the CRF-S used in this study was the 1983 instrument for which permission was given by its author, John Corrigan. No modifications were made to the items or instructions.

Computer Liking (CL)

The Computer Attitude Scale (CAS; Loyd & Gressard, 1984b), in its original version, was a 30-item instrument designed to assess attitudes toward learning about and using computers. (See Appendix H.IV.D to view the CL scale of the CAS). A subsequent version (Loyd & Loyd, 1985) was later developed, containing four subscales consisting of ten items each: computer anxiety, computer confidence, computer liking, and computer usefulness. The current study utilizes only the latter because this was the one for which permission was given. Furthermore, the study uses only the computer liking subscale because of the stability of this subscale in confirmatory factor analyses and because of the particular relevance of its constituent items with the research goal of assessing a participant's general liking of computers and peripheral technologies such as videoconferencing.

The Computer Liking subscale uses a four-point Likert-style response format: 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, and 4 = Strongly Agree, with scores from five negatively-worded items reversed, so that a higher score signifies a higher level of computer liking. The negatively worded items were the following: The challenge of solving problems with computers does not appeal to me; Figuring out computer problems does not appeal to me; I don't understand how some people can spend so much time working with computers and seem to enjoy it; I will do as little work with computers as possible and; I do not enjoy talking with

others about computers. The Computer Liking subscale can range from 4.00 to 40.00 with 22.00 representing a midpoint (neutral) score.

Loyd and Gressard (1984a), in a confirmatory factor analysis of the original version with a sample of 155 high school students in grades eight through twelve, who were involved in a computer-based education program, found evidence that the CAS consisted of three stable subscales: (a) computer anxiety or fear, (b) liking of computers, and (c) computer confidence, accounting for 55% of the variance. Internal consistency estimates were reported as .86, .91, and .91 for each subscale, respectively.

Loyd and Gressard, 1984b, a study that involved 142 high school language arts students, 107 community college mathematics students, and 105 students at a small liberal arts college, examined the effects of computer experience, age, and gender on attitudes toward computers using the original version of the CAS. Greater computer experience was related to more positive attitudes toward computers on all three subscales whereas gender was found to not be related to computer attitudes.

In a study in which the subsequent, four-subscale version of the CAS was used with 114 teachers enrolled in computer staff development courses, Loyd and Loyd, (1985) found that the CAS to have adequate reliability, with internal consistency estimates of .90, .89, .89, and .82 for Computer Anxiety, Computer Confidence, Computer Liking and Computer Usefulness subscales respectively. The estimate for the Total Score was .95. The study also found that all four subscales were related to experience with computers, supporting its concurrent validity.

Kluever, Lam, Hoffman, and Green (1994) conducted a confirmatory factor analysis of the four-subscale version of the CAS using data collected from 265 teachers who volunteered to

receive computer training. Based in the pretest results, the authors found a four-factor solution similar to Loyd and Loyd (1985), which explained 54 percent of the variance.

In a later study with 208 educators, mostly certified teachers, Nash and Moroz (1997) estimated the reliability of the four-subscale version of the Computer Attitude Scale and provided information regarding the factor patterns of CAS subscales. Reported were internal consistency (Cronbach's Alpha) values of .90, .91, .92, and .84 for the subscales of Computer Confidence, Computer Liking, Computer Anxiety and perceived Computer Usefulness, respectively, with an overall value of .97 for the entire scale. Similar to the findings of Loyd and Loyd (1985), the authors found that the four-scale version was effective in discriminating the varying levels of computer experience among the teachers.

Christensen and Knezek (2000) studied the internal consistency reliabilities of fourteen previously-published instruments that assessed attitudes toward computers. Using data obtained from 621 educators in Texas, New York and California during 1995-96, the authors found the internal consistency reliabilities (Cronbach's Alpha) to be .91, .81, .89, and .85 for the Computer Anxiety, Computer Confidence, Computer Liking, and Computer Usefulness subscales respectively.

Mizrachi and Shoham (2004), a study involving 664 college students in eight teacher's colleges in Israel, investigated the relationship between participants' computer attitudes to library anxiety, computer experience, gender and age. Experience with computers, especially home use, was strongly associated with positive computer attitudes, and there was a relationship between all of the computer attitude scales and all library-anxiety factors, as measured by the Library Anxiety Scale (Bostick, 1992), thus, lending support for the concurrent validity of the CAS.

Procedure

Permission from the University's Institutional Review Board was obtained to conduct this study (Appendix I contains all of the Institutional Review Board Protocol and Amendments related to this study). Permissions to reproduce the four copyrighted assessments were also secured (Appendices J, K, L, and M contain the documents demonstrating permission to use the SEQ, CRF-S, WAI-S and CAS, respectively). The assessment packet, including the SEQ (Smoothness and Depth scales), CRF-S (Attractiveness, Expert, and Trust scales), WAI-S (Task, Bond and Goal scales), and the CAS (Computer Liking Subscale), contained 44 Likert-scale items, and a demographics questionnaire (See Appendix H for the complete assessment packet). Participants received a cover letter explaining the intent of the study and requesting their signed, informed consent to participate. In the study packet, participants also received a document, "Introduction to the Video", explaining the context and background for the video, a Debriefing Statement, and a form for the Starbucks incentive.

Two Master's students were asked to pre-test the stimulus and assessment packet in the Spring of 2008. This pre-test permitted the researcher to assess the clarity and smoothness of the administration process and to determine the approximate time for completion. The mean time for completion was approximately 20 minutes, and this information was included in the informed consent cover letter.

Access to the classes in which the study was administered was granted by the instructors. Initially, the Primary Investigator made a 3-minute presentation introducing the study and then volunteers self-identified. Participants were randomly assigned to either the FTF or VC condition, with one of the groups leaving for another classroom with one of the study administrators. After the study protocol was explained and the consent forms completed,

participants were asked to read the “Introduction to Video” document, and once all completed it, the stimulus video corresponding to the assigned condition was shown in its entirety.

Immediately following the viewing of the stimulus videos, participants completed the demographic questionnaire, the four quantitative assessments – the SEQ, the CRF-S, the WAI-O and the CAS, and then read the Debriefing Statement. If they wished to receive the study incentive, participants filled out a final mailing form.

Steps in Data Analysis

Data Entry

Based on procedures established before the beginning of this study, data were entered as assessment packets were completed. This procedure was implemented to ensure that the statistical results were conservative estimates of the relationships between the independent and dependent variables.

Data Analysis

SPSS 16.0 was used for the data analysis. The reversed scored items previously mentioned were recalculated in SPSS to generate the correct scoring.

G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) was used to conduct the post-hoc power analysis.

Demographic Data

A discussion of the demographic data examining the means and the standard deviations for all of the demographic items, except for age and gender, is provided. Age and gender, since they are considered as predictor variables are included in the subsequent descriptive data on these variables.

Descriptive Data

A report of the descriptive data includes the means, the standard deviations, and the bivariate intercorrelations level for all of the predictor variables (including the eight subscales provided by ratings of the WAI, SEQ, and CRF-S).

Primary Data Analyses

Discriminant analysis is used to analyze the results, with VC and FTF being the categorical criterion variables tested to determine whether group membership is significantly different. The predictor criteria include the age and gender of the participants, their rating of computer liking (CL), and the selected subscale scores on the SEQ, WAI, and CRF-S, all as continuous predictor variables. The primary rationale for this design is that discriminant analysis is, particularly for explanatory purposes, especially useful in describing and understanding the differences between or among groups (in this case, two) (Betz, 1987). Betz states that discriminant analysis, based on the general multivariate linear method, provides for the prediction of group membership established on the optimal linear composite or combination of predictor variables. Betz mentions that group differences, in the multivariate case, are optimally determined by the related methods of MANOVA, discriminant analysis, and Hotelling's T^2 statistic. These methods have the advantage, when compared with the use of multiple t-test or multiple ANOVA's, of controlling the experiment-wise error rate, or the risk of accumulating Type I error.

Analogous to multiple regression, discriminant analysis yields a discriminant function, which specifies a set of beta weights that are applied to the discriminant or predictor variables. A key advantage of discriminant analysis is that the method supplies information on the statistical

significance of the discriminant function as a whole, as well as the particular predictor variable weights (Betz, 1987).

Prior to running the discriminant analysis, Sherry (2006) advises that the predictor variables be examined to ensure the data do not violate seven important assumptions. These are elucidated later in the Results chapter.

The overall discriminant analysis tests the (null) hypothesis that the weighted group means (centroids) are equal by the use of Wilk's lambda statistic. Wilk's lambda can be then converted into a chi-square statistic, with a corresponding level of significance, p . Also calculated are an eigenvalue and the canonical correlation, R_C , which, in the two-group case, is equal to a point-biserial correlation between dichotomous group membership and the continuous distribution of discriminant scores (Betz, 1987).

If the overall discriminant function is demonstrated to be significant, the beta weights, the ways that the individual predictor variables may contribute to the differences between the groups, can be examined for significance. The method for testing the significance of the beta weights is the calculation of a univariate F for each variable and Wilk's lambda for the univariate case (Betz, 1987). Betz explains that relatively smaller values of Wilk's lambda (and larger F -values) point to the variables that contribute the most to the differentiation of the groups.

These beta weights are then further examined in the context of the structure coefficients and the group centroids to characterize the linear discriminant function that best explains the separation between the groups (Sherry, 2006). Since discriminant analysis is a multivariate approach, the values for these predictor variables are then interpreted in the context of the other predictor variables in the discriminant equation. If any of these predictors were removed, the parameter estimates for the other predictors would be changed.

Last, data concerning the accuracy of the discriminant function in classifying the FTF and VC groups are provided.

Power Analysis

The last analysis provided is a post-hoc power analysis which reports the estimated power of the study based on the sample size and the observed effect size.

Results

Introduction

This chapter presents the results of this study. The first section provides an overview of the demographic data for the research participants. The second section provides the descriptive data for the independent variable and the predictor variables. The third section provides the results of the discriminant analysis and the fourth, the results of the post-hoc power analysis.

Demographics

In this section, descriptive statistics for the demographic items are reviewed for the group as a whole, and then, in terms of how the FTF and VC groups compare on the same items.

For the group as a whole ($N = 126$), the group was predominately female, with 95 (75.3%) women participating. The mean age for the group was 32.02, with a standard deviation of 13.26. In terms of ethnicity, the group was predominantly European American, with 107 (84.9%) members participating. Participants who identified as “Other” was the next largest group (7.9%), followed by those who identified as African American (5.6%), and by Asian American and Latino American, each representing 0.8%. In terms of level of education, 84 (66.7%) were in a Master’s Program (second year or beyond), with the remainder having earned a Master’s degree or higher. The majority of participants identified Counseling or Counseling Education, or Social Work as their educational program, with 54 (42.8%) identifying Counseling and 59 identifying (46.8%) Social Work. In terms of professional role, 73 (57.9%) identified as Student, followed by 25 (19.8%) as Clinician, and 19 (15.1%) as Educator. The mean for years of work as a counseling or mental health professional was 4.25, and the mean number of post-secondary technology-related courses was 0.69. In terms of the proportion of the day that participants spent using computers or technology, 33 responded 10 – 25%, followed by 32 who responded 26 –

40%, 26 who responded 41 – 60%, and 23 who responded 61-75%. Last, regarding participants' primary use of computers and technology, 51(40.5%) identified Home Management, followed by 38 (30.2%) who identified Work, and 34 (26.9%) who identified Communication. None of the participants responded that they did not use computers or technology.

An examination of the means of the relevant continuous demographic items—Age, Years of Work, and Technology Courses—revealed no significant differences between the FTF and VC groups. Furthermore, examination of crosstabulation results and bar charts for the categorical demographic items—Gender, Ethnicity, Educational Level, Type of Educational Program, Professional Role, Percentage of Day Using Technology, and Primary Use of Technology—showed that the FTF and VC groups, in terms of number of participants per category and in distribution, were uniformly similar.

Descriptive Data

This section provides the relevant descriptive data for the independent variable, with two levels, FTF and VC, and the 11 predictor variables. The predictor variables include two subscales of the SEQ (smoothness and depth), three subscales of the CRF (trust, expertness and attractiveness), three subscales of the WAI (task, bond and goal), Age, Gender, and Attitude toward the Use of Technology (operationalized by the Computer Liking (CL) scale of the CAS). First is a presentation of the internal consistency coefficients for the 8 process predictor variables. This is followed by a summary of the descriptive data for the independent variable, and then with a summary of the descriptive data for the 11 predictor variables for the total group. Last, the means and standard deviations for the 11 predictor variables are provided for the FTF, VC groups and the total.

Internal Consistency

Internal consistency reliability coefficients (Cronbach's alpha) were calculated for all of the counseling process predictor variables as well as for Computer Liking. The results were as follows: for the SEQ Smoothness and SEQ Depth, .760 and .781, respectively; for the CFR Attractiveness, CRF Expertness, and CRF Trust, .938, .912, and .868, respectively; for the WAI Task, WAI Bond, and WAI Goal, .843, .829, and .637, respectively; and for CL, .891. In general, with the exception of WAI Goal, these results were judged to be in the acceptable to excellent range, based on the rule of thumb provided by Mallery and George (2006).

Descriptive Data for the Independent Variable

In terms of the relevant descriptive data for the independent variable, the assigned experimental group, there was a total of 126 participants ($N = 126$), with a virtually even distribution, 64 ($n = 64$) participants in Group A, FTF, and 62 ($n = 62$) in Group B, VC.

Descriptive Data for the Predictor Variables

Table 3 presents descriptive statistics for each of the predictor variables.

Table 3

Predictor	Range	Mean	Standard Deviation	Median	Skewness
Age	56	32.02	13.26	27.00	1.46
Gender	1	.25	.43	.00	1.19
CAS:					
Computer Liking	28.00	25.31	6.75	25.00	.24
SEQ:					
Smoothness	21.00	26.04	4.37	27.00	-.37
Depth	24.00	17.75	4.47	18.00	.25
CRF:					
Trust	17.00	20.10	4.10	20.00	-.23
Expert	23.00	16.60	4.88	17.00	-.02
Attractiveness	24.00	18.70	5.42	19.50	-.69
WAI:					
Task	22.00	16.02	5.18	17.00	-.36
Bond	18.00	20.25	4.00	21.00	-.45
Goal	22.00	17.51	4.32	18.00	-.33

As is noted in Table 3, the means for Age and Gender were 32.02 and .25, respectively. (Gender was coded: Male = 1, Female = 0.) Thus, the total group was relatively young and predominately female. For Computer Liking, (4-point Likert, total possible ranges of 10 to 40) the mean of 25.31 indicates that participants were moderately positive about their liking of computers and technology. For the counseling process predictor variables, means ranged from a low of 16.02 for WAI Task to a high of 26.04 for SEQ Smoothness. All of these of these subscale ratings were based on measures using a seven-point Likert scale, with higher scores indicating more positive ratings. More specifically, for the SEQ, (the range of possible total subscale scores is 5 to 35, with a midpoint of 20 (neutral)) the means for the subscales of SEQ Smoothness and SEQ Depth were 26.04 and 17.75 respectively. These indicate that participants viewed the session as moderately smooth but did not perceive it as particularly deep. This last result regarding depth was expected and in keeping with the design of the study, as the videorecorded segment depicted only the beginning section of a counseling session and did not attempt to portray an intermediate working phase depicting a deeper level. For the CRF (the range of possible total subscale scores is 4 to 28, with a midpoint of 16), the means for CRF Trust, CRF Expert, and CRF Attractiveness were 20.10, 16.60, and 18.70, respectively. These indicate that participants viewed the counselor as trustworthy and attractive, and as having moderate expertise. Similarly, for the WAI (the range of possible total subscale scores is 4 to 28, with a midpoint of 16), the means for WAI Task, WAI Bond, and WAI Goal were 16.02, 20.25, and 17.51 respectively. This is interpreted to mean that participants viewed the working alliance between the counselor and client as basically neutral in terms of agreeing on tasks, whereas the bond formed between the two was seen as positive. The alliance was seen as moderately conducive to the two working together on goals that had been mutually agreed upon.

Age and Gender are both positively skewed. Regarding Age, this is due to the total group being comprised of mostly of master's students of traditional graduate student age with the remainder being primarily older educators and professionals. Regarding Gender, the positive skewness is explained by the total group being comprised of mostly women, at a three to one ratio. This result is not unexpected in current times with helping professional roles being frequently occupied by women.

It is also noted that, except for SEQ Depth, the counseling process variables all have a slightly negative skewness, suggesting that most of the distributions are concentrated in the upper end of the range.

In summary, these descriptive data fall into the expected range and indicate, overall, that participants rated the stimulus videos positively on the counseling process variables. This lends support to the goal for the videos to show a basic, satisfactorily competent counseling process.

Descriptive Data for the Predictor Variables

Table 4 presents descriptive statistics for the predictor variables for each of the experimental groups, FTF and VC.

Descriptive Data for the Predictor Variables: FTF and VC Groups, and Total

Table 4

Variable	FTF		VC		Total	
	Mean	SD	Mean	SD	Mean	SD
Age	33.32	13.56	32.71	13.03	32.02	13.26
Gender	.27	.45	.23	.42	.25	.43
Computer Liking	25.81	7.71	24.79	5.61	25.31	6.75
SEQ Smoothness	26.94	3.98	25.11	4.60	26.04	4.37
SEQ Depth	17.58	4.66	17.94	4.29	17.75	4.47
CRF Attractiveness	20.58	4.07	16.76	5.97	18.70	5.42
CRF Expertness	16.56	4.78	16.63	5.02	16.60	4.88
CRF Trust	20.91	3.74	19.27	4.32	20.10	4.10
WAI Task	15.94	4.96	16.10	5.43	16.02	5.18
WAI Bond	21.00	3.55	19.47	4.31	20.25	4.00
WAI Goal	17.67	4.57	17.34	4.08	17.51	4.32

As is noted in Table 4, the means for the control variables of Age, Gender and Computer Liking are just slightly different between the FTF and VC groups. This is interpreted as indicating that the two groups are basically equivalent on these variables.

Among the eight counseling process variables, the differences of the means between the FTF and VC groups are, in general, also slight, with CRFAttract being the largest, with a nearly 4-point difference (FTF = 20.58 and VC = 16.76). CRFAttract also had the greatest standard deviation of 5.42 for the total group. The smallest is CRFExpert with a .07 difference in means (FTF = 16.56 and VC = 16.63).

Of interest is which group, FTF or VC, had the higher mean on a particular counseling process variable. For five variables (SEQSmooth, CRFAttract, CRFTrust, WAIBond, and WAIGoal), the mean for the FTF group was greater than VC group. For three variables (SEQDepth, CRFExpert and WAITask), however, the mean for the VC group was higher, although just slightly in each case.

In summary, the differences between the means for the FTF and VC groups among the control and counseling process variables are, in general, mostly slight. It is noted that the three counseling variables were rated slightly more favorably for the VC group, but these differences were also slight.

Intercorrelations among the Counseling Process Predictor Variables

Table 5 presents the intercorrelations among all of the predictor variables.

Table 5 *Intercorrelations among the Predictor Variables*

Predictor	1	2	3	4	5	6	7	8	9	10	11
1 SEQSmooth	—	.351**	.444**	.361**	.557**	.308**	.497**	.314**	-.025	.016	-.038
2 SEQDepth		—	.435**	.681**	.427**	.516**	.440**	.446**	.014	-.097	.147
3 CRFTrust			—	.708**	.747**	.401*	.588**	.275**	.109	.022	.045
4 CRFExpert				—	.575**	.527**	.516**	.395**	.097	-.006	.079
5 CRFAttract					—	.371**	.608**	.284**	-.027	.028	.149
6 WAITask						—	.678**	.771**	-.013	-.134	.024
7 WAIBond							—	.558**	.002	-.008	.089
8 WAIGoal								—	.029	-.140	.063
9 Age									—	.132	.206
10 Gender										—	.149
11 CL											—

* $p < .05$.** $p < .01$.

As can be observed in Table 5, all of the eight counseling process variables were significantly intercorrelated. All were correlated at the $p < .01$ level, except for the correlation between CRFTrust and WAITask and these variables were correlated at the $p < .05$ level. All of these variables were either moderately or strongly correlated (Cohen, 1988).

It is further noted that some of the correlations among subscales of the same instrument were particularly strong. For the CRF, the correlation between CRFTrust and CRFExpert was .708, the correlation between CRFTrust and CRFAttract was .747 and the correlation CRFExpert and CRFAttract was .575. Similarly, for WAI, the correlation between WAITask and WAIBond was .678, the correlation between WAITask and WAIGoal was .771, and the correlation between WAIBond and WAIGoal was .558. Overall, with few exceptions, the correlations within instruments (subscales of the same instrument) are higher in magnitude than correlations across instruments. These results make sense as the subscales should measure aspects of the same overall latent construct and it is logical that they would be related. It is also pointed out that these intercorrelations are, in general, not so high as to indicate that the subscales were measuring the same construct and this is viewed as support for the use of the subscale scores.

In general, examination of the intercorrelations among the control variables, Age, Gender, and CL, revealed that they were not correlated or that the correlation was small (Cohen, 1988). Of the latter group, results ranged from .109 for the correlation between CRFTrust and Age, and .206 for the correlation between Age and CL. This last result was in the expected direction based on the literature.

In summary, all of the counseling process variables were either moderately or strongly correlated, and correlations among the subscales of the CRF and WAI instruments were notably strong.

Discriminant Analysis

Mathematical Assumptions

Sherry (2006) specifies that seven mathematical assumptions be met in order to conduct discriminant analysis. These are:

- (a) two or more mutually exclusive groups, (b) a minimum of two subjects per group...
- (c) any number of continuous variables as long as the sample size of the smallest group exceeds the number of continuous variables...
- (d) continuous variables are measured at the interval scale, (e) no continuous variable may be a linear combination of other continuous variables...
- (f) each group must demonstrate multivariate normal distribution on the continuous variables, and (g) the covariance matrices for each group must be approximately equal. (p. 668)

Sherry also mentions that, although not an assumption per se, discriminant analysis is optimally implemented when group sizes are about equal.

The current study meets all of these assumptions and the one recommendation. For (a), the two mutually exclusive groups was determined by the random assignment of the participants. For (b), there were 64 and 62 participants in the FTF and VC groups, respectively. Regarding (c), the smallest group number ($n = 62$) exceeded the number of continuous predictor variables ($n = 11$). For (d), all of the continuous predictor variables use scales measuring data at the interval level. Regarding (e), although the SEQ, WAI-S, and CRF-S all yield full scales created from their constituent subscales, only subscale data were used in this study. For (f), it is estimated that

the study is robust in regard to this assumption as the group sizes were large and nearly of equal size (64 and 62 for FTF and VC, respectively). Tabachnick and Fidell (2007) assert that, as a conservative recommendation, “robustness is expected with 20 cases in the smallest group if there are only a few predictors (say, five or fewer)” (p. 382). Regarding (g), Sherry (2006) recommends that Box’s M test of homogeneity of variance/covariance matrices be used to assess this assumption. The Box’s M result of .348 (not significant) indicates that variances are equal across groups (FTF and VC). Last, in regard to Sherry’s recommendation that DA is best used when group sizes are of approximately equal size, the group sizes here were nearly equal (64 and 62 for FTF and VC, respectively).

Canonical Discriminant Function

Betz (1987) recommends that the researcher’s first concern, when interpreting the results of a discriminant analysis (DA), should be of the statistical significance of the resultant discriminant functions. In DA, “the number of functions is equal to k (groups) minus 1” (Sherry, 2006; p. 670). So, in the case of this study, there is only one discriminant function (Function 1) as there are only two criterion groups, FTF and VC. Table 6 provides the results for Function 1.

Table 6

Wilk’s Lambda and Canonical Correlation for FTF and VC Groups

<i>Function</i>	<i>Wilk’s Lambda</i>	χ^2	<i>df</i>	<i>p</i>	R_c	R_c^2
1	.785	28.687	11	.003	.464	.215

Examination of the canonical discriminant function (Function 1) revealed a large canonical correlation (.464), with an effect size of $R_c^2 = .215$. The full model test of Function 1

was statistically significant at $p < .003$. This is interpreted as demonstrating that the null hypothesis of equality of group means can be rejected at the .05 level.

As is also indicated in the notes in Table 7, an eigenvalue of .274 was also calculated. According to Betz (1987), the eigenvalue represents the ratio of between-groups to within-groups sums of squares, with larger eigenvalues indicating better functions. In addition, as is shown in Table 6, the canonical correlation R_C was calculated to be .464. Betz states that, “the canonical correlation R_C is a measure of the degree of association between the discriminant scores and group membership, and is equivalent to the eta derivable from ANOVA” (p. 397). Therefore, the R_C of .464 indicates that 46.4 % of the actual variance was accounted for by the function. From this, the value of the squared canonical correlation, R_C^2 , is determined to be .215; this represents the percent of variation in the dependent variable discriminated by the set of predictors or independents.

Significance of the Discriminant Weights

Once the overall function is determined to be statistically significant, then the discriminant weights, the contributions of the individual predictor variables, can be examined for significance (Betz, 1987). Betz states that:

Methods of testing significance of the discriminant weights include a univariate F calculated for each variable (equal to the value of F for a one-way ANOVA with the same number of groups) and Wilk’s lambda for the univariate case. When variables are considered individually, lambda is the ratio of within groups to total sums of squares. A lambda of 1 occurs when all group means are equal, but values closer to 0 indicate that most of the total variability can be attributed to between-groups differences. Thus,

smaller values of Wilk's lambda indicate variables that better differentiate the groups (p. 397).

Table 7 provides the results for standardized discriminant function coefficients for the eleven predictor variables and corresponding values for Wilk's lambda and F-values.

Table 7

Results of Discriminant Analysis of Variables Related to FTF and VC Group Membership (N = 126)

Predictor variable	Standardized discriminant function coefficient	Wilk's lambda	F(1,124)
Gender	.007	.998	.265
Age	.121	.999	.068
CL	.040	.994	.720
SEQ Smoothness	.067	.956	5.687*
SEQ Depth	-.239	.998	.200
CRF Trust	.062	.960	5.150*
CRF Expertness	-.603	1.000	.006
CRF Attractiveness	1.076	.875	17.725**
WAI Task	-.461	1.000	.030
WAI Bond	.266	.963	4.767*
WAI Goal	.272	.999	.186

Note. For Gender, male was coded 1, female 0. The eigenvalue = .274.

* $p < .01$ ** $p < .001$.

Examination of these results in Table 7 for the three control predictor variables, Age, Gender and Computer Liking, shows that their values for Wilk's lambda are nearly equal to 1.0 and that their F-values are nonsignificant, indicating that the means for the FTF and VC groups on these variables are similar. These variables, therefore, were not highly influential in the resultant group centroids.

Among the counseling process predictor variables, four had relatively lower values for Wilk's lambda and significant F-values. These were CRF Attractiveness, SEQ Smoothness, CRF Trust, and WAI Bond. All had F-values that were significant at the $p < .01$ level, with CRF Attractiveness significant at the $p < .001$ level. As is noted in Table 7, CRF Attractiveness and WAI Bond contribute more substantially to the creation of the Linear Discriminant Function (LDF), the latent composite variable that maximally discriminates between the groups. It is also noted that the value of CRF Attractiveness is almost four times the magnitude of WAI Bond. Despite the significance of their F-values, SEQ Smoothness and CRF Trust contribute only minimally to the group centroids, with beta values of .067 and .062, respectively. This result will be discussed further below.

Contributions of Predictor Variables to Group Differences

Similar to multiple regression, the standardized discriminant function coefficients (beta weights) in Discriminant Analysis (DA) are multipliers—the best estimates for maximizing group differences between the groups given the data. Since they are standardized, they can be

compared directly with one another on the same scale of magnitude. Thus, larger magnitude standardized betas contribute more to the creation of the LDF. As was mentioned previously in Chapter 3, however, DA is a multivariate statistical approach and parameter estimates for predictor variables need to be evaluated in the context of the other predictor variables in the discriminant equation. Thus, interpretation of the results from the DA is conditional—i.e., within the context of the variable model as a whole.

Table 8 provides the results for the standardized discriminant function (Coefficient column) and structure coefficients (r_s and r_s^2 columns) for the eleven predictor variables for discriminant Function 1. These are presented in descending order based on the size of the structure coefficients.

Table 8

Standardized Discriminant Function and Structure Coefficients for the FTF and VC Groups

Predictor Variable	Coefficient	r_s	r_s^2
Function1			
CRF Attractiveness	1.076	.722	52.13%
SEQ Smoothness	.067	.409	16.73%
CRF Trust	.062	.389	15.13%
WAI Bond	.266	.375	14.06%
Computer Liking	.040	.146	02.13%
Gender	.007	.088	00.77%
SEQ Depth	-.239	-.077	00.59%
WAI Goal	.272	.074	00.55%
Age	.121	.045	00.20%
WAI Task	-.461	-.030	00.09%
CRF Expertness	-.603	-.013	00.02%

Note. For Gender, male was coded 1, female 0.

Examination of the beta weights for the eight counseling process predictor variables reveals that six make nontrivial contributions to the LDF. In order of largest to smallest, these are CRF Attractiveness, CRF Expertness, WAI Task, WAI Goal, WAI Bond and SEQ Depth, with

values of 1.076, -.603, -.461, .272, .266, and -.239, respectively. Of these, it is noted that variables with negative beta weights (CRF Expertness, WAI Task, and SEQ Depth) have nonsignificant F-values yet make a sizable contribution to the LDF. As was previously mentioned, these variables with negative beta weights are the same for which the means of the VC group were higher than the FTF (See Table 4).

Next, both the standardized discriminant function coefficients and structure coefficients were examined to evaluate the variables that contributed to the group differences. Structure coefficients are the basic bivariate correlations between a calculated predictor variable and the synthetic variable constructed from all of the predictor variables in the linear discriminant equation (Sherry, 2006). Table 8 presents both sets of coefficients. For Function 1, primarily CRF Attractiveness, and to some extent, SEQ Smoothness, CRF Trustworthiness, and WAI Bond were responsible for the group differences. All of these were positively correlated in this function.

It should be noted that the same four variables, CRF Attractiveness, SEQ Smoothness, CRF Trustworthiness, and WAI Bond, have significant values for Wilk's lambda (See Table 7).

Suppressor Variables

Given the foregoing results and discussion, consideration is now given to the possibility of suppressor variables operating among the predictor variables. It was noted, in some cases, that there are variables with fairly larger magnitude standardized discriminant weight (betas) with negative signs for their values whose F-values are very low, non-significant and with values of Wilk's lambda nearly equivalent to 1.0. These 3 variables are CRF Expertness, WAI Task, and SEQ Depth (Table 7). The fact that their values for Wilk's lambda are very close to 1.0 suggests that the FTF and VC groups have similar means on these variables. Their beta weights of -.603, -

461, and -.239, respectively, are as large, or larger than variables with moderately contributing positively-signed beta weights such as WAI Goal, and WAI Bond, with values of .272 and .266, respectively. This indicates that, despite their non-significant F-values, CRF Expert, WAI Task, and SEQ Depth are influential in discriminating between the two groups.

It is theorized that this is due to suppressor variable effects in the discriminant equation. According to Cohen, J., Cohen, P., West and Aiken (2003), a suppressor variable is one which does not contribute to group difference but does contribute to the prediction, and this reflected by the magnitude of its beta weight. It is considered to be a suppressor variable since it suppresses the error variance in the discriminant equation. For instance, suppose that X_1 and X_2 are positively correlated with D . So, if either of these variables increases, it is expected that D will increase. But suppose the standardized discriminant equation comes out as: $D = 1.4 X_1 - 2.7 X_2$. In this example, it can be seen that the prediction for D actually decreases as X_2 increases. This is one example of what is meant by *suppression*.

More specifically, it is postulated that results in this study reflect the effects of net suppression. According to Cohen et al. (2003), net suppression can occur when when X_2 is positively correlated with D but has a negative discriminant coefficient. The presence of X_2 has the primary effect of suppressing the error variance in X_1 , rather than contributing substantially to D .

An alternate explanation to effect of suppressor variables concerns the significant intercorrelations found among the counseling process. As Betz (1987) points out, statistically significant betas indicate predictors that contribute significantly to group differences. Intercorrelations among the variables, however, may diminish the degree to which beta weights can be considered explicit. Similar to partial regression coefficients, if discriminant coefficients

are intercorrelated, one predictor may be attributed with most of the influence, while another relatively little.

Examination of the Group Centroids

In this section, the results for the group centroids will be examined to determine how they contribute to understanding the differences found between the groups. The group centroid is the mean of the discriminant function scores within a particular group; in this case, just two, FTF and VC (Betz, 1987). Another way to comprehend the group centroid is as the mean of the discriminant scores resulting from linearly combining the observed predictor variables (Sherry, 2006).

Table 9 provides the results for the group centroids for Function 1.

Table 9

Group Centroids for the FTF and VC Groups

<i>Group</i>	<i>Function 1</i>
FTF (Face-to-Face)	.511
VC (Videoconference)	-.527

As is observed in Table 9, the FTF group has a value that is nearly a point higher than the VC group. This indicates that the group differences (based on the standardized coefficients), observed on Function 1 pertaining to CRF Attractiveness, and to a lesser extent, WAI Bond can be attributed to the FTF group. As was noted in the previous discussion of group means (Table 4), 3 variables (SEQ Depth, CRF Expertness and WAI Task) had means that were higher for the

VC group than the FTF group. The discriminant weights associated with these variables also have negative valences and these can be attributed to the VC group.

In summary, for Discriminant Function 1, the structure coefficients suggested that CRF Attractiveness, SEQ Smooth, CRF Trust, and WAI Bond contributed most substantially to the differences between the groups, accounting for approximately 98 percent. Looking, however, at the standardized coefficients (betas), CRF Attractiveness and WAI Bond were the only contributing predictors. Therefore, the variance explained by SEQ Smoothness and CRF Trust is also likely explained by CRF Attractiveness and WAI Bond, and while they contribute slightly to creating the synthetic dependent variable, they may not be useful in interpreting the current equation because of their collinearity with CRF Attractiveness and WAI Bond. Also, as was previously noted, CRF Expertness and WAI Task, while having nonsignificant structure coefficients, had, next to CRF Attractiveness, the highest values, but both with negative valences. These predictors are theorized to have acted as suppressor variables and to have likely mitigated the influence of especially SEQ Smoothness and CRF Trust. Examination of the group centroids (Table 9), shows that the group centroid for FTF is higher than VC. Comparing this with structure coefficients (Table 8), it can be concluded that the FTF group saw the session as having the quality of higher counselor attractiveness and, to a lesser extent, a better bond in the working alliance. They also saw the quality of counselor expertise and how task was addressed in the working alliance (negative valences) as relatively lower than the VC group.

The final step was to examine, at a deeper level, the results regarding the CRF Attractiveness and the WAI Bond scales, to determine, more specifically, how they contributed to the group differences. An item analysis was conducted for both of the scales. The analysis for CRF Attractiveness revealed significant differences in the means scores on all of the items that

compose it: Friendly, Likeable, Sociable, and Warm. For all four items, there was an approximately 1 point difference, with the FTF group, in all cases, rating the item higher than the VC group. The analysis for WAI Bond, however, indicated a significant difference in the mean scores for only one of the four items, the one designated as WAI3. This item states “There is a mutual liking between the client and counselor.” The other three items in the WAI Bond scale are: client confidence in counselor’s ability (WAI5), client feeling that counselor appreciates him or her (WAI7), and there is a mutual trust between client and counselor (WAI9). In the case of the item concerning “mutual liking”, however, the FTF group rated this item slightly less than half a point higher than the VC group. It is noted that the construct inherent in this item – *mutual liking* – is similar to Likable on the CRF Attract, except that Likeable is construed to focus solely on the counselor’s quality. Taking all of these items together – Friendly, Likable, Sociable, Warm, and Mutual Liking – suggests that a latent construct of attractiveness or appeal may be operating here, with the meaning of attractiveness now extended to not just include the counselor qualities, but the construct of mutual liking, a quality that describes the interaction between client and counselor. In conclusion, it is theorized that this latent construct of attractiveness may be most contributory in characterizing Discriminant Function 1.

Classification

Table 10

Hit Rates Using a Discriminant Function to Predict Membership in FTF, and VC Groups

Actual Group	Predicted Group		Total
	FTF	VC	
FTF			
No.	<i>49</i>	15	64
%	76.6	23.4	50.8
VC			
No.	19	<i>43</i>	62
%	30.6	69.4	49.2
Total			
No.	68	58	126
%	54.0	46.0	

Note. Values on the descending diagonal are “hits” and are in bolded, italic type. There are a total of 92 hits, or 73.0 %. Conversely, the 34 misses account for 27.0 % of the cases.

Results regarding the accuracy of the discriminant function in classifying members of the FTF and VC group are presented by cross-tabulation in Table 7. As shown in the table, the function resulted in correct predictions being made for 73.0 % of the participants; 76.6% of the

FTF participants and 69.4% of the VC participants were correctly classified. Betz (1987) specifies that the formula, $p_1 a_1 + p_2 a_2 + \dots p_k a_k$, can be used to determine the success rate expected on the basis of chance. In the present case, based on Table 7, the formula yields this value: $(50.8\%) (54.0\%) + (49.2\%) (46.0\%) = 50.0\%$ expected on the basis of chance. Thus, the obtained value of 73.0 % is an improvement over the value based on chance of 50.0%, and, by using the z-test for the difference between two proportions (e.g., Glass & Stanley, 1970, p. 313), it is determined that it is a statistically significant improvement.

Power Analysis

A post-hoc power analysis was completed based on the results of the discriminant analysis. For the observed squared canonical correlation ($R_C^2 = .215$), the number of participants ($N = 126$) and an α error probability of .05, the resulting power was .948. This indicates a strong likelihood that the analysis was sufficiently sensitive to identify significant variable relationships.

Discussion

Exploratory Questions

The primary exploratory question guiding this study was: Would counselors and other mental health professionals perceive differences in counseling process between a basic session delivered FTF versus VC? The three variables of interest, working alliance, session quality, and counselor qualities, are all frequently noted constructs in the common factors model. This study used videos that were of a simulated, basic, sufficiently-working, typical, college mental health counseling session segment (at its beginning). The videos were produced to be equivalent, except that one was conducted by high-quality, dedicated, videoconferencing technology, and one was done in the traditional face-to-face manner. The primary focus of the statistical analysis was, therefore, to determine whether there were differences between the ratings of these two conditions—those assigned to witness the FTF video and those assigned to view the VC video.

A second exploratory question was: Would age, gender, and attitude toward the use of technology be factors that could influence counselors' perceptions? These variables as well as those associated with working alliance, session quality, and counselor qualities were tested as predictor variables in the discriminant analysis. The discussion that follows is guided by these two exploratory questions.

Differences between Assigned Groups

As was noted in Table 6, the value of Wilk's lambda for the discriminant function calculated was .785, distributed as a chi-square (χ^2) statistic ($11, N = 126$) = 28.687, $p < .003$. This is interpreted as demonstrating that the null hypothesis of the equality of group means can be rejected at the .05 level, and as supporting the conclusion that there was a significant difference in the ratings between the assigned groups, those who watched the face-to-face (FTF)

video and those who watched the video done by videoconference (VC). These results also lend support for the conclusion that there was a significant difference between how the participants rated the two videos (FTF, VC) on the selected measures of counseling process (session quality, counselor qualities and working alliance). This conclusion differs from the expected, hypothesized direction. As was mentioned in the previous chapter, the two groups were very similar on all of the demographic items and of nearly equal size ($n = 64$, and $n = 62$, respectively). Thus, for this primary exploratory question, the results for this sample show a significant difference between the assessments of the two groups. This finding of significance, however, should be considered in the context of the rather small effect size (see Table 6). Examination of the means of the counseling process variables reveals that the two groups rated them very similarly. The variable with the greatest difference, CRF Attractiveness, was slightly less than a four point difference on the overall scale; the difference between a slightly positive rating and a moderately positive one.

Examination of the group centroids (see Table 9), shows that most of the differences favored FTF. Three of the differences, however, favored VC. These findings are expected to have implications for how videoconferencing counseling is viewed and practiced in the professional counseling and mental health fields. These will be discussed in more depth in a later section.

Age, Gender, and Attitude toward the Use of Technology

The results from tests of equality of group means for the predictor variables of age, gender and attitude toward the use of technology indicate that the experimental and the comparison groups did not differ on any of these three factors, with p -values of .795, .607, and .398, respectively. An examination of the mean scores for age, gender and attitude toward the

use of technology liking indicate that the overall sample was relatively homogeneous, with participants being relatively young in age (Mean = 33.02, SD = 13.26), predominantly female (Mean = .25, SD = .43) and moderately positive about liking computers (Mean = 25.31, SD = 6.75). Thus, the results for this sample lend support for the conclusion that there was no significant difference between the FTF and VC groups on these three predictor variables.

Counseling Process Predictor Variables

With the overall discriminant function being statistically significant and the predictor variables of age, gender and attitude toward technology ruled out as significant factors, the next step was to examine the contributions of the remaining predictor variables—those measuring the counseling process—to the differentiation of the groups. The discussion in the previous chapter concluded that CRF Attractiveness, and to some extent, WAI Bond were primarily responsible for the group differences. Both of these were rated higher by the FTF group. It was also noted that all of the counseling process variables were either moderately or strongly correlated.

Looking more closely at the mean values for all of the counseling process variables, however, it is noted that the mean differences between the groups on almost all of the variables is very small; even the largest difference, CRF Attractiveness is slightly less than a 4 point difference (range from 4.0 to 28.0). It is further noted that for three of eight counseling process variables, the VC group had the higher mean, though these were slight; these were: SEQ Depth, CRF Expert, and WAI Task. This comparison of means indicates that, even with the statistically significant finding of differences between the groups on these predictors, these differences were fairly small, indicating that, overall, participants found the FTF and VC sessions to be more similar than different.

Interpretation of Findings

Given the significance of the discriminant function, however, and the identification of two contributory counseling process variables, the next challenge is to provide plausible explanations for these findings.

Counselors' Perceptions

One plausible explanation for the mixed findings is that the participants in the study—counselors and counselors-in-training—detected perhaps subtle but important differences in the two counseling environments, VC and FTF. Indeed, they were different environments. Despite the equivalency of the counseling content in the videos used in this study, there were a number of important considerations related to these environments that should be noted. The first is, quite simply, that in the distance situation, there is not one shared physical environment. In the VC counseling interview, one person cannot reach out to touch the other on the arm, nor pass a box of tissues. Instead of a shared space, there are two separate environments, and in most one-to-one, FTF counseling situations, the counselor and client would generally be the only persons in that room or environment (observers for supervision or consultation would likely be in a different room). Thus in a VC session, both the counselor and client may (perhaps subtly and unconsciously, but correctly) construe this separateness, and along with this separateness can come a different set of behaviors, ones different from being together. As psychological beings, humans socially construct these situations differently, and based on these constructions, can act differently (Berger & Luckmann, 1966). For instance, one might socially construct the use of the telephone, another distance medium that has been shown to be effective with some counseling populations and situations (Mallen et al., 2005; Grant, Elliott, Weaver, Bartolucci, & Geiger, 2002), as different from being present in person. Not only do individuals who call on a phone not

share the same physical environment, in this instance, they cannot see the other's behavior and body language and are left to infer it. In the stimulus videos, the actors portraying the counselor and client were only instructed to keep to the pre-determined counseling dialogue and were not coached on to how react in either the distance or FTF situations. And although the videoconference situation was not new to either of them—having practiced with the technology before—they can be said to have acted naturalistically in the distance situation, bringing the constructions that they had formed to it.

The second consideration is that, in the videotaped VC session, the counselor and client must interact with devices of technology in order to communicate. That is, they must each interact with a monitor, camera and speakers (facilitated by computers and the Internet in the background) in order to connect with and react to the other. Similar to using a phone, users are aware that they are using a device of technology to interact with one another; for instance, a phone must be turned on, dialed, put close enough to one's ear, and so forth. The device's physical presence is noticeable, and one is aware that one is communicating through it. So too with videoconferencing; on each end, the individual can be immediately aware of the presence of the equipment—the monitor, camera, and speakers. Thus, in the minds of users, this form of communication can be constructed to be mediated through this technology, thus shaping their behaviors in ways potentially different than in face-to-face.

A third consideration is that the video information provided to the individuals in the VC session (in this case the persons representing the client and counselor) that they are witnessing different environments. Just by observing the features of each of the other's room, an individual can easily tell that the other is in a different place; in almost all cases, the features and artifacts of the remote environment continually signal to the person on the other end the difference between

the two environments: the color of the walls, the plants, the artwork hanging on the wall, whether it is inside or outside, how dark or light it is, and so on. In their review of the theory and research pertaining to the physical environment and counseling, Pressly and Heesacker (2001) cite eight architectural characteristics of space that may enhance or detract from the counseling process, including accessories (artwork, objects, plants), color, furniture and room design, lighting, smell, sound, texture and thermal conditions. Pressly and Heesacker point out the possible psychological responses to these characteristics and their counseling implications, including the physical environment's "potential to enhance the client's physiological and psychological health" (p. 149). In the simplest VC environment, then, there are two physical environments (one directly and immediately affecting each of the individuals), and the condition of each individual seeing and hearing some of the events and characteristics of the other's environment, also possibly influencing their interaction. In summary, these ever-present environmental factors help to create a context in which the individuals using VC technology are constantly reminded of their separateness and their communication over distance. It is hypothesized that this overlay of distance and separation colors and shapes the communication done by VC, and in particular, this may have affected the individuals who portrayed the counselor and client in these videos and then, subsequently, the counselors and other mental health professionals who participated in this study, who picked up on this difference while witnessing the videos.

Another possibility that may explain the results obtained in this study is one that Rees and Stone (2005) have suggested—that counselors are biased in favor of FTF and against distance, and therefore, rated FTF more favorably, despite the equivalence of the content of the two videos. If counselors are indeed biased, though, one might expect that all or nearly all of the counseling process variables would have been rated differentially in favor of FTF, but this was

not the result here. It could be argued, however, that the two salient counseling process factors (primarily CRF Attractiveness and, to some extent, WAI Bond), somehow activated the counselors' biases, whereas others did not. Just how these counseling process variables triggered the counselors' biases and why the other variables did not is not apparent. Given that the participants in this study were relatively young ($M = 32.02$) and, overall, had positive attitudes toward the use of technology ($M = 25.31$), it is conjectured that this group may have been fairly open to the use of videoconferencing technology in counseling and not predisposed to be biased against its use. Departing from the explanation put forth by Rees and Stone, it is theorized here that one possible factor contributing to the difference in the two groups was how the participants interacted with the two stimulus videos and the ways that they differentially depicted the two counseling environments.

Factors Influencing Perceptions of the Stimulus Videos

As mentioned previously in the Method section, the FTF and VC videos were intentionally constructed to look substantially different from each other. A prominent difference was the use of four simultaneous subframes in the VC video, each of which is approximately one fourth the size of the frame of the FTF video. It is hypothesized that one reason that the participants rated the VC video lower is that, because of the smaller subframes, the details in the video portion are less apparent, giving the appearance of less involvement, and, therefore, supporting less of a connection between the counselor and client. An analogy could be made to watching a movie on the big screen in the movie theater, compared to watching the same movie on a small, portable DVD player. For the viewer, the movie on the big screen can be said to dominate one's attention with its more lush video display and deep and loud audio, tending to exclude most of the competing stimuli. On the other hand, the portable DVD player, with its six-

inch screen and tiny speaker, is not as likely to command one's attention, and, because of its small size, displays the movie with diminished magnification and less vibrant audio. Another analogy is viewing a part of our galaxy, the Milky Way, on a clear night with the naked eye (sometimes one can make out "clouds" of stars), and then viewing the same part of space through a telescope. The data, the light emanating from the stars, is arguably the same, but the details come alive and are comprehended differently with the magnification; the gestalt for the viewer is different—clouds and swirls of stars and nebulae versus points or blurs of light. Not only are one's attending behaviors and reactions different, but one becomes aware of processes and dimensions that one did not see previously.

Another issue that arises with the four-frame construction of the VC video is the possibility of selective attention of some of the participants, directed to one or two of the subframes rather than the whole—all four subframes. It is possible that some of the counselors or other mental health professions paid more attention to what was happening in a particular subframe, resulting in the relative minimization of the other three and the event as a whole. This process, focusing on either just the counselor or client, could give the appearance of the two being more detached, and thus, less engaged, leading to the lower ratings on the four significant variables. The phenomenon is similar to the picture-in-picture (PIP) capability commonly found in many modern television monitors. When PIP is activated to bring up the content of another station, one's attention can be said to primarily remain with one station or the other; at the very least, the viewer's attention is divided between the two. The VC video, having four simultaneous subframes (a split frame effect), is more complicated than simple PIP, but the inclusion of the data from all four perspectives was considered vital in accurately portraying the VC environments and processes.

An additional possible explanation for the lower ratings of the VC video is that the acting, and, therefore, the content of the video, was different. It may have been that the actors, while interacting in the VC environment, may have, perhaps subtly, reacted and acted differently. The recording of the VC video was held approximately a week later than the FTF video, and it is surmised that both of the actors brought slightly different emotional and physical energy levels with them to this session. Furthermore, even though both actors were fairly accustomed to the VC environment and had practiced the counseling situation in it, it is possible that one or both of them felt and behaved differently in the distance situation, perhaps in a slightly less connected and more distant fashion. This acting, with not as much of a feeling of connection, could then have been subtly conveyed and perceived by the participants, even though the content of the dialogue was kept equivalent.

A further consideration, also related to how the videos were constructed (and mentioned previously in the Method section), is that the camera positions, and thus the views of the client and counselor, are different in the two videos. In the FTF video, the actors are positioned so that they are turned slightly toward the camcorder, so that it is not a straight side shot (more of a three-quarter angle), whereas in the VC video, because of the necessity of making visible the image on the monitor, the views are either straight face-on shots (from the Polycom camera on the cart) or straight side shots (from the camcorder in the room). Based on these different camera angles and the fact that the VC video is a composite containing four views, slightly different expressions and body language may be observed. With the FTF video, it may be that having the counselor and client actors positioned so that they were turned slightly toward the camera and less directly face-on allowed the viewer to notice facial and other expressions that conveyed more of a connection and a closer working relationship. With the VC video, depending in part on

how the four frames were attended to, the viewer saw either a face-on view, which may have been interpreted as slightly more confrontational, or a side view, which may have been construed as slightly more detached. An analogy can be made to the clinical supervision of a one-to-one session; because of being in an observing position, either seeing from behind a one-way mirror or through the lens of a camcorder in the consulting room, the supervisor witnesses the session from a perspective different from that of the counselor or client, possibly leading to a different interpretation of expressions and body language.

In summary, possible explanations for the groups' differences focused on how counselor/observers may have constructed their experience of the two videos, on how the actors may have subtly acted differently in the videos, and on how elements related to how the two different counseling environments were depicted in the videos may have been perceived by participants. It should be reiterated, however, that these accounts are an attempt to explain the slight, but significant differences between the groups, and that, overall, participants rated the FTF and VC sessions more similarly than different.

Strengths and Limitations

Strengths

This study contributes to the relatively recent body of literature on distance counseling and is one of the first to focus on the perspective of the counselor as expert observer of the client-counselor dyad. Six key strengths were identified related to the study's experimental analogue design, its use of random assignment, its statistical power, its utilization of well-validated measures of counseling process, the support provided by two manipulation checks, and its employment of dedicated, high-quality videoconferencing technology.

First, a salient strength of an experimental analogue design is its capacity to rule out factors other than the means by which the simulated counseling session was done. This contributed to strengthening the study's internal validity. According to Heppner et al. (1992), the "hallmark of analogue research is experimental control, primarily by eliminating extraneous variables and manipulating specified levels of an independent variable" (p. 308). The use of an analogue design here eliminates possible extraneous variables that would likely be present in an *in situ* design—variation in the form of differences in the styles or approaches of the counselor, individual styles of the client, and variation from the differences in the interaction of counselor and client factors, to name just some. In addition, the level of the independent variable, in this case, the view of the VC and FTF environments, was clearly kept the same for all participants. Furthermore, the design employed here permits the isolation and examination of specific small events—the counselor interventions, which were construed to be basic listening and attending skills (Ivey, Ivey & Simek-Downing, 1993). The design also helped with the reduction of practical obstacles, particularly with subject availability as a fully powered *in situ* design was beyond the financial limits of this study.

Furthermore, Heppner et al. (1992) provide a model entitled, *Evaluating the Relevance of Analogue to Real-Life Counseling*, by which "the external validity of analogue research also can be evaluated in part by examining the resemblance of some of the variables that depict real-life counseling: (1) the client and his or her presenting problem, (2) the counselor, and (3) the counseling process and setting" (pp. 310-311). For each of these categories, typical variables may be evaluated to be of relatively high degree of resemblance, moderate degree of resemblance, or relatively low degree of resemblance. Since the current study involves a simulated counseling session, the counseling process and setting category seemed most relevant

and the process depicted in the videos was evaluated by the Primary Investigator to have a moderate degree of resemblance in the areas of: interventions, interpersonal exchange, client reactions, client change or outcome, environment. Furthermore, the Primary Investigator judged it to have a relatively low degree of resemblance in the area of: duration.

A distinct advantage of the analogue design was its control of extraneous sources of variation that would be present in an *in situ* study. That is, in a study in which different dyads of counselors and clients went through actual sessions, either FTF or by VC, it would be difficult to control the variation presented by the individuals themselves, in terms of their personalities, preferences, backgrounds, emotional states, presenting issues and attitudes toward counseling, just to name some possible factors. In addition, it can be argued that the analogue design permitted counselors and other mental health professionals to focus more on the counseling process that is depicted. That is, the role of expert observer had the advantage of allowing the participant to evaluate the content of the process more critically and without the same concerns or expectations that a counselor in charge of a session might have; the participants did not have to monitor their own subjective experience, strive to be intentional, attend to the client's communication and experience, or be responsible for the course of the session and its outcome, and so forth.

Second, random assignment led to two equivalent groups of counselors and other mental health professionals for this comparison. Random assignment is a hallmark of experimental research and contributes to the internal validity of the study.

Third, the study also had adequate statistical power with a total group size of 126. This contributes to the study's statistical conclusion validity.

Fourth, another asset of the study is its utilization of three well-validated measures of counseling process, which further contributes to the study's construct validity.

Fifth, the implementation of two manipulation checks (one with a prototype, and one with the actual stimulus videos) to confirm the use of the two stimulus videos provides support to the study's construct and statistical conclusion validity.

Lastly, by using dedicated, high-quality videoconference cameras and computers utilizing more than sufficient bandwidth over the Internet, the videoconference stimulus video was created in conditions best suited to approximate the audio and video quality experienced in a face-to-face interview. It can be argued that the two stimulus videos provide virtually equivalent content about the simulated counseling session but by essentially different modalities of delivery, resulting in a high consistency of stimuli across experimental conditions.

Limitations

There are a number of important limitations to the study. Since it used an analogue research design, it has limited generalizability. The primary reason for this is that the participating counselors, counselors-in-training and other mental health professionals observed a pre-recorded counseling session, and, thus, it is not possible to say whether their experience would have been the same had they actually participated in a videoconference or face-to-face counseling session. However, as is noted from the related practices of supervision and consultation, observing a session can certainly be beneficial, sometimes leading to insights into processes and factors which escaped the actual participants.

The study also did not employ a random sample from a larger population of counselors and mental health professionals. Participants were randomly assigned to either the control (FTF) or experimental (VC) condition, with the expectation that the resulting groups would have

similar characteristics, and this was verified by the post-hoc descriptive results. Furthermore, the study relied on self-report and voluntary responses from the participants; it is possible that those who did not choose to participate might have responded differently.

A second caution about the generalizability of the study is also needed, because the sample consisted primarily of relatively young social work and counseling students who were beyond their first year of a master's program. Although these students had received a base of counseling experience from their practicum and other courses, their professional counseling experience could not be considered to be extensive. Because of the accessible and straightforward nature of the counseling process instruments used in this study, however, it is expected that a reasonably informed lay person could have adequately evaluated the counseling videos shown.

An additional limitation related to construct validity has been previously noted regarding the construction of the VC video. Because the VC video utilizes four simultaneous subscreens, with each of these subscreens approximately one quarter the size of the entire FTF video, it is plausible that participants may have had more difficulty discerning the quality of the video content in each subscreen. The size of the subscreens and the likely selective attention of some of the participants may have put the VC video at a disadvantage, in that the viewer may have been less able to pick up on the nuances of an interaction that was already transpiring in two locales. These limitations to the VC video were recognized at the time of their conceptualization, and it was decided that the four-frame model most accurately captured the complexity inherent in a VC environment. With respect to the problem of selective attention, it was judged that, though it was likely that some participants' attention might be selective, it was reasonable to think that, given

the choice of four screens, a participant's attention might move to several of them, still providing sufficient exposure to the distance environment.

Implications for the Common Factors Model and Counseling by VC

The results have important implications for the establishment of common factors in a VC counseling session. The main conclusion that can be drawn from the results is that, despite the finding of significant differences between the groups on the predictor variables studied, the differences observed were fairly small, indicating that overall, participants found the FTF and VC sessions to be more similar than different. As was noted earlier, the results for the means of the predictors showed that both FTF and VC groups rated the session above midpoint for all of the counseling process variables except for SEQ Depth. This result for SEQ Depth, however, was in the intended direction, as the purpose of the videos was to show just the beginning, exploratory stage of session, and not any in-depth interactions. These results have implications for the conceptual framework of this study mentioned in the first chapter, the theoretical approaches of Carl Rogers, Allen Ivey and Bruce Wampold.

The overall positive ratings by both the FTF and VC groups support the conclusion that Rogers's (1957) first condition for therapeutic personality change – psychological contact – was present in the session. Psychological contact is often viewed as the starting point for the development of a therapeutic relationship, and the positive ratings of the VC group on the Working Alliance factors of Goal, Task and Bond suggest that psychological contact is possible in the VC environment.

Similarly, the overall ratings by both groups lend support for the presence of the interventions that Ivey terms as *counseling microskills*. Counseling microskills are often viewed as the behavioral building blocks—the interventions and responses—that lead to the development

of a working alliance, accurate empathy on the part of the counselor, and to therapeutic change. As was described previously in the Introduction and Method chapters, the seven exchanges between the counselor and the client in the session were designed to depict specific attending and listening skills (see Appendix E), interventions frequently used at the beginning, exploratory stage of a session. Except for SEQ Depth, the positive ratings by both groups on SEQ Smoothness, WAI Goals, Tasks, and Bond, CRS Attractiveness, Expertness, and Trustworthiness indicate the presence of the microskills. To put it another way, if the counselor had not intentionally used attending and listening skills, it would be unlikely that the session would have been rated so positively. Furthermore, the positive ratings by the VC group suggest that the use of counseling microskills can be established in some VC environments.

Rogers's first condition of psychological contact and Ivey's microskills are arguably some of the foundations of current common factors theory. Furthermore, as it pertains to this study, the overall positive ratings on WAI Goals, Tasks, and Bond, CRF Attractiveness, Expertness, and Trustworth, and SEQ Smoothness suggest that, in general, common factors related to working alliance, and important counselor and session qualities may be established in similar ways in both the FTF and VC environments.

If one considers the counselor's behavior, for instance, many of the microskills or helping skills that are essential to the establishment of a working alliance and other common factors in the exploration stage of a counseling session may be conveyed in a very similar manner by the counselor in the VC environment. In particular, interventions by the counselor that have an active verbal component such as open questions, encouraging, summarizations, paraphrases or restatements, and reflections of feeling may have nearly the same audio content conveyed to the client. Visual nonverbal microskills, although not the same as in FTF, can argued to be similar in

the VC environment. Consider eye contact, gestures, body position, affect and other behaviors that convey attending, listening and encouraging. The counselor in the VC environment can intentionally act to display these behaviors and it is reasonable to suppose that these, in most cases, can be perceived by the client on the receiving end in a way similar to FTF.

However, the finding that CRF Attractiveness and, to a smaller degree, WAI Bond were the factors that contributed the most in explaining the group differences may point to an important difference in how common factors are established in the VC environment. As was noted in the previous chapter, the four items that comprise the CRF Attractiveness–Friendly, Likable, Sociable, and Warm—and the one significant item from the WAI Bond–Mutual Liking—suggests a latent variable (for the sake of argument called Mutual Attraction) that may be somewhat more difficult to establish in the VC environment. It is speculated that because the establishment of this factor may rely considerably more on the nonverbal information (visual content), counselors in the VC situation may be at a disadvantage because eye contact, affect, gestures, and other forms of body language may not be as easily conveyed or noticed. This visual information is seen by the recipient in two dimensions on the monitor, and this, and likely other factors, immediately cue the participants to construct separateness as characterizing their communication. Another factor that may affect the establishment of this factor is the relative quality and sophistication of the VC environment. It is clear that a dedicated telepresence system with a High Definition floor-to-ceiling monitor can more effectively display the nonverbal behaviors needed to establish Mutual Attractiveness than does a webcam that shows just a headshot. In general, the findings for CRF Attractiveness and WAI Bond suggest that counselors should not consider nonverbals to be communicated in the exact way as in FTF. Given that many common factors may rely on the successful communication of nonverbal behaviors, counselors

may need to use interventions intentionally developed for the VC environment. An example of this is the counselor monitoring his or her own behavior using the PIP feature that is available with many VC softwares. The results related to counselor attractiveness and mutual liking suggest that counselors may need to do more in a VC session to establish these sorts of qualities. This is discussed further in the section that follows.

Implications for Counselors and Other Mental Health Professionals

The results of this study prompt consideration of a number of meaningful implications for counseling and mental health practitioners, supervisors, educators and policy makers. First, for practicing counselors and mental health professionals, a viable question is continues to be whether videoconferencing could be used to communicate effectively with an individual client. The results of this study lend support to the proposition that VC should be explored as means of facilitating counseling in certain situations. And for the increasing numbers of counselors who are currently using VC in their practices, there are some clear recommendations based on the findings of this study. In particular, counselors should take special care not to treat the VC environment as the same as the FTF environment. The results of this study suggest that the counselor is likely to need to work harder and to do more to be effective and to establish a working alliance. Because the VC environment may be less conducive to creating an immediate and effective connection, it is recommended that counselors develop the awareness to act in a more demonstrative and animated manner (when indicated) and to strive to communicate with explicit clarity. This may mean paying particular attention to one's body language and expressions; in general, it may mean using highly visible movements, showing distinct emotional expressions, and speaking carefully and with clarity.

It is recommended that counselors pay particular attention to how eye contact is established and maintained; depending on the type of videoconferencing camera used and the position in which it is set up, there is likely to be a slight disjunction between the angle of the camera and the angle of the counselor's gaze, who would be looking at the monitor, not directly at the camera, to see the client's face and eyes. When possible, counselors should direct their gaze toward the camera from time to time, and avoid looking down or away from the monitor or camera.

Because behaviors and expressions may not be as immediately discernible, it also recommended that counselors frequently check out their communications with clients and ask for feedback about how they are being perceived. In cases where it is available (such as the recent versions of Skype), counselors should experiment with using the picture-in-picture (PIP) feature with their software to monitor their own body language or to set up a camcorder in their office (out of view of the VC camera and with explicit and informed consent) to record their own behavior during sessions. Similarly, dedicated systems (like those using Polycom cameras) and systems using personal computers and webcams are capable of producing recordings of a VC counseling session, which may then be reviewed by the counselor or shown in supervision or consultation. This is highly recommended as a counselor begins using VC to conduct counseling sessions.

It is a common practice of many counselors to be in phone or email contact with their clients, especially when one or the other is away for a significant amount of time. This extended contact provides a continuity of care and support within an established counseling relationship. Videoconference communication arguably provides better data than phone or email contact, as

both the client and counselor have visual information that makes their body language and affect accessible.

Next, it is logical to consider how videoconference communication might be used effectively with counseling groups. For example, VC might be used to bring a member into a group from a remote location, or with current software applications such as Adobe Connect, Skype and iChat, all group members could conceivably interact with each other from different remote locations. Other therapeutic possibilities include involving an expert therapist/supervisor in a session through VC or using a Reflecting Team (Anderson, 1987) in a family session, potentially with each Reflecting Team member (expert) contributing from a remote location.

The implications for supervision, training, and education are numerous. In supervision, for example, an expert supervisor could be brought in by VC to help with a difficult situation or diagnosis. Opportunities for counselor training could be expanded by using VC to enable counseling trainees to interact with clients at a clinic or center whose presenting situations differ from those that they deal with at their “home” clinic. It seems clear that VC has the potential to expand and enrich counselor trainees’ clinical experience by exposing them to more multicultural and clinically unique counseling situations. Lastly, an example of a clear use of VC in counselor education (just one of many) is to bring an expert educator or panel into the classroom without the need for them to travel to the class’s location.

Implications for Future Research

The results of the current study prompt consideration of a number of implications for future research. In general, more research needs to be done on how clients, counselors, and supervisors perceive the effectiveness of the VC environment in actual counseling sessions. In

addition, more research needs to be done to identify the counseling situations most conducive to VC and the counseling populations that may be best served by it.

A number of specific study designs are recommended. Especially indicated are studies with an experimental design that examines how counselors respond to the VC environment versus face-to-face *in situ*. In particular, examining how counselors evaluate common factor variables after participating in an *in situ* session would help to further identify the counselor qualities and other factors that may need to be addressed or enhanced in order to conduct a VC session effectively. Studies should optimally examine the same process variables and measures used in this study as well as others that examine other types of common factors especially in the categories of client characteristics, change processes and treatment structure (Grencavage & Norcross, 1990). Since these *in situ* sessions could easily be videorecorded, ratings by expert counseling observers could also be obtained, allowing for comparisons of expert supervisory and consultation perspectives with those of the clinicians in the sessions.

Also recommended is an up-to-date study with an experimental design that examines client evaluations of counseling process and outcome variables in the VC environment versus FTF *in situ*. The current study examined only process variables from the counselor-as-expert observer perspective, and it is a logical next step to examine whether VC processes lead to satisfactory counseling outcomes. An example of a study that would examine counseling outcomes from the client's perspective would be to request that adult clients receiving career counseling by VC rate their career self-efficacy at various points in the progression of counseling—just before counseling began, at midway, at termination, and at six months after termination. These ratings could be compared with those from clients receiving FTF career counseling, ideally with clients randomly assigned to the two types of mediums. There are a

number of instruments that could be used to gather data on career self-efficacy, two of which are the Kuder Task Self-Efficacy Scale (KTSES; Lucas, Wanberg & Zytowski, 1996), and the Career Decision-Making Self-Efficacy scale (CDMSE; Taylor & Betz, 1983). Ideally, such a study could be done with a modern telepresence system that could include floor-to ceiling monitors, so that life-sized video images of the person in the remote location could be used. This would provide the best approximation to face-to-face and allow for a full display of the counselor's and client's body language.

Similar studies could be devised to study constructs related to counseling outcomes in mental health treatment such as presence of symptoms such as depression or anxiety. Such studies could also incorporate the perspectives of expert counseling observers, and would point to commonalities and differences between counselors' and clients' perspectives on outcome variables, including those related to common factors.

In addition, more research is needed to understand the processes, backgrounds and factors that relate to an individual's readiness to use VC as a medium for counseling. Studies that utilize a structure equation modeling research design would ideally help scholars identify the relationships among variables that might elucidate the external, intrapersonal and interpersonal factors related to a person's willingness and capacity to engage in a VC session. Such an empirical study would contribute to the emerging body of theory about counseling communication by distance and would likely have implications particularly for client assessment prior to distance sessions.

Another important topic for future research is to study the use of picture-in-picture (PIP) technology as a self-monitoring process in VC counseling sessions. PIP technology is now a common application included with both dedicated videoconference systems and with computer

software applications such as Skype and iChat. PIP capability allows each of the VC participants to see herself or himself as well as the person in the remote location, usually in a smaller window positioned at the bottom left of one's monitor. In the current study, PIP capability was available but was not used, as it was considered to introduce an additional, possibly complicating factor that might have further influenced the portrayal of VC counseling session in the video. PIP technology, however, is arguably a potential boon to both counselors and clients, as it provides completely synchronous visual feedback about one's behaviors and body language. This is not a capability that one (usually) has in a face-to-face environment, and can be likened to videorecording that one might review for supervision or consultation, except that it is live and enables one to be conscious of what one is doing and able, therefore, to make adjustments. A study with an experimental design that compared counselors using and not using PIP capability during VC sessions would be a logical first step in exploring the use of this technology. Would counselors find the self-monitoring capacity that PIP provides to be an aid or a distraction? Or would some counselors find it be an asset and others not? To what extent is the process of selective attention a factor? Such a study would be a first step in exploring factors that relate to how self-monitoring can affect the adjustments counselors might intentionally make during sessions.

The current study has examined counseling done by videoconferencing in its simplest configuration—a single counselor and a single client. Further research should be done to explore its usefulness with other configurations, such as with couples, families and groups. Research in this vein would invariably introduce the use of multipoint videoconferencing technologies such as Adobe Connect, which could involve three or more locations. As was mentioned previously, videoconferencing is also a potential benefit to the related counseling areas of supervision and

consultation. Communicating by VC allows a counselor to receive advice and feedback from an expert on a particular counseling population or situation, who might not be in the local vicinity. Further research should also be done to explore the usefulness of videoconferencing in supervision and consultation, and in the related processes of Reflecting Teams (Anderson, 1987).

Lastly, the current study focused on a single, opening segment of a counseling session facilitated by VC, in which the individuals portraying the counselor and client had become accustomed to the medium by previous practice with it. Future research should ideally explore how counselors and clients adapt to the process of using VC for sessions over time. Such research could potentially point to training or educational processes that could be implemented to enhance the VC counseling experience for counselor and clients.

Conclusion

Before the public introduction of the Internet in 1991, distance counseling was limited mostly to the use of the telephone and the exchange of letters between counselors and clients. Since 1991, however, there has been a rapid development of communication tools, employing advances in technology that mostly use the Internet, allowing counselors to serve clients in remote locations all over the world when face-to-face sessions may not be feasible. These tools include asynchronous email communication, synchronous text-based chat, and now videoconferencing. Prior to around 2005, the use of videoconferencing to provide counseling services was substantially limited by the relatively high cost of dedicated videoconferencing systems, which were clearly superior to personal computer-based programs such as Skype and Netmeeting in terms of the synchronicity of the audio and visual content and the stability of the videoconference connection. Since about 2005, however, personal-computer-based programs have made great strides in the quality and synchronicity of the audio and visual content that they

deliver, and because the programs themselves are either free or available at little cost, this led to greater accessibility of videoconferencing to the public in general and to its increased use in personal communication of all types, including counseling. Since 2002, the rate at which psychologists have been using videoconferencing to provide direct services has increased tenfold (Jacobsen & Kohout, 2010), and this, presumably, is true as well for other mental health professionals. Despite this emerging use, counselor perspectives on the use of videoconferencing to facilitate counseling have been little studied. In addition, little is known about the common or specific factors that may need to be present or addressed in the counseling process in order for counseling done by videoconferencing to be effective.

The current study examined some of these issues being faced by the professional counseling community. If professional counselors and mental health providers are increasingly providing direct services by videoconference, either as a supplement to face-to-face interaction or as the sole means of provision, then it is highly important that questions regarding the effectiveness and appropriateness of counseling by videoconference be answered. After all, it is the care of clients and their welfare that is most at stake. Also at stake, however, are underserved counseling populations who may not be able or desire to engage in face-to-face counseling.

This study presented evidence that counselors, as expert observers, did not perceive counseling by videoconference to be equivalent to counseling done face-to-face on all of the factors studied. Specifically, evidence was presented that, in particular, the characteristic counselor qualities portrayed by the counselor related to attractiveness–friendliness, likability, warmth, and sociability–were found to be present at a lower, but still satisfactory level, in the videoconference environment. To a lesser extent, this was also found to be true of session smoothness, counselor trustworthiness, and the closeness of the bond in the working alliance.

Overall, there may be a risk of not establishing as close a connection in distance situations as in face-to-face ones. Knowing that these important behaviors related to common factors may become diminished or not as easily conveyed in a videoconference environment has implications for counselors, particularly those who may facilitate sessions by videoconference, and for supervisors, consultants, and counselor educators who help train them to use this medium. Armed with this knowledge, there are certain behaviors that counselors may wish to clearly demonstrate in a VC session in order to address these potential deficiencies. In other situations, counselors may choose not to use videoconferencing in a particular counseling situation because of the fragility of the counseling relationship, or because of information obtained through previous assessment—the potential for the client being in crisis, the need for the provision of physical safety, and challenges to ordinary communication, to name a few. Counselors and clients may want to test their use of the VC environment prior to using it fully. Counselors who wish to provide direct services by VC should consider special training, such as the DCC, to gain the needed competencies to adequately deal with situations that are likely to occur in the distance environment. Counselor educators should explore ways to incorporate the use of videoconferencing in practicum and other practical courses, and in supervision.

Distance counseling by videoconference is likely to continue to grow and evolve as technology changes and improves, and as society adjusts to it. Soon, most cell phones and tablet computers will have videoconferencing capabilities, and telepresence units with monitors the size of entire walls will be a feature of many clinics, offices, educational facilities, and even homes. In the not-too-distant future, three-dimensional technology will be introduced and holographic videoconference projections will become a reality. A life-size, interacting projection of the client in a remote location will appear to sit right next to the client or counselor, just as in a

face-to-face situation. Just as with the introduction of the telephone, society will adapt to videoconferencing, and there will be a point at which it will seem routine. For counseling communication, however, technological advances will not completely change the ways we construct this form of distance communication. As with the use of the telephone, the counselor and client will be aware that a distance situation is involved, and this context, to some extent, will shape the nature of their interactions. Counselors will need to learn new ways to create the presence of process common factors that are essential to making counseling work. Clients will need to adjust to the videoconferencing environment as well. The therapeutic relationship is a two-way street, and clients should be encouraged and coached to make efforts that will enhance communication in the distance environment. Counselors and clients may both learn ways to positively modify their behaviors within a session through the use of the PIP capability and by each participant's giving explicit feedback on how the other is being perceived.

If counselors and clients can learn creative and effective ways to use videoconferencing, then the counseling profession can fully harness the power that this tool can provide. Counseling services can be extended to many underserved populations, especially those who are often isolated. In addition, the counseling field can expand the delivery of services that focus on life's normal developmental challenges, the development of client resilience and wellness, education and career development, and multiculturalism.

References

- ACES Executive Council. (2007). *Technical competencies for counselor education: Recommended guidelines for program development* Association for Counselor Education and Supervision.
- Alexander, L. B., & Luborsky, L. (1986). The Penn helping alliance scales. In W. M. Pinsof (Ed.), *The psychotherapeutic process: A research handbook*. (pp. 325-366). New York, NY US: Guilford Press.
- American Counseling Association. (2005). In ACA Governing Council (Ed.), *ACA code of ethics*.
- American Psychological Association. (March, 2010). Telepsychology is on the rise. *Monitor on Psychology*, 41(3), March 11, 2011. Retrieved from <http://www.apa.org/monitor/2010/03/telepsychology.aspx>
- Anderson, T. (1987). The reflecting team: Dialogue and meta-dialogue in clinical work. *Family Process*, 26, 415-428.
- Barak, A., & LaCrosse, M. B. (1975). Multidimensional perception of counselor behavior. *Journal of Counseling Psychology*, 22(6), 471-476. doi:10.1037/0022-0167.22.6.471
- Battle, C. C., Imber, S. D., Hoehn-Saric, R., Stone, A. R., Nash, E. R., Frank, J. D. (1966). Target complaints as criteria for improvement. *American Journal of Psychotherapy*, 20, 184-192.

- Bell Laboratories (1969). A collection of several articles on the AT&T picturephone. *Bell Laboratories Record*, 47, 134-153 & 160-187.
- Bennett, S., Maton, K., & Kervin, L. (2008). The 'digital natives' debate: A critical review of the evidence. *British Journal of Educational Technology*, 39(5), 775-786.
doi:10.1111/j.1467-8535.2007.00793.x
- Berger, P. L., & Luckmann, T. (1966). *The social construction of reality: A treatise in the sociology of knowledge* (1st ed.). Garden City, N.Y.: Doubleday.
- Bergin, A. E., & Garfield, S. L. (Eds.). (1994). *Handbook of psychotherapy and behavior change* (4th ed.). Oxford England: John Wiley & Sons.
- Betz, N. (1987). Use of discriminant analysis in counseling psychology research. *Journal of Counseling Psychology*, 34(4), 393.
- Bordin, E. S. (1965). Simplification as a strategy for research in psychotherapy. *Journal of Consulting Psychology*, 29(6), 493-503. doi:10.1037/h0022760
- Bostick, S. L. (1992). *The development and validation of the library anxiety scale*. (Ph.D., Wayne State University, United States -- Michigan). *Dissertations & Theses: Full Text*. (AAT 9310624)
- Bouchard, S., Paquin, B., Payeur, R., Allard, M., Rivard, V., Fournier, T., . . . Lapierre, J. (2004). Delivering cognitive-behavior therapy for panic disorder with agoraphobia in videoconference. *Telemedicine Journal and e-Health*, 10(1), 13-24.
doi:10.1089/153056204773644535

Bouchard, S., Payeur, R., Rivard, V., Allard, M., Paquin, B., Renaud, P., & Goyer, L. (2000).

Cognitive behavior therapy for panic disorder with agoraphobia in videoconference:

Preliminary results. *CyberPsychology & Behavior*, 3(6), 999-1007.

doi:10.1089/109493100452264

Bray, J. H., Williamson, D. S., & Malone, P. E. (1984). Personal authority in the family system:

Development of a questionnaire to measure personal authority in intergenerational family processes. *Journal of Marital and Family Therapy*, 10(2), 167-178. doi:10.1111/j.1752-

0606.1984.tb00007.x

Busseri, M. A., & Tyler, J. D. (2003). Interchangeability of the working alliance inventory and working alliance inventory, short form. *Psychological Assessment*, 15(2), 193-197.

doi:10.1037/1040-3590.15.2.193

Carey, J. C., Wade, S. L., & Wolfe, C. R. (2008). Lessons learned: The effect of prior technology use on web-based interventions. *CyberPsychology & Behavior*, 11(2), 188-195.

doi:10.1089/cpb.2007.0025

Carkhuff, R. (1969). *Helping and human relations: A primer for lay and professional helpers: I. selection and training*. New York: Rinehart and Winston.

Christensen, R., & Knezek, G. (2000). Internal consistency reliability for the technology in

education competency survey. *Preparing Tomorrow's Teachers Evaluator's Workshop*,

American Educational Research Association Annual Meeting, New Orleans, LA. (April 25)

Cisco Systems. *Cisco telepresence...just for the fun!* Retrieved October 8, 2008, from

http://www.youtube.com/watch?v=R0_WhSdsgBo&feature=related

Clement, P., Brooks, Dean, & Galaz. (2001). A neuropsychology telemedicine clinic. *Military Medicine, 166*(5), 382.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, N.J.: L. Erlbaum Associates.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences (3rd ed.)*. Mahwah, NJ US: Lawrence Erlbaum Associates Publishers.

Constantine, M. G. (2002). The intersection of race, ethnicity, gender, and social class in counseling: Examining selves in cultural contexts. *Journal of Multicultural Counseling and Development, 30*(4), 210-215.

Corrigan, J. D., & Schmidt, L. D. (1983). Development and validation of revisions in the counselor rating form. *Journal of Counseling Psychology, 30*(1), 64-75. doi:10.1037/0022-0167.30.1.64

Cummings, A. L., Slemon, A. G., & Hallberg, E. T. (1993). Session evaluation and recall of important events as a function of counselor experience. *Journal of Counseling Psychology, 40*(2), 156-165. doi:10.1037/0022-0167.40.2.156

- Dalgin, R. S., & Bellini, J. (2008). Invisible disability disclosure in an employment interview: Impact on employers' hiring decisions and views of employability. *Rehabilitation Counseling Bulletin*, 52(1), 6-15. doi:10.1177/0034355207311311
- Davis, F. D. (1993). User acceptance of information technology: System characteristics, user perceptions and behavioral impacts. *International Journal of Man-Machine Studies*, 38(3), 475-487. doi:DOI: 10.1006/imms.1993.1022
- Day, S. X., & Schneider, P. L. (2002). Psychotherapy using distance technology: A comparison of face-to-face, video, and audio treatment. *Journal of Counseling Psychology*, 49(4), 499-503. doi:10.1037/0022-0167.49.4.499
- De las Cuevas, Arredondo, M. T., Cabrera, M. F., Sulzenbacher, H., & Meise, U. (2006). Randomized clinical trial of telepsychiatry through videoconference versus face-to-face conventional psychiatric treatment. *Telemedicine and e-Health*, 12(3), 341-350. doi:10.1089/tmj.2006.12.341
- Del Vento, A., Bavelas, J., Healing, S., MacLean, G., & Kirk, P. (2009). An experimental investigation of the dilemma of delivering bad news. *Patient Education and Counseling*, 77(3), 443-449. doi:10.1016/j.pec.2009.09.014
- Demand for distance counseling credential increases. (2006). *The NCC*, 22(3), 5.
- Derogatis, L. R., & Fitzpatrick, M. (2004). The SCL-90-R, the brief symptom inventory (BSI), and the BSI-18. In M. E. Maruish, & M. E. Maruish (Eds.), *The use of psychological testing*

- for treatment planning and outcomes assessment: Volume 3: Instruments for adults (3rd ed).* (pp. 1-41). Mahwah, NJ US: Lawrence Erlbaum Associates Publishers.
- Dodgson, C. L., & Tenniel, J. (1941). *Alice's adventures in wonderland*. New York: Book League of America.
- Dongier, M., Tempier, R., Lalinec-Michaud, M., & Meunier, D. (1986). Telepsychiatry: Psychiatric consultation through two-way television: A controlled study. *The Canadian Journal of Psychiatry / La Revue Canadienne De Psychiatrie*, *31*(1), 32-34.
- Dykeman, C., & LaFleur, N. K. (1996). Counselors' adjective correlates of working alliance. *Psychological Reports*, *78*(2), 563-570.
- Elliott, R., & Wexler, M. M. (1994). Measuring the impact of sessions in process—Experiential therapy of depression: The session impacts scale. *Journal of Counseling Psychology*, *41*(2), 166-174. doi:10.1037/0022-0167.41.2.166
- Epperson, D. L., & Pecnik, J. A. (1985). Counselor rating Form—Short version: Further validation and comparison to the long form. *Journal of Counseling Psychology*, *32*(1), 143-146. doi:10.1037/0022-0167.32.1.143
- Faul, F., Erdfelder, E., Lang, A., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*(2), 175-191.
- Firestone, S., Ramalingam, T., & Fry, S. (2007). *Voice and video conferencing fundamentals*. Indianapolis, IN: Cisco Press.

- Fleschner, S. (2008). Counseling across generations: Bridging the baby boomer, generations X, and generations Y gap. In G. R. Walz, J. C. Bleuer & R. K. Yep (Eds.), *Compelling counseling interventions: Celebrating VISTAS' fifth anniversary* (pp. 139-148). Ann arbor, MI: Counseling Outfitters.
- Friedlander, M. L., Bernardi, S., & Lee, H. (2010). Better versus worse family therapy sessions as reflected in clients' alliance-related behavior. *Journal of Counseling Psychology, 57*(2), 198-204. doi:10.1037/a0019088
- Friedlander, M. L., Escudero, V., Horvath, A. O., Heatherington, L., Cabero, A., & Martens, M. P. (2006). System for observing family therapy alliances: A tool for research and practice. *Journal of Counseling Psychology, 53*(2), 214-225. doi:10.1037/0022-0167.53.2.214
- Garfield, S. L. (1995). *Psychotherapy: An eclectic-integrative approach (2nd ed.)*. Oxford England: John Wiley & Sons.
- George, D., & Mallery, P. (2006). *SPSS for windows step by step : A simple guide and reference, 10.0 update*. Boston: Allyn and Bacon.
- Glass, G. V., & Stanley, J. C. (1970). *Statistical methods in education and psychology*. Oxford England: Prentice-Hall.
- Glass, M. J. (2009). *Experiential learning styles and instructional delivery in doctorate programs*. ProQuest Information & Learning). *Dissertation Abstracts International Section A: Humanities and Social Sciences, 69*(10-). (2009-99070-504)

- Glueckauf, R. L., Fritz, S. P., Ecklund-Johnson, E., Liss, H. J., Dages, P., & Carney, P. (2002). Videoconferencing-based family counseling for rural teenagers with epilepsy: Phase 1 findings. *Rehabilitation Psychology, 47*(1), 49-72. doi:10.1037/0090-5550.47.1.49
- Gough, H. G. (1960). The adjective check list as a personality assessment research technique. *Psychological Reports, 6*, 107-122. doi:10.2466/PR0.6.1.107-122
- Grant, J. S., Elliott, T. R., Weaver, M., Bartolucci, A. A., & Giger, J. N. (2002). Telephone intervention with family caregivers of stroke survivors after rehabilitation. *Stroke, 33*(8), 2060-2065. doi:10.1161/01.STR.0000020711.38824.E3
- Grencavage, L. M., & Norcross, J. C. (1990). Where are the commonalities among the therapeutic common factors? *Professional Psychology: Research and Practice, 21*(5), 372-378. doi:10.1037/0735-7028.21.5.372
- Hanson, W. E., Curry, K. T., & Bandalos, D. L. (2002). Reliability generalization of working alliance inventory scale scores. *Educational and Psychological Measurement, 62*(4), 659-673. doi:10.1177/0013164402062004008
- Harrison, S. (2009). *Media Space: 20+ years of mediated life*. Springer
- Heppner, P. P., Kivlighan, D. M., & Wampold, B. E. (1992). *Research design in counseling*. Pacific Grove, Calif.: Brooks/Cole Pub. Co.
- Hill, C. E. (2004). *Helping skills :Facilitating exploration, insight, and action* (2nd ed.). Washington, DC: American Psychological Association.

- Hill, J. V., Allman, L. R., & Ditzler, T. F. (2001). Utility of real-time video teleconferencing in conducting family mental health sessions: Two case reports. *Telemedicine Journal and e-Health*, 7(1), 55-59. doi:10.1089/153056201300093930
- Horvath, A. O., & Greenberg, L. S. (1989). Development and validation of the working alliance inventory. *Journal of Counseling Psychology*, 36(2), 223-233. doi:10.1037/0022-0167.36.2.223
- Hufford, B. J., Glueckauf, R. L., & Webb, P. M. (1999). Home-based, interactive videoconferencing for adolescents with epilepsy and their families. *Rehabilitation Psychology*, 44(2), 176-193. doi:10.1037/0090-5550.44.2.176
- Imel, Z. E., & Wampold, B. E. (2008). The importance of treatment and the science of common factors in psychotherapy. In R. W. Lent (Ed.), *Handbook of counseling psychology (4th ed.)*. (pp. 249-266). Hoboken, NJ US: John Wiley & Sons Inc.
- Ivey, A. E. (Winter 1969). The intentional individual: A process-outcome view of behavioral psychology. *The Counseling Psychologist*, 1(4), 56-60. doi:10.1177/001100006900100407
- Ivey, A. E., Ivey, M. B., & Simek-Downing, L. (1993). *Counseling and psychotherapy :A multicultural perspective* (3rd ed.). Boston: Allyn and Bacon.
- Ivey, A. E., Normington, C. J., Miller, C. D., Morrill, W. H., & Haase, R. F. (1968). Microcounseling and attending behavior: An approach to prepracticum counselor training. *Journal of Counseling Psychology*, 15(5), 1-12. doi:10.1037/h0026129

- Jacobsen, T., & Kohout, J. (April, 2010). Telepsychology, medication, and collaboration module. *APA Center for Workforce Studies*, , March 7, 2011. Retrieved from <http://www.apa.org/workforce/publications/08-hsp/telepsychology/index.aspx>
- Jourard, S. M. (1971). *Self-disclosure: An experimental analysis of the transparent self*. Oxford England: John Wiley.
- Kanz, J. E. (2001). Clinical-supervision.com: Issues in the provision of online supervision. *Professional Psychology: Research and Practice*, 32(4), 415-420. doi:10.1037/0735-7028.32.4.415
- Kaplan, D. (2006, New mandates for selecting interventions. *Counseling Today*, 41(August), 11.
- Kazdin, A. E. (2003). *Research design in clinical psychology*. Boston: Allyn and Bacon.
- Kerlinger, F. N., & Pedhazur, E. J. (1973). *Multiple regression in behavioral research*. New York: Holt.
- Khasanshina, E. V., Wolfe, W. L., Emerson, E. N., & Stachura, M. E. (2008). Counseling center-based tele-mental health for students at a rural university. *Telemedicine and e-Health*, 14(1), 35-41.
- King, V. L., Stoller, K. B., Kidorf, M., Kindbom, K., Hursh, S., Brady, T., & Brooner, R. K. (2009). Assessing the effectiveness of an internet-based videoconferencing platform for delivering intensified substance abuse counseling. *Journal of Substance Abuse Treatment*, 36(3), 331-338. doi:10.1016/j.jsat.2008.06.011

- Kirk, J. J. (2000). Web-assisted career counseling. *Journal of Employment Counseling, 37*(3), 146-159.
- Kitzrow, M. A. (2009). The mental health needs of today's college students: Challenges and recommendations. *NASPA Journal, 46*(4), 646-660.
- Cluever, R., Lam, T. C. M., Hoffman, E. R., & Green, K. E. (1994). The computer attitude scale: Assessing changes in teachers' attitudes toward computers. *Journal of Educational Computing Research, 11*(3), 251-261.
- Knouse, S. B. (2001). Virtual mentors: Mentoring on the internet. *Journal of Employment Counseling, 38*(4), 162-169.
- Kokotovic, A. M., & Tracey, T. J. (1987). Premature termination at a university counseling center. *Journal of Counseling Psychology, 34*(1), 80-82. doi:10.1037/0022-0167.34.1.80
- LaCrosse, M. B. (1980). Perceived counselor social influence and counseling outcomes: Validity of the counselor rating form. *Journal of Counseling Psychology, 27*(4), 320-327. doi:10.1037/0022-0167.27.4.320
- LaCrosse, M. B., & Barak, A. (1976). Differential perception of counselor behavior. *Journal of Counseling Psychology, 23*(2), 170-172. doi:10.1037/0022-0167.23.2.170
- Lakey, B., Cohen, J. L., & Neely, L. C. (2008). Perceived support and relational effects in psychotherapy process constructs. *Journal of Counseling Psychology, 55*(2), 209-220. doi:10.1037/0022-0167.55.2.209

- Lambert, M. J., & Bergin, A. (1994). The effectiveness of psychotherapy. In A. E. Bergin, & S. L. Garfield (Eds.), *Handbook of psychotherapy and behavior change* (4th ed., pp. 143-189). New York, NY: Wiley & Sons.
- Lambert, M. J., & Barley, D. E. (2002). Research summary on the therapeutic relationship and psychotherapy outcome. In J. C. Norcross (Ed.), *Psychotherapy relationships that work: Therapist contributions and responsiveness to patients*. (pp. 17-32). New York, NY US: Oxford University Press.
- Lambert, M. J., & Ogles, B. M. (2004). The efficacy and effectiveness of psychotherapy. In M. J. Lambert (Ed.), *Bergin and Garfield's handbook of psychotherapy and behavior change* (5th ed., pp. 139-193). Oxford: Wiley.
- Larsen, D. L., Attkisson, C. C., Hargreaves, W. A., & Nguyen, T. D. (1979). Assessment of client/patient satisfaction: Development of a general scale. *Evaluation and Program Planning*, 2(3), 197-207. doi:DOI: 10.1016/0149-7189(79)90094-6
- Lawson, D. M., Gaushell, W. H., McCune, S. L., & McCune, E. D. (1995). Perception of counselor behavior and current intergenerational family relationships. *Counselor Education and Supervision*, 34(4), 356-368.
- Leierer, S. J., Strohmer, D. C., Leclere, W. A., & Cornwell, B. J. (1996). The effect of counselor disability, attending behavior, and client problem on counseling. *Rehabilitation Counseling Bulletin*, 40(2), 82-95.

- Li, L. C., Kim, B. S. K., & O'Brien, K. M. (2007). An analogue study of the effects of asian cultural values and counselor multicultural competence on counseling process. *Psychotherapy: Theory, Research, Practice, Training, 44*(1), 90-95. doi:10.1037/0033-3204.44.1.90
- Liss, H. J., Glueckauf, R. L., & Ecklund-Johnson, E. (2002). Research on telehealth and chronic medical conditions: Critical review, key issues, and future directions. *Rehabilitation Psychology, 47*(1), 8-30. doi:10.1037/0090-5550.47.1.8
- Loyd, B. H., & Gressard, C. (1984). *The effects of sex, age, and computer experience on computer attitudes*. (Research; Speeches/Meeting Papers No. ED246878).ERIC.
- Loyd, B. H., & Gressard, C. (1984). Reliability and factorial validity of computer attitude scales. *Educational and Psychological Measurement, 44*(2), 501-505.
doi:10.1177/0013164484442033
- Loyd, B. H., & Loyd, D. E. (1985). The reliability and validity of an instrument for the assessment of computer attitudes. *Educational and Psychological Measurement, 45*(4), 903-908. doi:10.1177/0013164485454021
- Magaletta, P. R., Fagan, T. J., & Peyrot, M. F. (2000). Telehealth in the federal bureau of prisons: Inmates' perceptions. *Professional Psychology: Research and Practice, 31*(5), 497-502. doi:10.1037/0735-7028.31.5.497

- Mallen, M. J., Vogel, D. L., Rochlen, A. B., & Day, S. X. (2005). Online counseling: Reviewing the literature from a counseling psychology framework. *The Counseling Psychologist*, 33(6), 819-871. doi:10.1177/0011000005278624
- Mallinckrodt, B. (1993). Session impact, working alliance, and treatment outcome in brief counseling. *Journal of Counseling Psychology*, 40(1), 25.
- Matsuura, S., Hosaka, T., Yukiya, T., Ogushi, Y., Okada, Y., Haruki, Y., & Nakamura, M. (2000). Application of telepsychiatry: A preliminary study. *Psychiatry and Clinical Neurosciences*, 54(1), 55-58. doi:10.1046/j.1440-1819.2000.00637.x
- Metropolitan Opera. (2011). *High definition broadcasts*. Retrieved July 30, 2011, from http://www.metoperafamily.org/metopera/broadcast/hd_events_next.aspx
- Mizrachi, D., & Shoham, S. (2004). Computer attitudes and library anxiety among undergraduates: A study of Israeli B.Ed students. *The International Information & Library Review*, 36(1), 29-38. doi:DOI: 10.1016/j.iilr.2003.09.001
- Nash, J. B., & Moroz, P. A. (1997). An examination of the factor structures of the computer attitude scale. *Journal of Educational Computing Research*, 17(4), 341-356.
- National Board of Certified Counselors, Inc. (2009). *The practice of internet counseling*.
- Negash, S., Whitman, M. E., (eds.) (2008). *Handbook of distance learning for real-time and asynchronous information technology education*. Idea Group Inc.

- Nelson, E., Barnard, M., & Cain, S. (2006). Feasibility of telemedicine intervention for childhood depression. *Counselling & Psychotherapy Research, 6*(3), 191-195.
doi:10.1080/14733140600862303
- New York Times (1938). Talks on 'See-Phone': Television applied to German telephones enables speakers to see each other. September 18, 1938.
- Norcross, J. (1986). Special section: Training integrative/eclectic psychotherapists. *International Journal of Eclectic Psychotherapy, 5*(1), 71.
- Norcross, J. C., Hedges, M., & Prochaska, J. O. (2002). The face of 2010: A delphi poll on the future of psychotherapy. *Professional Psychology: Research and Practice, 33*(3), 316-322.
doi:10.1037/0735-7028.33.3.316
- Prensky, M. (2001). Digital natives, digital immigrants, part 1. *On the Horizon, 9*(5), 1-6.
doi:10.1108/10748120110424816
- Prensky, M. (2001). Digital natives, digital immigrants, part II: Do they really think differently? *On the Horizon, 9*(6)
- Pressly, P. K., & Heesacker, M. (2001). The physical environment and counseling: A review of theory and research. *Journal of Counseling & Development, 79*(2), 148-160.
- Rees, C. S., & Stone, S. (2005). Therapeutic alliance in face-to-face versus videoconferenced psychotherapy. *Professional Psychology: Research and Practice, 36*(6), 649-653.
doi:10.1037/0735-7028.36.6.649

- Reynolds, S., Stiles, W. B., Barkham, M., Shapiro, D. A., Hardy, G. E., & Rees, A. (1996). Acceleration of changes in session impact during contrasting time-limited psychotherapies. *Journal of Consulting and Clinical Psychology, 64*(3), 577-586. doi:10.1037/0022-006X.64.3.577
- Rochlen, A. B., Beretvas, S. N., & Zack, J. S. (2004). The online and face-to-face counseling attitudes scales: A validation study. *Measurement and Evaluation in Counseling and Development, 37*(2), 95-111.
- Rochlen, A. B., Land, L. N., & Wong, Y. J. (2004). Male restrictive emotionality and evaluations of online versus face-to-face counseling. *Psychology of Men & Masculinity, 5*(2), 190-200. doi:10.1037/1524-9220.5.2.190
- Rochlen, A. B., Zack, J. S., & Speyer, C. (2004). Online therapy: Review of relevant definitions, debates, and current empirical support. *Journal of Clinical Psychology, 60*(3), 269-283. doi:10.1002/jclp.10263
- Rogers, C. R. (1957). The necessary and sufficient conditions of therapeutic personality change. *Journal of Consulting Psychology, 21*(2), 95-103. doi:10.1037/h0045357
- Rosenzweig, S. (1936). Some implicit common factors in diverse methods of psychotherapy. *American Journal of Orthopsychiatry, 6*, 412-415.
- Schopp, L., Johnstone, B., & Merrell, D. (2000). Telehealth and neuropsychological assessment: New opportunities for psychologists. *Professional Psychology: Research and Practice, 31*(2), 179-183. doi:10.1037/0735-7028.31.2.179

- Shallcross, L. (2011). From generation to generation. *Counseling Today Online*, (October 27, 2009), March 14, 2011.
- Sherry, A. (2006). Discriminant analysis in counseling psychology research. *The Counseling Psychologist*, 34(5), 661-683. doi:10.1177/0011000006287103
- Smith, M. L., Glass, G. V., & Miller, T. I. (1980). *The benefits of psychotherapy*. Baltimore, MD: Johns Hopkins University Press.
- Sollod, R. N. (1981). Goodwin Watson's 1940 conference. *American Psychologist*, 36(12), 1546-1547. doi:10.1037/0003-066X.36.12.1546
- Sørliie, T., Gammon, D., Bergvik, S., & Sexton, H. (1999). Psychotherapy supervision face-to-face and by videoconferencing: A comparative study. *British Journal of Psychotherapy*, 15(4), 452-462. doi:10.1111/j.1752-0118.1999.tb00475.x
- Stevens, A., Doidge, N., Goldbloom, D., Voore, P., & Farewell, J. (1999). Pilot study of televideo psychiatric assessments in an underserved community. *The American Journal of Psychiatry*, 156(5), 783-785.
- Stiles, W. B., Gordon, L. E., & Lani, J. A. (2002). Session evaluation and the session evaluation questionnaire. In G. S. Tryon (Ed.), *Counseling based on process research: Applying what we know* (pp. 325-343). Boston, MA: Allyn & Bacon.
- Stiles, W. B. (1980). Measurement of the impact of psychotherapy sessions. *Journal of Consulting and Clinical Psychology*, 48(2), 176-185. doi:10.1037/0022-006X.48.2.176

- Stiles, W. B., Reynolds, S., Hardy, G. E., Rees, A., Barkham, M., & Shapiro, D. A. (1994). Evaluation and description of psychotherapy sessions by clients using the session evaluation questionnaire and the session impacts scale. *Journal of Counseling Psychology, 41*(2), 175-185. doi:10.1037/0022-0167.41.2.175
- Stiles, W. B., Shapiro, D. A., & Firth-Cozens, J. (1988). Do sessions of different treatments have different impacts? *Journal of Counseling Psychology, 35*(4), 391-396. doi:10.1037/0022-0167.35.4.391
- Stiles, W. B., & Snow, J. S. (1984). Dimensions of psychotherapy session impact across sessions and across clients. *British Journal of Clinical Psychology, 23*(1), 59-63.
- Strupp, H. H., Hartley, D., Blackwood, G. L., Jr. (1974). Vanderbilt psychotherapy process scale and rater's manual. *Unpublished Manuscript*.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics (5th ed.)*. Boston, MA: Allyn & Bacon/Pearson Education.
- Tashiro, T., & Frazier, P. (2007). The causal effects of emotion on couples' cognition and behavior. *Journal of Counseling Psychology, 54*(4), 409-422. doi:10.1037/0022-0167.54.4.409
- Tiedemann, D. A. (2004). Interactive videoconferencing for instruction. In M. Mukhopadhyay (Ed.), *Educational technology: Knowledge assessment*. New Delhi: Shipra.
- Tracey, T. J., & Dundon, M. (1988). Role anticipations and preferences over the course of counseling. *Journal of Counseling Psychology, 35*(1), 3-14. doi:10.1037/0022-0167.35.1.3

- Tracey, T. J., Glidden, C. E., & Kokotovic, A. M. (1988). Factor structure of the counselor rating Form—Short. *Journal of Counseling Psychology, 35*(3), 330-335. doi:10.1037/0022-0167.35.3.330
- Tracey, T. J., & Kokotovic, A. M. (1989). Factor structure of the working alliance inventory. *Psychological Assessment: A Journal of Consulting and Clinical Psychology, 1*(3), 207-210. doi:10.1037/1040-3590.1.3.207
- Tracey, T. J. G., Lichtenberg, J. W., Goodyear, R. K., Claiborn, C. D., & Wampold, B. E. (2003). Concept mapping of therapeutic common factors. *Psychotherapy Research, 13*(4), 401-413. doi:10.1093/ptr/kpg041
- Tryon, G. S., & Kane, A. S. (1995). Client involvement, working alliance, and type of therapy termination. *Psychotherapy Research, 5*(3), 189-198.
- Wade, S. L., Wolfe, C. R., Brown, T. M., & Pestian, J. P. (2005). Can a web-based family problem-solving intervention work for children with traumatic brain injury? *Rehabilitation Psychology, 50*(4), 337-345. doi:10.1037/0090-5550.50.4.337
- Walter, M. I., & Handelsman, M. M. (1996). Informed consent for mental health counseling: Effects of information specificity on clients' ratings of counselors. *Journal of Mental Health Counseling, 18*(3), 253-262.
- Wampold, B. E. (2000). Outcomes of individual counseling and psychotherapy: Empirical evidence addressing two fundamental questions. In S. D. Brown, R. W. Lent, S. D. Brown

& R. W. Lent (Eds.), *Handbook of counseling psychology (3rd ed.)*. (pp. 711-739).
Hoboken, NJ US: John Wiley & Sons Inc.

Wampold, B. E. (2001). *The great psychotherapy debate models, methods, and findings*.

Retrieved October 9, 2011, from

[http://128.230.234.29:9003/syracuse?sid=google&aunit=BE&auplast=Wampold&title=The
%20great%20psychotherapy%20debate%3A%20Models%2C%20methods%2C%20and%2
0findings&genre=book&isbn=0805832025&date=2001](http://128.230.234.29:9003/syracuse?sid=google&aunit=BE&auplast=Wampold&title=The%20great%20psychotherapy%20debate%3A%20Models%2C%20methods%2C%20and%20findings&genre=book&isbn=0805832025&date=2001)

Wampold, B. E. (2007). Psychotherapy: The humanistic (and effective) treatment. *American Psychologist*, 62(8), 857-873. doi:10.1037/0003-066X.62.8.857

Wampold, B. E. (2010). The research evidence for common factors models: A historically situated perspective. In M. A. Hubble (Ed.), *The heart and soul of change: Delivering what works in therapy (2nd ed.)*. (pp. 49-81). Washington, DC US: American Psychological Association. doi:10.1037/12075-002

Watson, G. (1940). New trends in clinical procedures and psychotherapy. *Journal of Consulting Psychology*, 4(3), 81.

Wood, R. H. (1996). *Assessing counselor attitudes toward computers in the southeast*. ProQuest Information & Learning). *Dissertation Abstracts International Section A: Humanities and Social Sciences*, 57(3). (1996-95018-119)

Zhang, N., & McCoy, V. A. (2008). Discussion of racial difference in counseling: A counselor's perspective. *Journal of College Student Psychotherapy*, 23(1), 3-15.

doi:10.1080/87568220802367479

Research Focusing on Counseling Facilitated by Videoconference

Author & Date	Technology	Sample	Type of Study; Data; Measures (Constructs)	Main Counseling-Related Research Findings	Counseling Outcome or Process	Limitations/ Comments
Bouchard et al. (2000)	VC: used 6 phone lines; remote site: Tandberg 2000 VC; local: Tandberg Delta 7system; 384 Kbps	8 adults with panic disorder with agoraphobia. Gender = 3 M, 5 F. Mean Age = 30.0	Quasi-experiment with Pre-Post design; target symptoms – frequency of panic attacks, panic apprehension, severity, and global functioning – trait anxiety, general improvement; W AI; client self-report	Non-parametric analyses indicated significant improvements: panic attack frequency, panic apprehension, P&A global score, self-efficacy, trait anxiety and DISS; scores on the WAI were reported as very high.	Process and Outcome	No comparison group (to FtF)
Bouchard et al. (2004)	VC: used 6 phone lines; remote site: Tandberg 2000 VC; local: Tandberg Delta 7 system; 384 Kbps; therapists used PIP technologies	21 adults with panic disorder with agoraphobia; 11 at remote site (VC), 10 at local site (FtF); client self-reports	Quasi-experimental with Pre-Post design. Panic frequency and apprehension, body sensation, mobility, self-efficacy, state and trait anxiety, BDI, DISS; WAI – VC condition only; client self-report	Analyses of effect size indicate that VC was as effective as FtF on all measures over the course of treatment; report a significant reduction in all measures of symptoms; of those in the VC group, 81% were panic free immediately post-treatment and 91% at six-month follow-up.	Process and Outcome	Nonrandomized assignment. Clients recruited from two different regions.
Carey, Wade & Wolfe (2008)	VC: personal computers, webcams, Internet service	20 primary caregivers (PCG) of children with TBI: technology using parents (n = 14) and nontechnology using parents (n=6) self-reports	Quasi-experiment with Pre-Post design; treatment satisfaction, ARM, CES-D, AI, website and technical comfort (CECR)	Technology using PCG's reported significantly improved depression and anxiety compared to nontechnology using PCG's; lack of prior use of technology and non-adherence predicted depression at follow-up	Process and Outcome	Non-equivalency of groups Small group sizes
Day & Schneider (2002)	VC; audio only	80 adult clients recruited from community; Gender = 52 F, 28 M; Mean Age = 39.55; Ethnicity = 66 EU, 8 AA, 3 A	Experiment with FtF comparison; client/therapist self-reports, observer ratings: YPPS, BSI, GAF, TC, CSS, TSS	No sign. difference among VC, audio only and FtF, $F(12,144) = .67, p > .15$; Treatment was found to be sign. Superior to no treatment, $F(12, 265) = 1.82, p = .01$	Process and Outcome	Small group size
De las Cuevas et al. (2006)	VC: Polycom Viewstation 512; enhanced video at 30 Fps at 384 to 768 Kbps and full duplex digital audio with noise suppression and echo cancellation.	130 psychiatric outpatients with a range of ICD-10 diagnoses. Gender = 47 M, 93 F	Experiment with FtF comparison group; outpatient self-report, therapist report; SCL-90R, GSI, PSDI, PSTI, CGI: Global Improvement, Efficacy	Significant improvements reported for both groups on SCL-90R and CGI indexes at post-treatment, with no significant differences between the groups	Outcome	

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Dongier et al. (1986)	Closed-circuit TV between hospital floors	50 inpatients in experimental compared with 35 matched controls in FtF; Diagnoses: schizophrenic dx (27%), neurotic depression (12%), affective dis. (12%)	Quasi-experiment with FtF comparison group; patient/psychiatric consultee, consultant self-reports; satisfaction	Patients rating of satisfaction not significantly different in CCTV and FtF; psychiatric consultants rated CCTV significantly inferior on global assessment ($p < .05$) and diagnosis ($p < .01$)	Process	Non randomized assignment; consultant group size small ($N = 3$); consultee size not specified
Glueckauf et al. (2002)	VC; audio only	22 Adolescents with seizure disorders and their parents ($n = 36$). Gender = 14 M, 8 F. Ethnicity = 100% EU, Mean Age = 15.4	Quasi-experiment with FtF comparison; client self-reports, observation; FDAS, SSRS, WAI, completed assignments, missed appointment	Adolescents and parents reported high levels of working alliance across all three conditions ($M = 6.15$ on 7 point scale). However, adolescents reported sign. lower alliance in the VC condition than in both the audio-only ($p = .05$) and FtF ($p = .004$). Both adolescents and parents reported significant and equivalent reductions in severity and frequency of identified family problems, pre- to post-treatment, on all conditions	Process and Outcome	Modified random assignment Small group sizes
Hufford et al. (1999)	VC, Audio only	3 Adolescents with seizure disorders and their mothers	Repeated-measures, same-subjects, with A-B-C-B-C-A design; AVERS, AVEUS, WAI	Adolescents and their mothers reported low levels of distraction and moderately high levels of working alliance across all three conditions.	Process	$N = 6$
Hill et al. (2001)	VC	2 military service members and their family members	Case Study. Attainment of family support, re-establishment of family connection	Report that VC facilitated development of virtual interactive social presence that promoted social support and mending of family disconnections.	Process and Outcome	
Khasanshina et al. (2008)	VC	44 college students referred with more psychiatric difficulty; 495 students not referred but receiving services at college counseling center	Quasi-experiment with FtF comparison; VC group also had initial FtF intake session; measures designed for college counseling center	Students in VC group rated post-intake VC session satisfactorily but ratings were uniformly lower than the FtF group	Process	Pilot study; no random assignment; VC group was a subpopulation of the counseling center group
King et al. (2009)	Modified VC	37 patients referred for more intensive methadone maintenance treatment; group counseling	Experiment with random assignment; VC group could see group leader but not others in the group; measures designed for the clinic's treatment program	Both groups had positive, but not significant, counseling adherence, drug use and step completion. VC had uniformly higher positive ratings of satisfaction than FtF	Process and Outcome	Pilot study – sample size

Research Focusing on Counseling Facilitated by Videoconference

Author(s)	VC	Participants	Intervention	Outcome	Process and Outcome	Comparison
Magaletta et al. (2000)	VC	75 prison inmates. Gender = 100% M	Quasi-experiment; client self-report; 6-item consultation survey	Inmates reported positive ratings of how well they felt about VC (M = 2.04, on -3 to +3 scale); also, rated positively how they felt about coming back for additional VC session (M = 2.29). Ratings of treatment became more positive over time (r = .36). Most reported VC comparable to FtF (46%), with rest reporting that FtF was worse (35%) or better (19%) than VC	Process and Outcome	No comparison group
Matsuura et al. (2000)	High resolution VC; low resolution VC	9 ostensibly health nursing students; 8 psychiatric outpatients	Quasi-experiment with high res. VC, low res. BPRS; ability to conduct psych eval.; rater report	High inter-rater reliability for all three conditions.	Process	Non-randomized assignment; psych evaluators not specified.
Nelson et al. (2006)	VC; personal computer-based ISDN at 128 Kbps	28 children with depression and 28 caregivers of children. Gender of children = 20 M, 8 F	Experiment with FtF comparison group. Child/caregiver self-reports; K-SADS	Reported that the two groups did not differ significantly in terms of frequencies of responders and non-responders to treatment; 82% remission rate from depression was observed for both groups, post-treatment.	Outcome	Pilot study. Small group sizes.
Rees & Stone (2005)	VC	30 Counseling psychologists	Experiment with analogue design; participants randomly assigned to view video of VC or FTF counseling session; H/Ar	Reported that the FTF group rated working alliance significantly higher than the VC group	Process	15 participants in each group
Schopp et al. (2000)	VC; used half of capacity of T1 fiber-optic cable lines or approx. 768 Kbps; used VTel 135V units, at 30 frames per sec.; digitized sound over T1, using Dolby Decoder	98 adult outpatients with a range of cognitive disabilities. Mean age = 33.8. Ethnicity = 90 EU, 6 AA, 1 A, 1 LA. Gender = 57 M, 41 F	Experiment with FtF comparison group; client/psychologist self-reports; BSI, WAIS-R or WAIS-III, GSI, satisfaction interview	Clients reported no sign. Differences between groups for satisfaction, ease of communication, degree of relaxation in interview, or psychologist caring. Clients in VC group were more likely to report desire to repeat experience than FtF (p < .05). Psychologists in FtF group rated satisfaction higher than VC group.	Process	Some non-validated instruments. Small sample size for psychologist group. Psychologists presumably exposed to both conditions.
Sorlie et al. (1999)	VC	6 dyads of psychiatric supervisors and their trainees	Same-subjects, repeated measures design, ABAB; quality of communication, supervisory alliance, disturbing elements;	Overall, no significant differences between conditions, except that trainees scored sign. Higher on disturbing factors in VC condition	Process	Participants exposed to both conditions

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Author(s)	Year	Setting	Participants	Intervention	Measures	Findings	Limitations
Stevens et al.	(1999)	VC	40 clients recruited from the community. Mean Age = 43.8. Gender = 18 M, 22 F	Quasi-experiment with FtF comparison group. Client/psychologist self-reports; SCID-P, CPAS, ISS	supervisor/trainee self-reports	No significant differences found in clients' ratings of VC and FtF interviews on ISS or CPAS. Psychologists rated VC lower on ISS (p < .001) but not differently on CPAS	Modified random assignment. Presumably small group size for psychologists
Wade et al.	(2005)	VC: personal computers, webcams, Internet service	6 families with a child with TBI (8 parents, 5 siblings, and 6 children with TBI)	Quasi-experimental with Pre-Post design; child behavior problems, social competence, executive function skills, parent-child conflict; parent/child/sibling self-report; parent observation	Children with TBI tended to rate VC session as less helpful than family members; parents reported improvements in antisocial behavior and children with TBI reported fewer conflicts with parents over school post-treatment	No comparison group (with FtF) Small group sizes	

NOTE: Information about race was provided when available. A = Asian; AA = African American; ARM = Agnew Relationship Measure; AVEUS = Audiovisual Equipment User Survey; BDI= Beck Depression Inventory; BPRS = Brief Psychiatric Rating Scale; BSI = Brief Symptom Inventory; CCTV = closed-circuit television; CECR = Computer Equipment Comfort Rating; CES-D = Center for Epidemiologic Studies Depression Scale; CGI = Clinical Global Impressions; CHESS = Comprehensive Health Enhancement Support System; CMC= computer-mediated communication; CPAS = California Psychotherapy Alliance Scale; CRF = Counselor Rating Form; CSES-R = Collective Self-Esteem Scale-Revised; CSS = Client Satisfaction Scale; DISS = Sheehan Disability Scale; F = female; FDAS = Family and Disability Assessment System; FTF = face-to-face; GAF = Global Assessment of Functioning Scale; GSI = Global Severity Index; ISS = Interview Satisfaction Scale; K-SADS = Kiddie Schedule for Affective Disorders and Schizophrenia; La = Latina/Latino; LGBT = lesbian, gay, bisexual, and transgendered; M = male; PSDI = Positive Symptoms Distress Index; PST = Positive Symptoms Total; SCID-P = Structured Clinical Interview for the DSM-III-R-Patient Version 1.0; SCL-90 = Symptom Checklist-90; SEQ = Session Evaluation Questionnaire; SSRS = Social Skills Rating System; STAI = State-Trait Anxiety Inventory; TC = target complaints; TSS = Therapist Satisfaction Scale; VC = Videoconference; VPPS = Vanderbilt Psychotherapy Process Scale; W= White; WAI =Working Alliance Inventory; WAIS-III =Wechsler Adult Intelligence Scale-III; WAIS-R =Wechsler Adult Intelligence Scale-Revised.

How Videoconferencing and Face-to-Face Were Accomplished in Empirical Studies

Study	How Operationalized VC	How Operationalized FTF
Bouchard et al. (2000)	<p>Study was a pre-treatment vs. post-treatment comparison using VC; images were displayed on one monitor in full-screen (waist up view); participants were seated in a psychologist's office in a mental health clinic</p>	<p>Prior to treatment, patients were SCID-diagnosed in a FTF interview by one of the therapists participating in the study, but not necessarily the one that would be assigned to them for treatment</p>
Bouchard et al. (2004)	<p>All other contact between patients at the remote site and therapists was via VC or Fax (for homework assignments); images were displayed on a 20-inch television monitor in full-screen. Participants were seated alone in a psychologist's office at the remote mental health clinic; system allowed patients and therapists to see each other and to talk with excellent image quality and without significant delays; the therapists were also encouraged to use the picture-in-picture function to self-monitor</p>	<p>Prior to treatment, all patients were SCID-diagnosed in a FTF interview by one of the therapists participating in the study, but not necessarily the one that would be assigned to them for treatment; treatment was delivered only FTF at the local site;</p>
Carey et al. (2008)	<p>The therapist met once, initially, with each family in their home to establish rapport, conduct structured interview, and train participants to use computer and VC technology; all subsequent sessions included a self-guided Web session and a one-to-one VC with the therapist</p>	<p>Control group not FTF counseling but described as Internet Resource Intervention group – had computer access to home page of TBI resources and information; continued to receive psychosocial care</p>
Day and Schneider (2002)	<p>All therapists worked in all three modes: VC, FTF, and audio only. Each member sat in a separate room and viewed the other person over a closed-circuit 20 inch television monitor. For audio only, used speakerphone, each in a separate room in the clinic. In both experimental conditions, the client never saw the therapist in person and was not aware that the therapist's room was nearby.</p>	<p>The pair occupied the same room in the ordinary manner. All sessions were videotaped even when the dyad members never saw each other (audio only condition).</p>

How Videoconferencing and Face-to-Face Were Accomplished in Empirical Studies

De las Cuevas et al. (2006)	VC treatment was conducted between the University Hospital de la Candelaria in Santa Cruz de Tenerife (psychiatrist's location) and the Mental Healthcare Centre of San Sebastian de la Gomera (patient location)	FTF treatment took place at the Mental Healthcare Centre of San Sebastian de la Gomera, in the same telepsychiatry room
Dongier et al. (1986)	Two-way CCTV between floors of a hospital	Took place in 45-bed psychiatric hospital in Abitibi, Canada
Glueckauf et al. (2002)	Families with access to ISDN	Initial assessments were performed FTF in Glueckauf's Intervention Suite at the University
Hill et al. (2001)	Patient and psychiatrist at Tripler Army Medical Center (Honolulu, Hawaii) and family members at a Department of Defense VTC site on the mainland.	VC only study
Hufford et al. (1999)	Vistium unit placed in families' homes; second in Family Assessment and Intervention Lab ; 15-inch monitor	Office-based sessions; video cameras present (2)
Khasanshina et al. (2008)	Psychiatric residents at Medical College of Georgia (MCG) and their clients at Georgia Southern University's (GSU) Tele-Clinic (TC) utilized a standard PC monitor with Polycom PVX software and a webcam to teleconference over a private IP network, during 20 minute sessions.	FTF sessions were conducted at Medical College of Georgia (MCG).
King et al. (2009)	Outpatients using their own computer, participated in group therapy sessions using e-Getgoing software. During sessions, each participant could hear and see the leader in real time, but had no visual of other participants. The leader could see who was speaking by noticing a designation of the client on his screen.	Group counseling sessions were conducted on site at the Addiction Treatment Services (ATS) facility in Baltimore.
Magaletta et al.	Psychiatrist at hub site (Lexington, KY) and referring psychologist, telehealth coordinator, and inmate (all present in room) at remote site (either Lewisburg, PA or Allenwood, PA); each consultation lasted between 10 and 30 minutes; same exact room for all inmates – 10 feet by 19 feet, carpeted, though not sound-proof, and painted powder-blue	VC only study

How Videoconferencing and Face-to-Face Were Accomplished in Empirical Studies

Matsuura et al. (2000)	Interviewer and observer psychiatrist present in same room as subject, resulting in simultaneous FTF interview and observation	For condition 2, interviewing psychiatrist linked to the subject by a high-resolution VC unit from a remote site, while the observer psychiatrist was in the same room as the subject. Condition 3, same as 2 except low resolution VC
Nelson et al. (2006)	Children with depression were randomized to the intervention delivered F2F or over ITV (Interactive Televideo)	Children with depression were randomized to the intervention delivered F2F or over ITV (Interactive Televideo)
Rees and Stone (2005) (analogue)	After FTF video recorded the content was scripted and the same session was repeated and practiced before recorded in the VC format; videos were viewed at Curtin University of Technology or participant's workplace	One of the researchers (Stone) and an actor posing as a client recorded a simulated therapy session designed to imitate a real fourth session experience; videos were viewed at Curtin University of Technology or participant's workplace
Schopp et al. (2000)	Participants, accompanied by a psychometrist, went to a rural county hospital telehealth site approximately 100 miles from university hub site and interviewed by a university-based neuropsychologist	Each client was interviewed FTF at the university-based neuropsychology lab; approximately 1 hour
Sorlie et al. (1999)	The participants were sitting in front of the TV monitor (28 inch), viewing the upper part of the body of the other person.	Was arranged in a consultation room arranged for videoconferencing. Participants sat at an approximate distance of 1.5 meters, with a small table between them. Separate video cameras recorded the upper part of the body, face front of each of the participants.

How Videoconferencing and Face-to-Face Were Accomplished in Empirical Studies

Stevens et al. (1999)	Sat in front of a televideo system that displayed a visual image of the other person on a 27-inch screen; psychiatrist in Toronto, patient in Campbellford	FTF interviews took place in Campbellford
Wade et al. (2005)	Dell computer, 19-inch monitor, and web camera installed in the family's house. Families were randomly assigned to one of two platforms for VC; these differed in picture size, video and sound enhancing features, and cost; after initial visit by therapist, all sessions (through session six) were conducted by VC	After the computers and the Internet connections installed, the therapist met once with each family to conduct as structured assessment interview of the family and to establish rapport

Expert Panel Survey
November 30, 2006

For items 1 through 8, please circle the number or word that indicates your best response to the statement or question. Item 9 is on the second page.

1. Video A (shown first) accurately depicted a counseling session segment done by videoconference (VC).

DISAGREE						AGREE
1	2	3	4	5	6	7

2. Video B (shown second) accurately depicted a face-to-face (FTF) counseling session segment.

DISAGREE						AGREE
1	2	3	4	5	6	7

3. The visual information in Video A (VC) was different from that in Video B (FTF).

DISAGREE						AGREE
1	2	3	4	5	6	7

4. The audio information in Video A (VC) was different from that in Video B (FTF).

DISAGREE						AGREE
1	2	3	4	5	6	7

5. The information portrayed in Video A (VC) was distinct and different from that in Video B (FTF).

DISAGREE						AGREE
1	2	3	4	5	6	7

6. Please indicate the degree to which Video A (VC) represented a counseling segment facilitated by videoconferencing.

NOT VERY MUCH						VERY MUCH
1	2	3	4	5	6	7

7. Please indicate the degree to which Video B (FTF) represented a face-to-face counseling segment.

NOT VERY MUCH						VERY MUCH
1	2	3	4	5	6	7

8. Have you ever personally participated in a videoconference of any kind?

YES

NO

9. If you noticed differences between Video A (VC) and Video B (FTF), what were they? Below, please briefly describe any features, processes, or details that you observed.

Project Title: A Comparison of Counselors' Perceptions of a Session
Conducted by Videoconferencing Versus Face-to-Face

Study Administrator: Steve Wright

Please complete all sections. I through V

- I. Informed Consent Form
- II. Introduction to the Videos
- III. Experienced Counselor Survey
- IV. Demographic Questionnaire
- V. Debriefing Statement

(PLEASE PROCEED TO SECTION I.)

Section I: Informed Consent

Project Title: *A Comparison of Counselors' Perceptions of a Session Conducted by Videoconferencing Versus Face-to-Face*

My name is Steve Wright, and I am a doctoral student at Syracuse University and Assistant Director of the Honors Program. I am inviting you to participate in a research study. Involvement in the study is voluntary, so you may choose to participate or not. This form will explain the study to you and please feel free to ask questions about the research if you have any. I will be happy to explain anything in greater detail if you wish.

I am interested in learning more about how technology can provide greater access to counseling services for some groups. You will be asked to read a brief statement, watch two pre-recorded simulated counseling sessions, and respond to a brief demographics questionnaire and a brief survey. This will take about 20 minutes of your time. All information will be kept confidential; I will assign a number to your responses, and only my faculty advisor and I will have the key to indicate which number belongs to which participant. A copy of this signed document will be given to each participant.

The benefit of this research is that you will be helping us to understand how counselors view the use of technology in counseling. This information should help us to gain a better understanding of what is necessary to make counseling services more accessible to some groups. You may benefit from taking part in the research by observing a typical college counseling session and seeing how the counselor chooses to handle the situation. The risk to you of participating in this study is that the simulated session may remind you of other counseling sessions of which you have been a part. The risks will be minimized by viewing the debriefing form that follows on which a statement can be read that further explains the details of the study and how to obtain further resources for support. If you do not want to take part, you have the right to refuse to take part, without penalty. If you decide to take part and later no longer wish to continue, you have the right to withdraw from the study at any time, without penalty. If you have any questions, concerns, complaints about the research, contact Steve Wright at 315-443-2759, The Renée Crown University Honors Program, 306 Bowne Hall, Syracuse University, Syracuse, N.Y. 13244 or shwright@syr.edu or Professor James Bellini, 259 Huntington Hall, Syracuse University, Syracuse, N. Y. 13244 or jlbellin@syr.edu . If you have any questions about your rights as a research participant, you have questions, concerns, or complaints that you wish to address to someone other than the investigator, or if you cannot reach the investigator, contact the Syracuse University Institutional Review Board at 315-443-3013.

All of my questions have been answered, I am over the age of 18 and I wish to participate in this research study.

Signature of participant

Date

Print name of participant

Signature of investigator

Date

Print name of investigator

(PLEASE PROCEED TO SECTION II)

Section II. Introduction to the Videos

Instructions: Please read the following three paragraphs in their entirety.

The videos you are about to see show a college mental health counseling session with Dana, the client, and Kris, the counselor. Dana and Kris have been working together over the course of an academic year and this is their fifth session. The setting is a college counseling center at a major university in the northeast U.S.

In their initial session, Dana sought help for difficulties she was having with handling stress and anxiety, and ways to improve a number of her relationships, including those with her parents, roommates, and friends. She has felt that she has been somewhat preoccupied and hasn't been able to do all the activities that she has been accustomed to. Dana is a second semester senior, and plans to graduate in May of this year. She has applied to graduate school in the Fall, but also has anxiety and a number of concerns about the uncertainty of her future, her career direction, and leaving the University that she has attended for the past four years.

The videos show an excerpt starting at the beginning of their fifth session.

(PLEASE WATCH BOTH VIDEOS AT THIS POINT IN THE PROCESS AND THEN PROCEED TO SECTION III)

PLEASE WATCH VIDEO _____ FIRST!

Section III: Rate the Videos

For items 1 through 9, please circle the number or word that indicates your best response to the statement or question. Please fill in the blank where appropriate.

1. Which video – either Video A (FTF) or Video B (VC) – did you see first?

Video A (FTF)

Video B (VC)

2. Video A accurately depicted a counseling session segment done by face-to-face (FTF).

DISAGREE

1

2

3

4

5

6

AGREE

7

3. Video B accurately depicted a videoconference (VC) counseling session segment.

DISAGREE

1

2

3

4

5

6

AGREE

7

4. A. The visual information in Video A (FTF) was **different** from that in Video B (VC).

DISAGREE

1

2

3

4

5

6

AGREE

7

B. If the information was different, please indicate the ways in which it was **different**:

5. A. The audio information in Video A (FTF) was different from that in Video B (VC).

DISAGREE

1

2

3

4

5

6

AGREE

7

B. If the information was different, please indicate the ways in which it was **different**:

6. A. Overall, the information portrayed in Video A (FTF) was **different** from that in Video B (VC).

DISAGREE

1

2

3

4

5

6

AGREE

7

B. If the information was different, please indicate the ways in which it was **different**:

7. Please indicate the degree to which Video A (FTF) represented a counseling segment facilitated by face-to-face.

NOT VERY MUCH
1 2 3 4 5 6 7
VERY MUCH

8. Please indicate the degree to which Video B (VC) represented a counseling segment facilitated by videoconferencing.

NOT VERY MUCH
1 2 3 4 5 6 7
VERY MUCH

9. Please indicate the extent to which the counseling content – the dialogue and interaction between the counselor and client – was the same in Video A (FTF) as in Video B (VC).

NOT VERY MUCH
1 2 3 4 5 6 7
VERY MUCH

Section IV: Demographic Questionnaire

Instructions: Please check the appropriate box or fill in the blanks for each item, 1-11. Please make sure to complete each item.

1. **Gender**
Female: Male:
2. **Age** Number of Years: _____
3. **Ethnicity**
European American African American Asian American
Latino American Other (please specify) _____
4. **Level of Education** (may indicate more than one)
Master's Degree: Doctoral Degree:
Other (please specify): _____
5. **Program of Education** (may indicate more than one)
Counseling or Counselor Education: Psychology:
Marriage and Family Therapy: Social Work:
Other (please specify): _____
6. **Current Primary Professional Role**
Clinician:
Educator: Administrator:
Other (please describe): _____
7. **Years of Work as Counseling or Mental Health Professional**
Please enter your total number of years: _____
8. **Technology Courses**
Please enter the number of post-secondary computer and/or technology courses that you completed: _____
9. **What proportion** of your (waking) day do you spend with computers and technology?
Less than 10% 10 – 25 %
26 – 40 % 41 – 60%
61 – 75% Greater than 75%
10. Have you ever personally participated in a **counseling, supervision or consultation** session done by videoconference of any kind (Skype, iChat, Adobe Connect)?

YES NO
11. How often do you use videoconferencing to facilitate counseling, supervision or consultation sessions?

Less than once a year 1-2 times a year
5 % of your sessions 10 % of your sessions
Greater than 10 % of your sessions Greater than 20% of your sessions

Section V. Debriefing Statement

Thank you for participating in this study that is designed to better understand counselor perceptions of a counseling session that was conducted either face-to-face or by videoconferencing technology. Your responses to the demographics questionnaire, and survey regarding the videos will help us begin to determine whether videoconferencing is a viable means for conducting some forms of counseling.

There is a possibility that by witnessing the counseling session portrayed in the video that some of your own personal situations were raised to your attention. If these situations were at all uncomfortable or problematic for you, please contact the study administrator, Stephen H. Wright, immediately and a referral for support will be arranged. He can be reached at shwright@syr.edu, the Honors Program, 306 Bowne Hall, Syracuse University, Syracuse, New York, 13244 or by phone: (315) 443-2759. Any such arrangements would be treated with complete confidentiality.

K: Good to see you!

D: (response)

K: Like to discuss today?

D: Stressed, not feeling self, male roommate

K: Sounds stressful

D: Doorknob

K: Difficult Adjustment

D: Agree; Frustration, Grad School, Temple, Applications

K: Get life right on track; not sure

D: Stressing out, Out of routine, Exercise; Half marathon

K: (Missing) best way of relieving stress

D: Frustrating; trying to get back on track; Dating – bad date; check

K: Feeling disillusioned

D: Agree.

K: Mentioned other dates; what about?

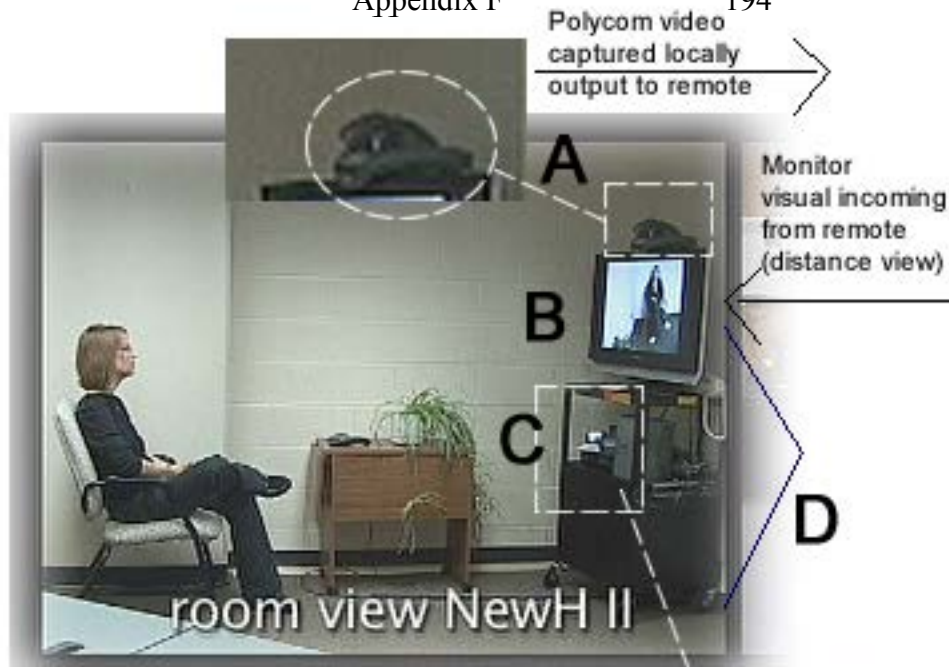
D: Date with guy who was inappropriate

K: How handle?

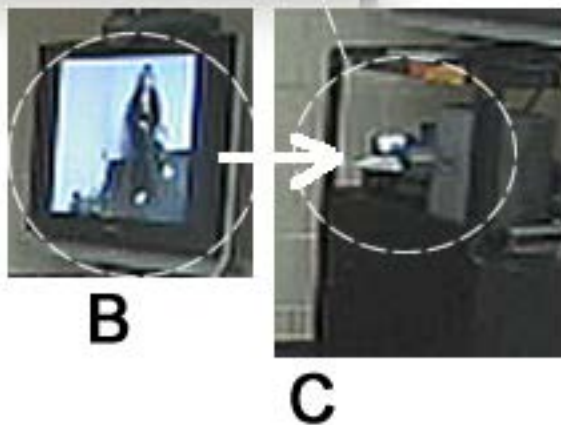
D: Describe

K: Sounds like

END



- A: Polycom camera sends local view to remote monitor
- B: Local Monitor displays distance view
- C: Camcorder records distance view
- D: Video Cart



Equipment:

Polycom: ViewStation EX (Bowne Hall)

http://www.polycom.com/common/documents/support/sales_marketing/products/video/viewstation_EX_datasheet.pdf

TV-quality video and audio

Max data rate H.323: up to 768kbps over IP

Point-to-point video conferencing frame rate up to 30 fps (variable 15-30fps)

Video Resolution 4CIF captured (704 x 576)

displayed to 20" JVC TV Monitor (guessed at the size of the display)

Full duplex audio (standards: 7 kHz G.722, G.722.1, 3.4 kHz with G.711, G.728)

Network:

Connected to the University campus network via the Polycom camera's (onboard) embedded 10/100 ethernet switch

General network topography at Syracuse University is 10/100 Mbps switched network inside buildings managed by Cisco switches and routers at the various connection points, over a fiber backbone between buildings. At the time of this study both rooms had ports which connected the Polycom units at 10 mbps.

Capture of the sessions:

Captured room audio from client and counselor w/ Polycom's Digital Tabletop Microphone, 360° unidirectional voice pick-up and built-in gated mixer

Captured Polycom transmission from far end (see recording settings) to Sony camcorders mini-DV using

RCA outputs from Polycom:

1 x RCA/Phono, composite and 2 x RCA/phono line level

Recording settings:

Set to record far end continuously in each case to avoid the "switching" back and forth which is the default setting on Polycoms (the capture would have only recorded who was speaking in the default setting). By taping each "far end" continuously the recording shows what each viewer (client and counselor) actually saw during the entire session including listening and speaking.

Newhouse II, Learning Environments**Camera and Monitor**

Polycom - VSX 7000A (Release 8.5.3.2)

Samsung - LN-R329DX/XAA (32" LCD)

http://www.ivci.com/pdf/videoconferencing_polycom_vsx_7000_data_sheet.pdf

Project Title: A Comparison of Counselors' Perceptions of a Session Conducted by Videoconferencing Versus Face-to-Face

Study Administrator: Steve Wright

Please complete all sections. I through VI

PARTICIPATION INCENTIVE: COMPLETING ALL SECTIONS AND ITEMS WILL ENTITLE YOU TO RECEIVE A \$5.00 GIFT CERTIFICATE FROM STARBUCKS

- I. Informed Consent Form
- II. Introduction to Video
- III. Demographic Questionnaire
- IV. Quantitative Assessment
- V. Qualitative Assessment
- VI. Debriefing Statement
- VII. Form to Receive \$5.00 Gift Certificate from Starbucks



(PLEASE PROCEED TO SECTION 1)

Section I: Informed Consent

Project Title: *A Comparison of Counselors' Perceptions of a Session Conducted by Videoconferencing Versus Face-to-Face*

My name is Steve Wright, and I am a doctoral student at Syracuse University and Assistant Director of the Honors Program. I am inviting you to participate in a research study. Involvement in the study is voluntary, so you may choose to participate or not. This form will explain the study to you and please feel free to ask questions about the research if you have any. I will be happy to explain anything in greater detail if you wish.

I am interested in learning more about how technology can provide greater access to counseling services for some groups. You will be asked to read a brief statement, watch a pre-recorded simulated counseling session, and respond to 4 surveys. This will take about 20 minutes of your time. All information will be kept confidential; I will assign a number to your responses, and only my faculty advisor and I will have the key to indicate which number belongs to which participant. A copy of this signed document will be given to each participant.

The benefit of this research is that you will be helping us to understand how counselors view the use of technology in counseling. This information should help us to gain a better understanding of what is necessary to make counseling services more accessible to some groups. You may benefit from taking part in the research by observing a typical college counseling session and seeing how the counselor chooses to handle the situation. The risk to you of participating in this study is that the simulated session may remind you of other counseling sessions of which you have been a part. The risks will be minimized by viewing the debriefing portion of the DVD on which a statement can be read that further explains the details of the study and how to obtain further resources for support. If you do not want to take part, you have the right to refuse to take part, without penalty. If you decide to take part and later no longer wish to continue, you have the right to withdraw from the study at any time, without penalty. If you have any questions, concerns, complaints about the research, contact Steve Wright at 315-443-2759, The Renée Crown University Honors Program, 306 Bowne Hall, Syracuse University, Syracuse, N.Y. 13244 or shwright@syr.edu or Professor James Bellini, 259 Huntington Hall, Syracuse University, Syracuse, N. Y. 13244 or jlbellin@syr.edu . If you have any questions about your rights as a research participant, you have questions, concerns, or complaints that you wish to address to someone other than the investigator, or if you cannot reach the investigator, contact the Syracuse University Institutional Review Board at 315-443-3013.

All of my questions have been answered, I am over the age of 18 and I wish to participate in this research study.

Signature of participant

Date

Print name of participant

Date of Birth

Signature of investigator

Date

Print name of investigator

(PLEASE PROCEED TO SECTION II)

Section II: Introduction to the Video

Instructions: Please read the following three paragraphs in their entirety.

The video you are about to see shows a college mental health counseling session with Dana, the client, and Kris, the counselor. Dana and Kris have been working together over the course of an academic year and this is their fifth session. The setting is a college counseling center at a major university in the northeast U.S.

In their initial session, Dana sought help for difficulties she was having with handling stress and anxiety, and ways to improve a number of her relationships, including those with her parents, roommates, and friends. She has felt that she has been somewhat preoccupied and hasn't been able to do all the activities that she has been accustomed to. Dana is a second semester senior, and plans to graduate in May of this year. She has applied to graduate school in the Fall, but also has anxiety and a number of concerns about the uncertainty of her future, her career direction, and leaving the University that she has attended for the past four years.

The video shows an excerpt starting at the beginning of their fifth session.

(PLEASE PROCEED TO SECTION III)

Section III: Demographic Questionnaire

Instructions: Please check the appropriate box or fill in the blanks for each item, 1-10. Please make sure to complete each item.

3. Gender

Female:

Male:

4. Age Number of Years: _____

5. Ethnicity

European American

African American

Asian American

Latino American

Other (please specify) _____

6. Level of Education (may indicate more than one)

Master's Program (2nd year or beyond):

Master's Degree:

Doctoral Degree: Other (please specify): _____

7. Program of Education (may indicate more than one)

Counseling or Counselor Education:

Psychology:

Marriage and Family Therapy: Social Work:

Other (please specify): _____

8. Current Primary Professional Role

Student:

Clinician:

Educator:

Administrator:

Other (please describe): _____

9. Years of Work as Counseling or Mental Health Professional

Please enter your total number of years: _____

10. Technology Courses

Please enter the number of post-secondary computer and/or technology courses that you completed: _____

11. What proportion of your (waking) day do you spend with computers and technology?

Less than 10%

10 – 25 %

26 – 40 %

41 – 60%

61 – 75%

Greater than 75%

12. What do you primarily use computers and technology for? (Please choose one)

Recreation (Games)

Getting Information (e.g., from world-wide web)

Communication (e.g., email)

Work

Home Management

I don't use computers or technology

(PLEASE PROCEED TO SECTION IV)

Section IV: Quantitative Assessment

A. Session Evaluation

Please circle the appropriate number to show how you feel about this session.

This session was:

13.	bad	1	2	3	4	5	6	7	good
14.	difficult	1	2	3	4	5	6	7	easy
15.	valuable	1	2	3	4	5	6	7	worthless
16.	shallow	1	2	3	4	5	6	7	deep
17.	relaxed	1	2	3	4	5	6	7	tense
18.	unpleasant	1	2	3	4	5	6	7	pleasant
19.	full	1	2	3	4	5	6	7	empty
20.	weak	1	2	3	4	5	6	7	powerful
21.	special	1	2	3	4	5	6	7	ordinary
22.	rough	1	2	3	4	5	6	7	smooth
23.	comfortable	1	2	3	4	5	6	7	uncomfortable

B. Counselor Rating

In the following assessment, each characteristic is followed by a seven-point scale that ranges from “not very” to “very”. Please mark an “X” at the point on the scale that best represents how you viewed the counselor.

24. SINCERE

not very sincere _____:_____ : _____:_____ : _____:_____ : _____:_____ very sincere

25. SKILLFUL

not very skillful _____:_____ : _____:_____ : _____:_____ : _____:_____ very skillful

26. HONEST

not very honest _____:_____ : _____:_____ : _____:_____ : _____:_____ very honest

27. EXPERT

not very expert _____:_____ : _____:_____ : _____:_____ : _____:_____ very expert

- 28. LIKABLE**
- not very likable _____ : _____ : _____ : _____ : _____ : _____ : _____ very likable
- 29. SOCIABLE**
- not very sociable _____ : _____ : _____ : _____ : _____ : _____ : _____ very sociable
- 30. WARM**
- not very warm _____ : _____ : _____ : _____ : _____ : _____ : _____ very warm
- 31. TRUSTWORTHY**
- not very trustworthy _____ : _____ : _____ : _____ : _____ : _____ : _____ very trustworthy
- 32. EXPERIENCED**
- not very experienced _____ : _____ : _____ : _____ : _____ : _____ : _____ very experienced
- 33. RELIABLE**
- not very reliable _____ : _____ : _____ : _____ : _____ : _____ : _____ very reliable
- 34. PREPARED**
- not very prepared _____ : _____ : _____ : _____ : _____ : _____ : _____ very prepared
- 35. FRIENDLY**
- not very friendly _____ : _____ : _____ : _____ : _____ : _____ : _____ very friendly

C. How Well the Counselor and Client Worked Together

The following are sentences that describe some of the different ways you might think or feel about the relationship between the counselor and client. If the statement describes the way you always feel (or think) circle the number 7; if it never applies to you, circle the number 1. Use the numbers in between to describe the variations between these extremes.

36. There is agreement about the steps to be taken to improve the client's situation.

1 2 3 4 5 6 7
 Never Rarely Occasionally Sometimes Often Very Often Always

37. There is agreement about the usefulness of the current activity in counseling.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

38. There is mutual liking between the client and the counselor.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

39. There are doubts or a lack of understanding about what participants are trying to accomplish in counseling.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

40. The client feels confident in the counselor's ability to help the client.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

41. The client and the counselor are working towards mutually agreed upon goals.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

42. The client feels that the counselor appreciates her as a person.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

43. There is agreement on what is important for the client to work on.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

44. There is a mutual trust between the client and counselor.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

45. The client and counselor have different ideas about what the client's real problems are.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

46. The client and counselor have established a good understanding of the kind of changes that would be good for the client.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

47. The client believes that the way they are working with his/her problem is correct.

1 2 3 4 5 6 7
 Never Rarely Occasionally Sometimes Often Very Often Always

D. Attitude toward Computers

Below are a series of statements. There are no correct answers to these statements. They are designed to permit you to indicate the extent to which you agree or disagree with the ideas expressed. Place a checkmark in the space under the label which is closest to your agreement or disagreement with the statements.

		Strongly Agree	Slightly Agree	Slightly Disagree	Strongly Disagree
48.	I would like working with computers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49.	The challenge of solving problems with computers does not appeal to me.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50.	I think working with computers would be enjoyable and stimulating.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51.	Figuring out computer problems does not appeal to me.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52.	When there is a problem with a computer run that I can't immediately solve, I would stick with it until I have the answer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53.	I don't understand how some people can spend so much time working with computers and seem to enjoy it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
54.	Once I start to work with the computer, I would find it hard to stop.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55.	I will do as little work with computers as possible.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
56.	If a problem is left unsolved in a computer class, I would continue to think about it afterward.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
57.	I do not enjoy talking with others about computers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(PLEASE PROCEED TO SECTION V)

Section V: Qualitative Assessment

58. Will you be open to using high quality videoconferencing in your counseling practice in the future? Why or why not?

59. Please describe what you consider to be the advantages and limitations to counseling facilitated by high quality videoconferencing?

60. Please describe what you consider to be the advantages and limitations to counseling conducted face-to-face.

(PLEASE PROCEED TO SECTION VI)

Section VI: Debriefing Statement

Thank you for participating in this study that is designed to better understand counselor perceptions of a counseling session that was conducted either face-to-face or by videoconferencing technology. Your responses to the questionnaire, counseling process surveys, and the survey on technology will help us begin to determine whether videoconferencing is a viable means for conducting some forms of counseling.

There is a possibility that by witnessing the counseling session portrayed in the video that some of your own personal situations were raised to your attention. If these situations were at all uncomfortable or problematic for you, please contact the study administrator, Stephen H. Wright, immediately and a referral for support will be arranged. He can be reached at shwright@syr.edu, the Honors Program, 306 Bowne Hall, Syracuse University, Syracuse, New York, 13244 or by phone: (315) 443-2759. Any such arrangements would be treated with complete confidentiality.

(PLEASE PROCEED TO SECTION VII)

Section VII: Form to Receive \$5.00 Gift Certificate From Starbucks

Below, please indicate the mailing address to which you would like the gift certificate sent. Please be sure to include your zip code.

Street Address:

City:

State:

Zip Code:

Email (optional): _____

THANK YOU FOR PARTICIPATING!



SYRACUSE UNIVERSITY
Institutional Review Board
MEMORANDUM

TO: James Bellini
DATE: February 25, 2008
SUBJECT: Expedited Protocol Review-Approval of Human Participants
IRB #: 08-013
TITLE: *A Comparison of Counselors' Perceptions of a Session Conducted by Videoconferencing Versus Face-to-Face*

The above referenced protocol, submitted for expedited review, has been evaluated by the Institutional Review Board (IRB) for the following:

1. the rights and welfare of the individual(s) under investigation;
2. appropriate methods to secure informed consent; and
3. risks and potential benefits of the investigation.

Through the University's expedited review process, your protocol was determined to be of no more than minimal risk and has been given **expedited approval**. It is my judgment that your proposal conforms to the University's human participants research policy and its assurance to the Department of Health and Human Services, available at: <http://www.orip.syr.edu/humanresearch.html>.

Your protocol is approved for implementation and operation from **February 22, 2008** until **February 21, 2009**. If appropriate, attached is the protocol's approved informed consent document, date-stamped with the expiration date. This document is to be used in your informed consent process. If you are using written consent, Federal regulations require that each participant indicate their willingness to participate by signing the informed consent document and be provided with a copy of the signed consent form. Regulations also require that you keep a copy of this document for a minimum of three years.

CHANGES TO APPROVED PROTOCOL: Proposed changes to this protocol during the period for which IRB approval has already been given, cannot be initiated without IRB review and approval, except when such changes are essential to eliminate apparent immediate harm to the participants. Changes in approved research initiated without IRB review and approval to eliminate apparent immediate hazards to the participant must be reported to the IRB within five days. Protocol changes are requested on an amendment application available on the IRB web site; please reference your IRB number and attach any documents that are being amended.

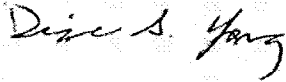
CONTINUATION BEYOND APPROVAL PERIOD: To continue this research project beyond **February 21, 2009**, you must submit a renewal application for review and approval. A renewal reminder will be sent to you approximately 60 days prior to the expiration date. *(If the researcher will be traveling out of the country when the protocol is due to be renewed, please renew the protocol before leaving the country.)*

Office of Research Integrity and Protections
 121 Bowne Hall, Syracuse, New York 13244-1200
 (Phone) 315.443.3013 ♦ (Fax) 315.443.9889
 orip@syr.edu ♦ www.orip.syr.edu

UNANTICIPATED PROBLEMS INVOLVING RISKS: You must report any unanticipated problems involving risks to subjects or others within 10 working days of occurrence to the IRB at 315.443.3013 or orip@syr.edu.

STUDY COMPLETION: The completion of a study must be reported to the IRB within 14 days.

Thank you for your cooperation in our shared efforts to assure that the rights and welfare of people participating in research are protected.



Diane S. Young, Ph.D.
Chair

Note to Faculty Advisor: This notice is only mailed to faculty. If a student is conducting this study, please forward this information to the student researcher.

DEPT: Counseling & Human Services, 259 Huntington Hall STUDENT: Stephen Wright



SYRACUSE UNIVERSITY
Institutional Review Board
MEMORANDUM

TO: James Bellini
DATE: February 6, 2009
SUBJECT: **Renewal Approval-Expedited Review**
IRB #: 08-013
TITLE: *A Comparison of Counselors' Perceptions of a Session Conducted by Videoconferencing Versus Face-to-Face*

The request for renewal of your human subjects protocol has been reviewed by the Institutional Review Board (IRB) and has been evaluated for the following:

1. the rights and welfare of the individual(s) under investigation;
2. appropriate methods to secure informed consent; and
3. risks and potential benefits of the investigation.

Your protocol is approved for implementation and operation for a period of one year, from **February 21, 2009** to **February 20, 2010**. If appropriate, attached is the protocol's approved informed consent document, date-stamped with the expiration date. This document is to be used in your informed consent process. If you are using written consent, Federal regulations require that each participant indicate their willingness to participate by signing the informed consent document and be provided with a copy of the signed consent form. Regulations also require that you keep a copy of this document for a minimum of three years.

CHANGES TO APPROVED PROTOCOL: By its very nature, research involving human participants often requires change in plans and procedures. You are reminded of your responsibility to obtain IRB approval of any changes in your protocol prior to implementing them, except when such change is essential to minimize harm to the participants. Changes in approved research initiated without IRB review and approval to eliminate apparent immediate hazards to the participant must be reported to the IRB within five days. Protocol changes are requested on an amendment application available on the IRB web site; please reference your IRB number and attach any documents that are being amended.

CONTINUATION BEYOND APPROVAL PERIOD: To continue this research project beyond **February 20, 2010**, you must submit a renewal application for review and approval. A renewal reminder will be sent to you approximately 60 days prior to the expiration date. *(If the researcher will be traveling out of the country when the protocol is due to be renewed, please renew the protocol before leaving the country.)*

UNANTICIPATED PROBLEMS INVOLVING RISKS: You must report any unanticipated problems involving risks to subjects or others within 10 working days of occurrence to the IRB at 315.443.3013 or orip@syr.edu.

Office of Research Integrity and Protections

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 ♦ (Phone) 315.443.3013 ♦ (Fax) 315.443.9889 ♦
 ♦ orip@syr.edu ♦ www.orip.syr.edu ♦

STUDY COMPLETION: The completion of a study must be reported to the IRB within 14 days.

Thank you for your cooperation in our shared efforts to assure that the rights and welfare of people participating in research are protected.



Jill Kanaley, Ph.D.
Associate Chair

Note to Faculty Advisor: This notice is only mailed to faculty. If a student is conducting this study, please forward this information to the student researcher.

DEPT: Counseling & Human Services, 259 Huntington Hall

STUDENT: Stephen Wright



SYRACUSE UNIVERSITY
 Institutional Review Board
MEMORANDUM

TO: James Bellini
DATE: January 25, 2010
SUBJECT: Renewal Approval-Expedited Review
IRB #: 08-013
TITLE: *A Comparison of Counselors' Perceptions of a Session Conducted by Videoconferencing Versus Face-to-Face*

The request for renewal of your human subjects protocol has been reviewed by the Institutional Review Board (IRB) and has been evaluated for the following:

1. the rights and welfare of the individual(s) under investigation;
2. appropriate methods to secure informed consent; and
3. risks and potential benefits of the investigation.

Your protocol is approved for implementation and operation for a period of one year, from **February 20, 2010** to **February 19, 2011**. If appropriate, attached is the protocol's approved informed consent document, date-stamped with the expiration date. This document is to be used in your informed consent process. If you are using written consent, Federal regulations require that each participant indicate their willingness to participate by signing the informed consent document and be provided with a copy of the signed consent form. Regulations also require that you keep a copy of this document for a minimum of three years.

NOTE: If you plan on enrolling more than 144 participants, an amendment to increase sample size must be submitted to the IRB Office.

CHANGES TO APPROVED PROTOCOL: By its very nature, research involving human participants often requires change in plans and procedures. You are reminded of your responsibility to obtain IRB approval of any changes in your protocol prior to implementing them, except when such change is essential to minimize harm to the participants. Changes in approved research initiated without IRB review and approval to eliminate apparent immediate hazards to the participant must be reported to the IRB within five days. Protocol changes are requested on an amendment application available on the IRB web site; please reference your IRB number and attach any documents that are being amended.

CONTINUATION BEYOND APPROVAL PERIOD: To continue this research project beyond **February 19, 2011**, you must submit a renewal application for review and approval. A renewal reminder will be sent to you approximately 60 days prior to the expiration date. *(If the researcher will be traveling out of the country when the protocol is due to be renewed, please renew the protocol before leaving the country.)*

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STUDY COMPLETION: The completion of a study must be reported to the IRB within 14 days.

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Kathleen King, Ph.D.
IRB Chair

Note to Faculty Advisor: This notice is only mailed to faculty. If a student is conducting this study, please forward this information to the student researcher.

DEPT: Counseling & Human Services, 259 Huntington Hall

STUDENT: Stephen Wright



SYRACUSE UNIVERSITY
Institutional Review Board
MEMORANDUM

TO: James Bellini
DATE: February 10, 2011
SUBJECT: **Renewal Approval - Expedited Review**
IRB #: 08-013
TITLE: *A Comparison of Counselors' Perceptions of a Session Conducted by Videoconferencing Versus Face-to-Face*

The request for renewal of your human subjects protocol has been reviewed by the Institutional Review Board (IRB) and has been evaluated for the following:

1. the rights and welfare of the individual(s) under investigation;
2. appropriate methods to secure informed consent; and
3. risks and potential benefits of the investigation.

Your protocol is approved for implementation and operation for a period of one year, from **February 19, 2011 to February 18, 2012**. If appropriate, attached is the protocol's approved informed consent document, date-stamped with the expiration date. This document is to be used in your informed consent process. If you are using written consent, Federal regulations require that each participant indicate their willingness to participate by signing the informed consent document and be provided with a copy of the signed consent form. Regulations also require that you keep a copy of this document for a minimum of three years.

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CONTINUATION BEYOND APPROVAL PERIOD: To continue this research project beyond **February 18, 2012**, you must submit a renewal application for review and approval. A renewal reminder will be sent to you approximately 60 days prior to the expiration date. *(If the researcher will be traveling out of the country when the protocol is due to be renewed, please renew the protocol before leaving the country.)*

UNANTICIPATED PROBLEMS INVOLVING RISKS: You must report any unanticipated problems involving risks to subjects or others within 10 working days of occurrence to the IRB at 315.443.3013 or orip@syr.edu.

STUDY COMPLETION: The completion of a study must be reported to the IRB within 14 days.

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Kathleen King, Ph.D.
IRB Chair

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DEPT: Counseling & Human Services, 259 Huntington Hall

STUDENT: Stephen Wright



SYRACUSE UNIVERSITY
Institutional Review Board
MEMORANDUM

TO: James Bellini
DATE: December 4, 2008
SUBJECT: **Amendment Approval-Use of Human Participants**
AMENDMENT # 1: Other - Inclusion of an Online Version (Assessment Instruments)
IRB #: 08-013
TITLE: *A Comparison of Counselors' Perceptions of a Session Conducted by Videoconferencing Versus Face-to-Face*

The amendment(s) submitted to the above referenced human participants protocol for review by the Institutional Review Board (IRB) is approved.

This protocol must still be renewed yearly, based on the original expiration date of **February 21, 2009**. If applicable, attached is the protocol's approved, amended informed consent document, date-stamped with the expiration date. This amended document replaces the original approved document and is to be used in your informed consent process. If you are using written consent, Federal regulations require that each participant indicate their willingness to participate by signing the informed consent document and be provided with a copy of the signed consent form. Regulations also require that you keep a copy of this document for a minimum of three years.

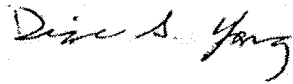
CHANGES TO APPROVED PROTOCOL: Any additional proposed changes to this protocol during the period for which IRB approval has already been given, cannot be initiated without IRB review and approval, except when such changes are essential to eliminate apparent immediate harm to the participants. Changes in approved research initiated without IRB review and approval to eliminate apparent immediate hazards to the participant must be reported to the IRB within five days. Protocol changes are requested on an amendment application available on the IRB web site; please reference your IRB number and attach any documents that are being amended.

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Diane S. Young, Ph.D.
Chair

Note to Faculty Advisor: This notice is only mailed to faculty. If a student is conducting this study, please forward this information to the student researcher.

DEPT: Counseling & Human Services, 259 Huntington Hall

STUDENT: Stephen Wright



SYRACUSE UNIVERSITY
Institutional Review Board
MEMORANDUM

TO: James Bellini
DATE: February 16, 2010
SUBJECT: Amendment Approval-Use of Human Participants
AMENDMENT # 2: Revised Consent Form(s)
IRB #: 08-013
TITLE: *A Comparison of Counselors' Perceptions of a Session Conducted by Videoconferencing Versus Face-to-Face*

The amendment(s) submitted to the above referenced human participants protocol for review by the Institutional Review Board (IRB) is approved.

This protocol must still be renewed yearly, based on the original expiration date of **February 19, 2011**. If applicable, attached is the protocol's approved, amended informed consent document, date-stamped with the expiration date. This amended document replaces the original approved document and is to be used in your informed consent process. If you are using written consent, Federal regulations require that each participant indicate their willingness to participate by signing the informed consent document and be provided with a copy of the signed consent form. Regulations also require that you keep a copy of this document for a minimum of three years.

CHANGES TO APPROVED PROTOCOL: Any additional proposed changes to this protocol during the period for which IRB approval has already been given, cannot be initiated without IRB review and approval, except when such changes are essential to eliminate apparent immediate harm to the participants. Changes in approved research initiated without IRB review and approval to eliminate apparent immediate hazards to the participant must be reported to the IRB within five days. Protocol changes are requested on an amendment application available on the IRB web site; please reference your IRB number and attach any documents that are being amended.

CONTINUATION BEYOND APPROVAL PERIOD: To continue this research project beyond **February 19, 2011**, you must submit a renewal application for review and approval. A renewal reminder will be sent to you approximately 60 days prior to the expiration date. *(If the researcher will be traveling out of the country when the protocol is due to be renewed, please renew the protocol before leaving the country.)*

UNANTICIPATED PROBLEMS INVOLVING RISKS: You must report any unanticipated problems involving risks to subjects or others within 10 working days of occurrence to the IRB at 315.443.3013 or orip@syr.edu.

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Kathleen King, Ph.D.
IRB Chair

Note to Faculty Advisor: This notice is only mailed to faculty. If a student is conducting this study, please forward this information to the student researcher.

DEPT: Counseling & Human Services, 259 Huntington Hall

STUDENT: Stephen Wright



SYRACUSE UNIVERSITY
Institutional Review Board
MEMORANDUM

TO: James Bellini
DATE: February 16, 2010
SUBJECT: **Amendment Approval-Use of Human Participants**
AMENDMENT # 3: Change in Questionnaire/Survey
IRB #: 08-013
TITLE: *A Comparison of Counselors' Perceptions of a Session Conducted by Videoconferencing Versus Face-to-Face*

The amendment(s) submitted to the above referenced human participants protocol for review by the Institutional Review Board (IRB) is approved.

This protocol must still be renewed yearly, based on the original expiration date of **February 19, 2011**. If applicable, attached is the protocol's approved, amended informed consent document, date-stamped with the expiration date. This amended document replaces the original approved document and is to be used in your informed consent process. If you are using written consent, Federal regulations require that each participant indicate their willingness to participate by signing the informed consent document and be provided with a copy of the signed consent form. Regulations also require that you keep a copy of this document for a minimum of three years.

CHANGES TO APPROVED PROTOCOL: Any additional proposed changes to this protocol during the period for which IRB approval has already been given, cannot be initiated without IRB review and approval, except when such changes are essential to eliminate apparent immediate harm to the participants. Changes in approved research initiated without IRB review and approval to eliminate apparent immediate hazards to the participant must be reported to the IRB within five days. Protocol changes are requested on an amendment application available on the IRB web site; please reference your IRB number and attach any documents that are being amended.

CONTINUATION BEYOND APPROVAL PERIOD: To continue this research project beyond **February 19, 2011**, you must submit a renewal application for review and approval. A renewal reminder will be sent to you approximately 60 days prior to the expiration date. *(If the researcher will be traveling out of the country when the protocol is due to be renewed, please renew the protocol before leaving the country.)*

UNANTICIPATED PROBLEMS INVOLVING RISKS: You must report any unanticipated problems involving risks to subjects or others within 10 working days of occurrence to the IRB at 315.443.3013 or orip@syr.edu.

Thank you for your cooperation in our shared efforts to assure that the rights and welfare of people participating in research are protected.



Kathleen King, Ph.D.
IRB Chair

Note to Faculty Advisor: This notice is only mailed to faculty. If a student is conducting this study, please forward this information to the student researcher.

DEPT: Counseling & Human Services, 259 Huntington Hall

STUDENT: Stephen Wright



SYRACUSE UNIVERSITY
Institutional Review Board
MEMORANDUM

TO: James Bellini
DATE: February 16, 2010
SUBJECT: **Amendment Approval-Use of Human Participants**
AMENDMENT # 4: Other - Introduction to Videos/Debriefing Statement
IRB #: 08-013
TITLE: *A Comparison of Counselors' Perceptions of a Session Conducted by Videoconferencing Versus Face-to-Face*

The amendment(s) submitted to the above referenced human participants protocol for review by the Institutional Review Board (IRB) is approved.

This protocol must still be renewed yearly, based on the original expiration date of **February 19, 2011**. If applicable, attached is the protocol's approved, amended informed consent document, date-stamped with the expiration date. This amended document replaces the original approved document and is to be used in your informed consent process. If you are using written consent, Federal regulations require that each participant indicate their willingness to participate by signing the informed consent document and be provided with a copy of the signed consent form. Regulations also require that you keep a copy of this document for a minimum of three years.

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CONTINUATION BEYOND APPROVAL PERIOD: To continue this research project beyond **February 19, 2011**, you must submit a renewal application for review and approval. A renewal reminder will be sent to you approximately 60 days prior to the expiration date. *(If the researcher will be traveling out of the country when the protocol is due to be renewed, please renew the protocol before leaving the country.)*

UNANTICIPATED PROBLEMS INVOLVING RISKS: You must report any unanticipated problems involving risks to subjects or others within 10 working days of occurrence to the IRB at 315.443.3013 or orip@syr.edu.

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Kathleen King, Ph.D.
IRB Chair

Note to Faculty Advisor: This notice is only mailed to faculty. If a student is conducting this study, please forward this information to the student researcher.

DEPT: Counseling & Human Services, 259 Huntington Hall

STUDENT: Stephen Wright



SYRACUSE UNIVERSITY
Institutional Review Board
MEMORANDUM

TO: James Bellini
DATE: February 15, 2011
SUBJECT: Amendment Approval - Use of Human Participants
AMENDMENT # 6: Change in Questionnaire
IRB #: 08-013
TITLE: *A Comparison of Counselors' Perceptions of a Session Conducted by Videoconferencing Versus Face-to-Face*

The amendment(s) submitted to the above referenced human participants protocol for review by the Institutional Review Board (IRB) is approved.

This protocol must still be renewed yearly, based on the original expiration date of **February 18, 2012**. If applicable, attached is the protocol's approved, amended informed consent document, date-stamped with the expiration date. This amended document replaces the original approved document and is to be used in your informed consent process. If you are using written consent, Federal regulations require that each participant indicate their willingness to participate by signing the informed consent document and be provided with a copy of the signed consent form. Regulations also require that you keep a copy of this document for a minimum of three years.

CHANGES TO APPROVED PROTOCOL: Any additional proposed changes to this protocol during the period for which IRB approval has already been given, cannot be initiated without IRB review and approval, except when such changes are essential to eliminate apparent immediate harm to the participants. Changes in approved research initiated without IRB review and approval to eliminate apparent immediate hazards to the participant must be reported to the IRB within five days. Protocol changes are requested on an amendment application available on the IRB web site; please reference your IRB number and attach any documents that are being amended.

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Thank you for your cooperation in our shared efforts to assure that the rights and welfare of people participating in research are protected.



Kathleen King, Ph.D.
IRB Chair

Note to Faculty Advisor: This notice is only mailed to faculty. If a student is conducting this study, please forward this information to the student researcher.

DEPT: Counseling & Human Services, 259 Huntington Hall

STUDENT: Stephen Wright



SYRACUSE UNIVERSITY
Institutional Review Board
MEMORANDUM

TO: James Bellini
DATE: February 22, 2011
SUBJECT: Amendment Approval - Use of Human Participants
AMENDMENT # 8: Revised Consent Form (Addition of Electronic Consent Form)
IRB #: 08-013
TITLE: *A Comparison of Counselors' Perceptions of a Session Conducted by Videoconferencing Versus Face-to-Face*

The amendment(s) submitted to the above referenced human participants protocol for review by the Institutional Review Board (IRB) is approved.

This protocol must still be renewed yearly, based on the original expiration date of **February 18, 2012**. If applicable, attached is the protocol's approved, amended informed consent document, date-stamped with the expiration date. This amended document replaces the original approved document and is to be used in your informed consent process. If you are using written consent, Federal regulations require that each participant indicate their willingness to participate by signing the informed consent document and be provided with a copy of the signed consent form. Regulations also require that you keep a copy of this document for a minimum of three years.

CHANGES TO APPROVED PROTOCOL: Any additional proposed changes to this protocol during the period for which IRB approval has already been given, cannot be initiated without IRB review and approval, except when such changes are essential to eliminate apparent immediate harm to the participants. Changes in approved research initiated without IRB review and approval to eliminate apparent immediate hazards to the participant must be reported to the IRB within five days. Protocol changes are requested on an amendment application available on the IRB web site; please reference your IRB number and attach any documents that are being amended.

CONTINUATION BEYOND APPROVAL PERIOD: To continue this research project beyond **February 18, 2012**, you must submit a renewal application for review and approval. A renewal reminder will be sent to you approximately 60 days prior to the expiration date. *(If the researcher will be traveling out of the country when the protocol is due to be renewed, please renew the protocol before leaving the country.)*

UNANTICIPATED PROBLEMS INVOLVING RISKS: You must report any unanticipated problems involving risks to subjects or others within 10 working days of occurrence to the IRB at 315.443.3013 or orip@syr.edu.

Office of Research Integrity and Protections
121 Bowne Hall, Syracuse, New York 13244-1200
(Phone) 315.443.3013 ♦ (Fax) 315.443.9889
orip@syr.edu ♦ www.orip.syr.edu

Thank you for your cooperation in our shared efforts to assure that the rights and welfare of people participating in research are protected.



Kathleen King, Ph.D.
IRB Chair

Note to Faculty Advisor: This notice is only mailed to faculty. If a student is conducting this study, please forward this information to the student researcher.

DEPT: Counseling & Human Services, 259 Huntington Hall

STUDENT: Stephen Wright

From: John Corrigan [corrigan.1@osu.edu]
Sent: Sunday, March 02, 2008 7:23 PM
To: Stephen Harding Wright
Subject: Re: Request to Please Use CRF-S in Study

Attachments: CRF-S_scoring.doc; CRF-S.doc
Dear Stephen,

Your dissertation sounds very interesting and I welcome your use of the CRF-S. You have our permission to use the CRF-S in your dissertation. You may want to keep a copy of this e-mail, as Dissertation Abstracts sometimes requires documentation of permissions granted in order to include your dissertation.

I have attached a Word version of the CRF-S. You are free to print, copy and use this version, or cut and paste, as you see fit. There is no fee for your use of the CRF-S, we just ask that proper citation be made. I have also attached a guide to scoring.

Let me know if you have any questions. Good luck with your dissertation.

John Corrigan

Dear Dr. Corrigan,

Greetings from Syracuse. This is Steve Wright from the Honors Program at Syracuse University and I am also a doctoral student in the Counseling department.

I'm writing to ask, please, for permission to use the Counselor Rating Form - Short, as an assessment in my dissertation study, which is entitled, *A Comparison of Counselors' Perceptions of a Session Conducted by Videoconferencing Versus Face-to-Face*. The purpose of this study is to determine whether counselors will rate a college mental health counseling session facilitated by high-end videoconference cameras and equipment the same as a face-to-face session.

My study uses an analogue experimental design and involves a counselor, social worker, or psychologist (or MS student beyond their first year) viewing a video of a college mental health counseling session (randomly assigned to either the face-to-face or videoconference video), and then responding to three assessments related to the counseling process (one of which is the CRF-S) and one involving the

participant's attitudes toward technology.

I believe that high-end videoconferencing has the potential to expand counseling services available to some groups that may be underserved: those isolated by distance, persons with physical disabilities, disorders such as agoraphobia, and men.

My dissertation advisor is Professor James Bellini.

Thank you for your consideration, and please let me know if I can provide further information on my study.

Sincerely,

Steve Wright

Stephen H. Wright

Assistant Director, Advising and Instructional Technology

Renée Crown University Honors Program

Syracuse University

306 Bowne Hall

Syracuse, New York 13244

(315) 443-2759

<http://honors.syr.edu/>



John D. Corrigan, PhD, ABPP
Professor
Department of Physical Medicine and Rehabilitation
The Ohio State University
480 Medical Center Drive
Columbus, OH 43210
phone: (614) 293-3830
fax: (614) 293-4870
e-mail: corrigan.1@osu.edu
web: www.rehabpsych.org
www.ohiovalley.org



SIMON FRASER UNIVERSITY
THINKING OF THE WORLD

Dr. Stephen H. Wright
Syracuse University
Renée Crown University Honors Program
306 Bowne Hall
Syracuse, New York
13244
U.S.A.

March 4, 2008

LIMITED COPYRIGHT LICENSE (ELECTRONIC) # 200743.417

Dear Dr. Wright

You have permission to use the Working Alliance Inventory (WAI) for the investigation: "A Comparison of Counselors' Perceptions of a Session Conducted by Videoc Conferencing Versus Face-to-Face."

This limited copyright release extends to all forms of the WAI for which I hold copy right privileges, but limited to use of the inventory for not-for-profit research, and does not include the right to publish or distribute the instrument(s) in any form.

I would appreciate if you shared the results of your research with me when your work is completed so I may share this information with other researchers who might wish to use the WAI. If I can be of further help, do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Adam O. Horvath", written in a cursive style.

Dr. Adam O. Horvath
Professor
Faculty of Education and
Department of Psychology

Ph# (778) 782-3624
Fax: (778) 782-3203
e-mail: horvath@sfu.ca
Internet: <http://www.educ.sfu.ca/alliance/allianceA>

From: Bill Stiles [stileswb@muohio.edu]
Sent: Sunday, March 02, 2008 1:39 PM
To: Stephen Harding Wright
Subject: Re: Request to Please Use SEQ in Study
Dear Steve,

Yes, you are very welcome to use the SEQ in your research. I'd be very interested to see a copy of your results when the report is ready.

Best wishes,
Bill

At 12:44 PM 3/2/08 -0500, Stephen Harding Wright wrote:

Dear Dr. Stiles,

<?xml:namespace prefix = o ns = "urn:schemas-microsoft-com:office:office" />

Greetings from <?xml:namespace prefix = st1 ns = "urn:schemas-microsoft-com:office:smarttags" />Syracuse. This is Steve Wright from the Honors Program at Syracuse University and I am also a doctoral student in the Counseling department.

I'm writing to ask, please, for permission to use the Session Evaluation Questionnaire, Form 5, as an assessment in my dissertation study, which is entitled, *A Comparison of Counselors' Perceptions of a Session Conducted by Videoconferencing Versus Face-to-Face*. The purpose of this study is to determine whether counselors will rate a college mental health counseling session facilitated by high-end videoconference cameras and equipment the same as a face-to-face session.

My study uses an analogue experimental design and involves a counselor, social worker, or psychologist (or MS student beyond their first year) viewing a video of a college mental health counseling session (randomly assigned to either the face-to-face or videoconference video), and then responding to three assessments related to the counseling process (one of which is the SEQ) and one involving the participant's attitudes toward technology.

I believe that high-end videoconferencing has the potential to expand counseling services available to some groups that may be underserved: those isolated by distance, persons with physical disabilities, disorders such as agoraphobia, and men.

My dissertation advisor is Professor James Bellini.

Thank you for your consideration, and please let me know if I can provide further information on my study.

Sincerely,

Steve Wright

Stephen H. Wright
Assistant Director, Advising and Instructional Technology
Renée Crown University Honors Program
Syracuse University
306 Bowne Hall
Syracuse, New York 13244
(315) 443-2759
<http://honors.syr.edu/>

From: Loyd, Douglas (del6n) [del6n@eservices.virginia.edu]
Sent: Tuesday, March 04, 2008 12:23 PM
To: Stephen Harding Wright
Subject: Loyd/Gressard Computer Attitude Scale

Attachments: Survey.doc

Stephen,

Thank you for your inquiry about the Computer Attitude Scale.

As you may know, Brenda Loyd, author of the CAS, was President of the National Council on Measurement in Education (NCME) at the time of her death in 1995. Dr. Loyd's co-author, Clarice Gressard, has asked me to handle all requests for permission to use their survey, and to provide the CAS survey and scoring protocol to researchers who wish to use their scale.

Therefore, in response to your inquiry, I am attaching a copy of the Loyd/Gressard survey of attitudes towards computers, in an MSWord document (survey.doc). If you have any problem reading it please let me know. Unfortunately I have no further information about the use of the CAS beyond that provided in this message and the attached document.

The survey is scored according to the following:

For questions 1, 3, 4, 6, 9, 11, 12, 14, 16, 17, 19, 22, 25, 27, 28, 30, 33, 35, 36, 38 (Strongly Agree=4, Slightly Agree=3, Slightly Disagree=2, Strongly Disagree=1).


For questions 2, 5, 7, 8, 10, 13, 15, 18, 20, 21, 23, 24, 26, 29, 31, 32, 34, 37, 39, 40 (Strongly Agree=1, Slightly Agree=2, Slightly Disagree=3, Strongly Disagree=4).

The questions are coded so that the higher the score, the more positive the attitude.

Four subscores can also be obtained from the questions.

Anxiety: 1, 5, 9, 13, 17, 21, 25, 29, 33, 37
Confidence: 2, 6, 10, 14, 18, 22, 26, 30, 34, 38
Liking: 3, 7, 11, 15, 19, 23, 27, 31, 35, 39
Usefulness: 4, 8, 12, 16, 20, 24, 28, 32, 36, 40

Again, higher scores correspond to more positive attitude, e.g., a higher confidence score means more confidence and a higher anxiety score means less anxiety.



Permission is granted for use of this scale. In any publications arising from its use, please be sure to credit the authors, Brenda H. Loyd and Clarice P. Gressard.

Thanks for your interest. Best wishes.

Doug Loyd

Attachment: Survey.doc (MSWord)

Doug Loyd, Faculty Technical Advocate
University of Virginia School of Law
Phone: (434) 981-9560

Stephen Harding Wright

4206 Eldridge Road • Manlius, NY • (315) 682-4308 • shwright@syr.edu

Education

| | |
|---|---------------|
| Syracuse University
<i>Ph.D. Counseling and Counselor
Education</i> | Syracuse, NY |
| Syracuse University
<i>M.S. Counseling and Counselor
Education</i> | Syracuse, NY |
| University of Rochester
<i>B.A. Philosophy</i> | Rochester, NY |

TEACHING EXPERIENCE

Cazenovia College
Adjunct Instructor 1998 to 2001

- Provided educational experiences for undergraduate and continuing education students pursuing degrees in Human Services and Social Sciences. Taught courses including *Therapeutic Recreation* and *Alcohol and Drugs in Modern Society*.

Mohawk Valley Community College
Part-time Instructor 1999 to 2001

- Taught *PY 204 Social Psychology*, *PY 208 Death, Dying and Bereavement* and, *HS 241 Chemical Dependencies*.
- Developed and taught *PY 208 Death, Dying and Bereavement*, as online course using a precursor to Blackboard.

Syracuse University
Assistant Instructor 2003 to 2004

- Co-taught *EDP 678, Counseling Theory and Process*, in the Fall of 2003 with Professor Harold Hackney. Developed and delivered lectures on major theoretical approaches. Developed exercises and materials for experiential component of the class. Worked with the assigned small groups on case studies and reports.
- Co-led the group experiential component of *EDP 784, Group Counseling*. Developed and facilitated group exercises. Presented during lecture component of the class. Worked individually with M.S. students on their reflective papers.

PROFESSIONAL EXPERIENCE

Syracuse University
Assistant Director, Honors Program 2005 to 2012

- **Honors Capstone:** served as the point person for the Capstone Editing Team, and coordinated the Capstone completion process. Served as advisor for Honors students who go through Institutional Research Board (IRB) approval process. Created system to digitally archive capstones and theses, thesis artifacts and presentations.

- **Scholarship Preparation:** worked to substantially increase the numbers of Syracuse students and alumni receiving major national scholarships over the past six years, including the mentoring and preparation of our first Marshall recipient, John Giammatteo, last year. Led the team that created and launched Syracuse's first Nationally Competitive Scholarships website. Advised and mentored undergraduates to attain research placements such as the summer Research Experiences for Undergraduates (REU) at Amgen, those funded by the National Science Foundation, and the National Institute of Health (NIH).
- **Civic Engagement:** led the initiative to develop two new school-based programs at Nottingham High School and the Hillside Work-Scholarship Connection as well as a new program at Center for New Americans. Coordinated and advised students on all aspects related to Civic Engagement and community involvement. In collaboration with the Office of Prevention Services and Center for Public and Community Service, created a civic engagement assessment to evaluate measures of student adjustment in relation to level of civic engagement. Administered survey instrument with Summer Literacy Corps in the Summer of 2007.

Counselor, Honors Program

2002 to 2005

- **Career and Educational Counseling:** served Honors students with special emphasis on helping students get into optimal graduate and law schools. Other counseling emphases included: student assessment, wellness and stress management, finding optimal internships, career research, resume and cover letter writing, and networking. Coordinated and facilitated Professional Development Series – a year-long group sessions for Honors on career and scholarly topics.
- **Advising:** provided close academic advising for all Honors students, including advising about undergraduate and graduate programs throughout the University. Also provided the close advising and mentoring for students applying to significant internal scholarships such as the Remembrance Scholarship. Helped students explore thesis topics and complete Thesis Project Honors.

*Career Counselor and Pre-Law
Advisor, The College of Arts and
Sciences*

2001 to 2002

- **Career Counseling:** managed Career Exploration Services (CES) for the academic year, and provided individual and group career counseling services for undergraduates. Was responsible for implementing a range of student assessment instruments in the areas of career and personal development. Designed and implemented a nine-part Career Development Series. Served as representative from CES to Career Coordinating Committee of the Career Services Network. Served as member of the Presentations, Website Development, Marketing, Recruitment and Sophomore Transition committees. Led the assessment process for the portfolio project.
- **Pre-Law Advising:** served as the All-University Pre-Law advisor. Was responsible for the timely completion of Dean's Certification letters for student and alumni applying to Law Schools. Developed model for CES and Pre-Law websites. Contributed to presentations to the Parents Board, and Freshman Forum faculty.

**Mohawk Valley Community
College**
College Counselor

1999 to 2001

- **Counseling and Advising:** provided personal, career, and academic counseling, and advisement for freshmen, sophomore, and continuing education undergraduates. Implemented a series of classroom presentations designed to help students assess and explore their career interest styles.
- **Institutional Effectiveness:** permanent member of the Institutional Effectiveness (Assessment), Educational Technologies, and Strategic Planning Committees. Chair of the

Summer Institute Staff Development Program. Member of the Retention Committee, and Alcohol and Other Drug Prevention Task Force. Helped design and create the Institutional Effectiveness website and co-authored biennial report to Higher Education as part of the Drug-Free Campuses Act. Also served as member of the Learning Center Advisory, Survey, and Database Committees.

Tully Hill Alcohol & Drug Treatment Center

1999

Coordinator, Young Persons Program

- **Treatment:** provided the counseling, case management, and coordination for the initial program for chemically dependent adolescents and young adults. Worked closely with parents, schools, referral sources and continuing care providers to develop services that were effective in helping these young persons stay drug free and lead healthy and productive lives. Helped to develop specialized services and facilitated individual, and group therapies as well as family sessions.
- **Quality Improvement:** led Quality Improvement team on Patient Care to achieve the highest rating in the JCAHO survey, November 1999. Served as instrumental member of Accreditation and Grant-Writing teams.

Syracuse City School District

1998 to 1999

School Counselor

- Long-term substitute School Counselor for city's middle and high schools. At Lincoln Middle School, and Corcoran and Nottingham High Schools, worked closely with students, parents, teachers, administrators, and representatives from outside agencies to help students be successful in school and deal effectively with life situations. Participated as member of the Grade Level and Pupil Service (Committee on Special Education) teams.

Hospice of Central New York

1998 to 1999

Social Worker

- Made initial contact with terminally ill patients and their families to arrange for hospice services. Provided crisis counseling to families and conducted psychosocial assessment to determine needs. Conducted on-going case management to make improvements in services.

Benjamin Rush Center

1985 to 1997

Director, Adjunctive Therapies Department

Syracuse, NY

- **Treatment and Programs:** responsible for the departmental teams that provided patient programs in the areas of Creative Arts Therapy, Art Studio, Wellness Education, and Recreation Therapy. Created model in which these services were delivered from a central team. Worked closely with department's Exercise Physiologist to create programs in the areas of Wellness and Stress Management. Directed the development of the employee Fitness Studio and Wellness Education programs. Served as clinical and administrative supervisor of up to sixteen members of the department. Responsible for departmental budgets and Quality Improvement efforts. Worked closely with department members to develop new counseling and group leadership roles. Led Trauma Recovery, Expressive Therapy, Healthy Sexuality, and Men's groups.
- **Leadership:** permanent member of hospital committees on Accreditation, Medical Records, Incident Review and Safety. Community presentations on mental health subjects included: Addictions, Heart Disease Prevention, Stigmatization in Mental Health, Men's Rights, Expressive Therapy, & The Use of Role Playing in Treatment for the Onondaga Council on Alcoholism and Addictions, Syracuse University, Onondaga Community College, and LeMoyne College.

- Led steering committee on Patient Assessment that addressed quality improvement projects based on Joint Commission of Accredited Hospitals Organization standards. Directed initial Laboratory Project Team that reduced loss due to missing lab requisitions from \$3700 to under \$200 per month. Also led project team to build an integrated multidisciplinary assessment based on the function of patient information.

SUPERVISION

- Provided clinical supervision for Master's of Science Counseling students in Practicum, Spring 2003, Fall 2003
- Provided site supervision for Master's of Science Counseling students in Internship, Spring 2005, 2006

TRAINING IN SCHOOL SYSTEMS

- **Practicum:** Cazenovia Elementary School; assisted the school counselor in the delivery of a range of student and family services including assessment of counseling needs, individual, group and family interventions, and consultation with other school professionals. Facilitated group of 7-9 second and third graders who had experienced an important loss, typically separation from a parent due to death or divorce.
- **Internship:** Henninger High School; worked with the guidance counseling team to provide student services in the areas of crisis management, career counseling, substance abuse prevention, optimal student placement in classes and other programs, and the promotion of social and multicultural communications skills, among others.

CERTIFICATIONS, MEMBERSHIPS

- National Certified Counselor (NCC), National Board of Certified Counselors (NBCC)
- Member, American Counseling Association, (ACA)
- Member, National Collegiate Honors Council (NCHC)
- Member, Association for Counselor Education and Supervision (ACES)
- School Certification (Provisional): Letter of Qualification (Counseling) - February 1, 1998

AWARDS

- Chancellor's Award for Public Service (CAPS), Individual Faculty/Staff award, April 2004

GRANTS

- 2007 School of Education Research & Creative Grant Award; provided funding for dissertation study

SELECTED PRESENTATIONS

- "Using Current Counseling Strategies and Techniques in Honors and Scholarship Advising and Mentoring", National Collegiate Honors Council, October 2011, Phoenix, AZ

- "Graduate School Series", August 2011, Ronald E. McNair Program Summer Academy, panelist, Syracuse University
- "Using Current Counseling Strategies and Techniques in Scholarship Advising and Mentoring", National Association of Fellowship Advisors, July 2011, Chicago
- "Seeing is Advising: Using Skype and Adobe Connect to Facilitate Distance Honors and Scholarship Advising", October 2010, National Collegiate Honors Council, Kansas City, MO
- "Two-way and Multipoint Videoconferencing as Ways of Connecting with Scholarship Students: Using Skype and Adobe Connect for Distance Advising and Preparation", July 2010, National Association of Fellowship Advisors, Indianapolis
- "Pre-Writing Strategies and Collaboration", July 2010, National Association of Fellowship Advisors, with Henry Jankiewicz, Writing Program, Collegeville, PA
- "Seeing is Advising: Using High and Low-End Videoconferencing to Aid Distance Scholarship Advising", July 2009, National Association of Fellowship Advisors, Seattle
- "A Comparison of Counselors' Perceptions of a Session Conducted by Videoconferencing versus Face-To-Face", March 2009, American Counseling Association, Charlotte, NC
- "The Distance Interview Live: A Demonstration of Counseling Using Videoconferencing via the Internet", North Atlantic Region Association for Counselor Education and Supervision, September 2008, Portland, ME
- "A Live Demonstration of Distance Counseling", Megaconference IX, (international online conference), November 2007
- "The Growing Pains of an Honors Student Association in a University Environment", National Collegiate Honors Council, National Conference, November 2007
- "Benefits to Civic Engagement", National Society of Collegiate Scholars, April 2006
- "Using Video Conferencing via the Internet to Connect with Clients Separated by Distance" Association for Counselor Education and Supervision, October 2005, Pittsburgh, PA
- "Connecting to College and Community: Recognizing One's Part of the Whole", National Collegiate Honors Council, October 2005, St. Louis
- Professional Development Series, Crown Honors Program, Spring 2005
- Professional Development Series, Crown Honors Program, Fall 2003, Spring 2004
- "Using Video Conferencing via the Internet to Connect with Clients Separated by Distance", North Atlantic Region Association of Counselor Education and Supervision, October 2003
- "Distance Counseling: A Survey of the Periodical Literature", CHS dept., SU, April 2003
- "Using the Internet to Understand Multiple Systems within the Context of an Ecological Counseling Course", co-presented; Association for Counselor Education and Supervision national convention, October 2002
- "Process and Outcome in Psychotherapy", Syracuse University, April 2002
- "Working with Groups", Career Development Facilitators Training, SU, April 2002
- "Marketing Your Liberal Arts and Sciences Education", SU, April 2002
- "Pre-Law Event for Juniors, Seniors", SU, April 2002
- "Navigating the Career World", Syracuse University, March 2002
- "Career Directions", Syracuse University, March 2002

- "Pre-Law Event for 1st and 2nd Year Students", March 2002
- "Is Grad School for Me?", Syracuse University, March 2002
- "Knowing Thyself: The Cornerstone for Developing A Great Career", SU, Feb. 2002
- "Gearing Up for the GRE's, LSAT's: Test Taking and Preparation Strategies", SU. Feb. 2002
- "Choosing A Major: Your Interests and the Options", SU, Feb. 2022
- "Cool Tech Tools for Researching Careers and Grad Schools", SU, Feb. 2002
- "Making the Most of Your Time at College", Syracuse University, Jan. 2002
- "Planning for Grad School", Syracuse University, October 2001
- "Exploring Majors and Careers", Freshman Forum class, S.U., October 2001
- "Time Management for College Students", S.U., September 2001
- "Exploring Grad School", Syracuse University, September 2001
- "Choosing a Major", Syracuse University, August 2001
- "Supporting Student Achievement", NYS clinical counselors annual conference, June 2001
- "Supporting Student Achievement", MVCC Summer Institute, May 2001
- "Alcohol and Other Drug Abuse Prevention on Campus", MVCC, Nov. 2000
- "Expressive Therapies: An Overview", MVCC, October 2000
- "Strategies for Harm Reduction", Residence Life, MVCC, August 2000
- "Helping At-Risk Students", Summer Institute, MVCC, May 2000
- "An Overview of Institutional Assessment", MVCC Summer Institute, May 2000
- "Test Taking Strategies and Dealing with Test Anxiety", MVCC, April 2000
- "Successful Study Strategies", MVCC, April 2000
- "Eating Disorders: An Overview", MVCC, April 2000
- "Effective Notetaking Strategies", MVCC, March 2000
- "Interpreting the Multiscore Depression Inventory (MDI)" MVCC, Feb.2000
- "Preparing for Transfer to Your Optimal Four-Year Schools", MVCC, Feb.2000
- "Treating the Chemically Dependent Young Person: Counseling Strategies and Interventions; New York Federation of Alcoholism Counselors and Tully Hill, Nov. 1999
- "Helping Men with Chemical Dependencies Change Their Coping Styles"; New York Federation of Alcoholism Counselors, November 1999
- "Moving Forward: Addressing Needs in Recovery"; Tully Hill, March 1999
- "Perceptions of Adolescents with Learning Disabilities"; Syracuse University, April 1998
- "Crisis Management"; Syracuse University; March 1998
- "Gender and Communication"; Syracuse University; December 1997
- "Family Systems and Alcoholism"; Syracuse University; November 1997
- "Men's Coping Styles/Men's Group"; Benjamin Rush Center; April 1997

TRAINING AND WORKSHOPS

- National Association of Fellowship Advisors, Buffalo, NY, July 2008
- National Association of Fellowship Advisors, Washington, D.C., July 2007
- Career Development Facilitators (CDF) Training, Syracuse University
- Middle Atlantic Career Counselors Association, Lancaster, Pa., October 2001
- "Videoconferencing on the Internet", Syracuse University, October 2001
- "Introduction to Flash", Syracuse University, October 2001
- "Using Video and Audio Clips with Powerpoint", Syracuse University, October 2001
- "The Value of eportfolios", Syracuse University, October 2001
- "Grant Writing and Program Development", Kenneth Corvo, SU, May 2000
- "Articulation and Partnership Agreements in the New Millennium" SUNY Upstate Medical University, March 2000
- "Counseling Special Populations", Terry McDonald, Utica College, March 2000
- "Adolescent Treatment Models", Michael Nerny, National Council on Alcoholism and Drug Dependence, October 1999
- "Meeting and Treating Adolescents Where They're At", James Goldstein, Conifer Park, October 1999
- "Forum on Training for Alcohol and Other Drug Service Providers"; Paul Caldwell, Syracuse University School of Social Work; May, Oct. 1999
- "Building Blocks for a Brighter Future: Treating Adolescent Substance Abuse; Allegheny Council on Alcoholism and Substance Abuse; April 1999
- "The Role of Counselors in the Next Millennium"; Region II Counselor's Assn.; April 1998
- "Teenage Suicide Prevention"; John Cook, Contact; March 1998
- "Managing Multiple Priorities"; Fred Pryor Associates; June 1995
- "Treatment Frameworks, Goals, & Interventions for Patients Experiencing Dissociative Identity Disorder"; Sherie Ramsgard; April 1995
- "Fundamentals of Fourth Generation Management"; Brian Joiner Associates; Nov. 1994
- "Recent Developments in the Treatment of Post-Traumatic Stress Disorder"; Dr. Denise Gelinias; November 1994
- "Non-Invasive Approaches in Treating Heart Disease"; Dr. Dean Ornish; March 1993

ADDITIONAL QUALIFICATIONS

- Proficiency and training with Cascade Content Management System, Adobe Connect, Microsoft Sharepoint, Frevvo, SPSS, Macromedia Dreamweaver MX, Fireworks MX, Flash MX, Freehand MX, Director MX, Adobe Photoshop, Adobe Premier, SONY Soundforge, Apple iMovie, iDVD, Inspiration, Microsoft Office, Microsoft Publisher, Corel Office, Windows, Flowcharting, Forms (Optical Mark Reader, OMR) software, Choices CT

- **Coursework in Research and Statistics:**

- EDP 556 and 626, Statistical Methods for Psychology and Education, I and II
- PSY 623, Psychological Research in Family Systems
- EDP 647, Statistical Thinking
- EDP 791, Advanced Quantitative Methods
- EDU 800, Research Design
- EDU 886, Multivariate Statistical Analysis