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Undergraduate College Students’ Attitudes About Internet-based Mental Health Interventions

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Undergraduate College Students’ Attitudes About Internet-based Mental Health Interventions

by

Kathleen M. Palmer

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy with a concentration in Counselor Education and Supervision
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Keywords: counseling, therapy, psychotherapy, generational, online, campus-based

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DEDICATION

This dissertation is dedicated to my husband who has supported and helped me every step of the way throughout this journey. He has made numerous sacrifices while I worked full-time, attended school full-time, and taught courses as a teaching assistant. There is no way I could have achieved this goal without his love and support. I also dedicate this dissertation to my youngest daughter who, like my son and oldest daughter, learned (the hard way) what surviving graduate school is like. She never gave up on me, even when I could not be with her as much as she (or I) wanted to be. I will be forever grateful to her, as well as my other children and husband, for supporting me throughout this journey to better all of our lives.

In addition, I dedicate this dissertation to my dear friends who did not give up on our friendship when I would go days, sometimes weeks, without returning their calls or seeing them. They understood that weeks to them were a blur to me, and that my life revolved around semesters and breaks. I particularly thank my dear friends Gwen Gold and Lynette Henry, who also successfully completed the doctoral program. I followed their lead, and they helped me find the strength I needed to keep going. Lynette fervently prayed for and with me throughout this journey, and I consider both her and Gwen earthly angels sent to me from God. Their undying belief in me carried me through this journey, which I could not have completed without them.

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myself again and develop the resilience needed for this arduous journey. I shared many laughs and tears with him, and was able to be myself without fear of being judged. He graciously shared his wisdom with me, and helped me learn how to survive and thrive in the world academia. I am proud to have been his student and can only hope to inspire and gently guide others as he has me.

I would also like to dedicate this dissertation to the rest of my committee, Dr. Carlos Zalaquett, Dr. Jeffrey Kromrey, and Dr. Tony Tan, for their consistent support, encouragement, assistance, and guidance. Throughout the past four years, I have learned invaluable skills from each of these gifted professors that I will undoubtedly use in my career as an academic and clinician. I am particularly grateful to Dr. Kromrey, my committee chair, for spearheading my dissertation journey. His zen-like demeanor and teaching style has helped me on numerous occasions. Without him, I am not sure I could have survived statistics and made it to where I am today. Each of my committee members shared their incredible knowledge and time with me, while unknowingly becoming my role models.

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ABSTRACT

Millennial-aged young adults, often referred to as “digital natives,” comprise the typical college-age population, and there has been a growing number college students at risk for mental health problems (Mowbray, Mandiberg, Stein, Kopels, Curlin, Megivern, Strauss, Collins & Lett, 2006; Eisenberg, Gollust, Golberstein & Hefner, 2007). Suicide is the second leading cause of death among college students (Suicide Statistics, 2014); however, their rate of utilizing mental health counseling is decreasing. Providing the types of mental health services college students are likely to use can mitigate factors thought to impede their use (e.g., stigma, anonymity, confidentiality), as well as help improve students’ learning and success and reduce college attrition rates.

Minimal research has been conducted on undergraduate college students’ attitudes about Internet-based mental health interventions, and the findings from those studies are conflicting. This study attempts to fill in the missing data to address undergraduate students’ attitudes about several types Internet-based of mental health counseling, and to determine the extent of their familiarity with its terminology.

Forty-two undergraduate college students participated in a survey where they were asked about their familiarity with Internet-based mental health interventions, experience with and preferences for mental health counseling, and the availability of campus-based Internet mental health interventions. Quantitative data was collected, and descriptive statistics and chi square test of independence were calculated. The students’ familiarity with Internet-based mental health interventions did not influence their use of counseling services, but they were interested in
knowing more about mental health-related cell phone apps. Other findings are discussed, conclusions are drawn, and recommendations for future study and implications for the field are included.
CHAPTER ONE:

INTRODUCTION

Background of Study

Although the mental health field has changed significantly during the past century, the method of providing mental health treatment is relatively unchanged. Clients or patients typically meet with their counselor or psychiatrist to talk about their problems, following the lead of Sigmund Freud’s “talk therapy” of the late 1800s.

Each generation learns from the previous, and this influences change for the next. Whereas, in 1908 to 1929 people communicated by using the telegraph and telegram, those in 1929 to 1949 benefited from improved telephones that did not need switchboards and also used citizen band (CB) radios. Answering machines became popular in the 1960s, as did portable phones in the 1980s and caller identification (i.e., caller ID) in the 1990s. Improved mobile or cell phones that could take pictures became popular in the 2000s, and smartphones that utilize the Internet are now the preferred choice of telecommunication. In fact, the current communication trend of using the Internet for communication may have influenced the Millennial generation’s decreased use of traditional, face-to-face talk-therapy.

The Millennial generation is comprised of individuals born between the early 1980s and the early 2000s (Howe & Strauss, 2003). J. C. Day, Janus, & Davis (2003) reported the number of households with a computer and Internet access increased during this generational timeframe from 8% to 62% between 1984 and 2003 (p. 1). The authors also indicate that by 2003, 94.7% of
children between the ages of 3 and 17 were using a computer at home, and 92% were using a computer at school.

Millennial-aged young adults comprise the typical college-age population, and there has been a growing number college students at risk for mental health problems (Mowbray et al., 2006; Eisenberg, Gollust, Golberstein, & Hefner, 2007). Additionally, suicide is the second leading cause of death among college students (Emory University, 2014). However, studies have also found that college students avoid seeking help for a number of reasons such as stigma, inhibition, perceived need for care, and/or being unsure of where to go (Eisenberg, Downs, Golberstein, & Zivin, 2009; Eisenberg, Golberstein, & Gollust, 2007; Rogers, Griffin, Wykle, & Fitzpatrick, 2009; Suler, 2004).

The National Alliance for Mental Illness (NAMI) reported 73% of the college students they surveyed had a mental health crisis while in college (Gruttadaro & Crudo, 2012). Daruwalla (2012) referred to a survey conducted by Furr, Westefeld, McConnell, and Jenkins-Marshall in 2001 in which 53% of college students reported feelings of depression after beginning college. The National College Health Assessment found “more than one in three undergraduates reported ‘feeling so depressed it was difficult to function’” (Hunt & Eisenberg, 2010, p. 4). Lindsey, Fabiano, and Stark (2009) also reported that during the 1990s and early 2000s the “number of students seeking help for depression doubled and the number of suicidal students tripled” (p. 1000).

Suicide Statistics (Emory University, 2014) reported that suicide is the third leading cause of death among the 15-24 year old age group, and the second leading cause of death among young adults between 25 and 34 years of age. In addition, the Centers for Disease Control and Prevention (CDC, 2012) reports that for each suicide, there are 100–200 suicide attempts. A.
Haas et al. (2010) reported nearly 1,100 college students die each year by suicide and that college counseling center directors consistently report, “fewer than 20% of students who die by suicide had received campus-based clinical services” (p. 15). Moreover, in a study conducted by the NAMI with 745 college students across 48 states, mental health problems (e.g., depression, bipolar disorder and posttraumatic stress disorder) contributed to a large portion of college attrition (Gruttadaro & Crudo, 2012). The study also found that of the 64% of students who were no longer attending college, 50% did not access mental health services.

Because many of these students are “digital natives,” it seems that a natural progression for them would be to seek help “online” using the Internet. Yet, while most colleges and universities offer traditional on-campus mental health services, few offer students alternative types of mental health services, such as Internet-based mental health interventions (IbMHIs). There are several Internet sites apart from universities and colleges, however, that offer mental health services online. Many of them offer self-guided programs using Cognitive-Behavior Treatment (CBT) for the management of depression and anxiety, which is the recommended treatment modality to treat depression and anxiety. However few websites offer CBT counseling services online that involve a therapist, and college and/or university websites that offer this type of service are rare. Internet-based mental health interventions could be a reasonable alternative to traditional face-to-face counseling for college students. It is cost effective, convenient, reduces stigma and inhibition, and would have the ability to integrate effective counseling methods such as CBT. Additionally, the services would be provided in an environment the students comfortably communicate in, the Internet.
Statement of the Problem

Numerous studies have demonstrated the need for mental health counseling among college students; however, the rate of college students seeking help from mental health professions is decreasing (Daruwalla, 2012). Lindsey et al. (2009) found the rate of depression and other mental health problems has increased at an alarming rate, but Ryan, Shochet, and Stallman (2010) found as college students’ level of distress increases, their likelihood of seeking help decreases. Moreover, mental health problems contribute to a large portion of college attrition (Gruttadaro & Crudo, 2012).

Limited studies have been conducted on college students’ attitudes toward IbMHIIs, and the results of those are conflicting. Neal, Campbell, Williams, Liu, and Nussbaumer (2011) found only 32% of 1,308 respondents, most of whom were between the ages of 18 and 25, would seek online mental health counseling services if they were experiencing a difficult time in life. Brown (2012) specifically addressed the attitudes of college students and their potential use of online mental health counseling, which were found to be neutral to marginally positive. Brown’s results were consistent with the findings of Rochlen, Beretvas, and Zack (2004), however Rochlen et al. did not specifically investigate the likelihood of college students using online counseling services. Rather, they studied college students’ levels of perceived value and discomfort to validate online and face-to-face attitudes’ scales. In addition, Rochlen et al.’s study was conducted almost a decade ago and only provided participants with the choice of only two counseling modalities (e.g., online or face-to-face). Conversely, Chang and Chang (2004) conducted a study that found college students did prefer traditional psychological professional help to online professional psychological help. Moreover, a pilot study (Palmer, 2013, 2014) conducted for this research found undergraduate students indicated they preferred traditional
face-to-face counseling compared to online counseling. However, the results further demonstrated participants were unclear about the terminology associated with IbMHIs, which may have influenced their responses. Therefore, it is unclear whether respondents selected answers familiar to them (e.g., face-to-face counseling) rather than those unfamiliar to them (e.g., IbMHIs).

**Significance of the Study**

As previously indicated, the rate of mental illness among college students is increasing, and their rate of utilizing mental health counseling is decreasing. It is imperative to identify the types of mental health services they are likely to use. Providing the types of mental health services college students are likely to use can mitigate factors thought to impede their use (e.g., stigma, anonymity, confidentiality), as well as help improve students’ learning and success and reduce college attrition rates.

**Purpose of the Study**

The purpose of this study is to explore Millennial-aged undergraduate college students’ attitudes about IbMHIs, and to identify the types of mental health counseling interventions they are likely to use. Additionally, the extent to which their knowledge about IbMHIs influences their likelihood of use will be explored.

**Assumptions**

There is a dearth of research regarding college students’ attitudes about IbMHIs; therefore, it is unclear why Millennial-aged college students are not using IbMHIs. Because young adults’ preferred method of communication and socialization seems to be the Internet, it would also seem that a reasonable alternative to traditional face-to-face counseling would be IbMHIs. However, IbMHIs have not been widely accepted and adopted as predicted despite their
proven benefits (e.g., anonymity, convenience, cost-effective). Therefore, a major assumption of this study is that Millennial-aged college students should be interested in IbMHIs.

Additionally, it is unclear whether prior studies considered participants might not be familiar with the terminology associated with IbMHIs. Because IbMHIs are relatively new, study participants may be responding to terminology they are familiar with, rather than making informed choices. Subsequently, the findings could be irrelevant because they did not measure what the survey intended. The Diffusion of Innovation theory indicates knowledge is a main component in the acceptance and utilization of new innovations. Millennial-aged college students might not be using IbMHIs because they do not know what they are. Therefore, a second assumption of this study is that the majority of college students are unfamiliar with or confused about terminology associated with IbMHIs, and it is influencing their likelihood of using them.

An interesting finding of the Palmer (2013) pilot study was that subsequent to preferring face-to-face counseling versus online counseling, college students indicated they were likely to use telephone or mobile counseling, as well as synchronous email counseling. Hence, a third assumption of this study is that because the Millennial generation’s primary method of using the Internet is the mobile phone, that they will indicate a preference IbMHIs that uses mobile phones, smart phones, or tablets (e.g., iPad, Samsung Note) rather than traditional desktop computers.

**Conceptual Framework**

The conceptual framework undergirding this study draws from Strauss and Howe’s generational theory (1991), E. M. Rogers’s diffusion of innovations theory (2003), and various components that comprise social network theory (M. R. Haas, 2009).
Strauss and Howe (1991) posit that generational changes influence future generations’ changes. The Internet has dramatically shaped the Millennial generation’s world, and may radically affect the types of mental health interventions they are likely to use. American society may be in a transitional period between long-standing traditional forms of mental health interventions, and more innovative ones that reflect the changes in communication technology during the past century.

E. M. Rogers’s (2003) diffusion of innovation theory knowledge posits that knowledge is the second and vital step in the diffusion process. New innovations, such as the microwave oven, provide a useful example of the diffusion process. Upon introduction of the seemingly useful technology, society did not quickly embrace it. Fears about leaking radiation, and it exploding and causing fires, significantly hindered its use. However, this appliance, which was invented in the mid-1940s, has now become a mainstay in American households. The process of the invention diffusing into American society is accounted for by the Diffusion of Innovation theory (E. M. Rogers, 2003) and, knowledge may be a factor in the lack of IbMHI use by Millennial-aged college students.

Although social network theory posits that individual attributes of people are considered to be less important than their ties with others in a network (M. R. Haas, 2009; University of Colorado, 2011, para. 2), M. R. Haas (2009) indicated “A single unified theory of social networks does not exist, rather, a number of theories have been proposed or adopted as describing or predicting the various patterns of interactions which are observed to occur,” that include strength of weak ties theory, transaction costs theory, critical mass theory, social exchange theory, semantic networks theory, and knowledge structures theory. Moreover,
additional theories that fall under those which include contagion theories, homophily theories, theories of proximity, theories of uncertainty reduction, and social support theories (p. 5).

**Figure 1.** Generational timeline.

Each generation has a unique set of characteristics, which influence subsequent generations, and there is a bidirectional influence between generational changes and society. People’s perceptions and behaviors change as generational characteristics and society changes. Advances in a variety of communication and technology innovations have occurred during the past century, particular with communication technology with the telegraph, telephone, CB’s, pagers or beepers, mobile phones, and smartphones. As advances occur in communication technology, the types people prefer to use changes, which influences subsequent generations.

However, generational and societal changes have also influenced the type of communication used in mental health counseling. Although the type of mental health intervention (i.e., face-to-face counseling) has not significantly changed during the past century,
more recent changes are occurring with the use of Internet-based types of counseling. However, the modalities of mental health counseling have changed. For example, according to Wikipedia’s Timeline of Psychology (2014n) and Timeline of Psychotherapy (2014n), Sigmund Freud’s psychoanalysis, Alfred Adler’s individual psychology, and Carl Jung’s Jungian psychology became well known in the early 1900s. In the 1950s Carl Roger’s person-centered therapy, Abraham Maslow’s humanistic psychology, and B.F. Skinner’s behavioral therapy became well-known in the 1950s. In the 1960s Albert Ellis’ Rational Emotive Behavior Therapy, Aaron Beck’s cognitive therapy, and Virgina Satir family therapy became well-known modalities. And, well-known theories by Urie Bronfenbrenner (i.e., ecological systems theory), Albert Bandura (i.e., social learning theory), and Stanislav Grof (i.e., transpersonal psychology) were introduced in the 1970s.

A pattern can be observed of generational characteristics and societal changes influencing the communication technology and mental health counseling in subsequent generations. Therefore, because of the Internet’s influence of unprecedented change in communication technology observed between 1984 and 2004, it would follow that the types of mental health modalities and interventions the Millennial generation prefers and are likely to use will change.

**Research Questions**

The following research questions will guide this inquiry.

RQ1: What types of mental health services have undergraduate college students used?

RQ2: What types of mental health interventions are undergraduate college students likely to use?

RQ3: To what extent are undergraduate college students knowledgeable about the existence of IbMHIs?
RQ4: To what extent are undergraduate students knowledgeable about terminology related to IbMHI\(s\)?

RQ5: To what extent does knowledge about the types of IbMHI\(s\) influence undergraduate students’ use of them?

**Definitions of Major Terms**

**Asynchronous.** Asynchronous communications exchanges between two or more people that “do not need to be online at the same time and because communication can occur between two parties in sporadic intervals of hours, days, or weeks” (Mallen & Vogel, 2005, p. 763).

**Blogs.** Blogs are peer-led and peer-focused interventions that are more static in nature, but “are focused on patients helping one another or expressing themselves in a largely unstructured manner that has little or no direct professional or psychological intervention…Blogging, which can be used for journaling, offers individuals a method of chronicling their thoughts and feelings online in a public or private manner” (Barak & Grohol, 2011).

**Computer-mediated communication (CMC).** CMC “implies that they [people] are in different locations and are communicating through one of several distance-communication technologies, such as asynchronous e-mail, synchronous chat, and videoconferencing” (Mallen & Vogel, 2005, p. 763).

**Diffusion of innovation theory (DOI).** The DOI is sometimes referred to as Multi-step flow theory, the DOI investigates the adoption of new ideas, products, and behaviors (University of Twente, 2014). E. M. Rogers (2003) describes diffusion as “the process by which an innovation is communicated through certain channels over time among the members of a social system” (p. 35).
**Face-to-face (F2F).** F2F communication “implies that the parties involved are physically present in the same room at the same time” (Mallen & Vogel, 2005, p. 762).

**Facebook.** Founded in 2004, this social networking website has more than 1 billion users; “Facebook’s mission is to give people the power to share and make the world more open and connected. People use Facebook to stay connected with friends and family, to discover what’s going on in the world, and to share and express what matters to them” (Facebook, 2014a).

**Google+.** Google+ is a social networking service from Google. Additionally, fans or brands and organizations create Google+ communities as a forum to discuss the things they enjoy. Communities can be used to start conversations around specific hobbies, interests, particular groups, or organizations. Pages can be created to manage businesses, products, brands, or organizations’ online presence with Google (Google, 2014a).

**Internet-based mental health interventions (IbMHIs).** These interventions can include synchronous and asynchronous emails and text messages, blogs, online bulletin boards, webcam or videoconferencing, interactive self-guided websites, online social networking communities, instant messaging, Internet chat room conversations, and mobile phones. IbMHIs are also referred to as types of NON-face-to-face mental health counseling.

**Instagram.** The social networking website states, “Instagram is a fun and quirky way to share your life with friends through a series of pictures. Snap a photo with your mobile phone, then choose a filter to transform the image into a memory to keep around forever. We’re building Instagram to allow you to experience moments in your friends’ lives through pictures as they happen. We imagine a world more connected through photos” (Instagram, 2014).
**Interactive self-guided interventions.** The interventions “most often a website, that offers an individual the opportunity to interact with a structured, self-guided software program online that steps them through a program of self-help” (Barak & Grohol, 2011, p. 157).

**Internet.** “The Internet is a global system of interconnected computer networks that use the standard Internet protocol suite (TCP/IP) to link several billion devices worldwide. It is an international network of networks that consists of millions of private, public, academic, business, and government packet switched networks, linked by a broad array of electronic, wireless, and optical networking technologies. The Internet carries an extensive range of information resources and services, such as the inter-linked hypertext documents and applications of the World Wide Web (WWW), the infrastructure to support email, and peer-to-peer networks for file sharing and telephony” (Wikipedia, 2014f).

**Listserv.** “The term Listserv (written by the registered trademark licensee, L-Soft International, Inc., as LISTSERV) has been used to refer to a few early electronic mailing list software applications, allowing a sender to send one email to the list, and then transparently sending it on to the addresses of the subscribers to the list” (Wikipedia, 2014i).

**Mobile app.** “A mobile app is a computer program designed to run on smartphones, tablet computers and other mobile devices” (Wikipedia, 2014j).

**NON-face-to-face counseling.** Type of mental health counseling that is not conducted face-to-face; otherwise known as Internet-based mental health counseling (i.e., IbMHIs).

**Online counseling.** Online counseling is also referred to as online psychotherapy, online therapy, e-therapy, Internet therapy, web-based therapy, web counseling, cybertherapy, cyber-psychology, distance counseling, and is defined as a “mental health intervention between a
patient (or a group of patients) and a therapist, using technology as the modality of communication” (Barak & Grohol, 2011). It is available in many forms (see IbMHI).

**Online support groups.** Peer-led and peer-focused interventions are interactive support groups that “are focused on patients helping one another or expressing themselves in a largely unstructured manner that has little or no direct professional or psychological intervention” (Barak & Grohol, 2011, p. 158).

**Social media.** The social interaction among people in which they create, share or exchange information and ideas in virtual communities and networks (Wikipedia, 2014k).

**Social network.** Social networks can be defined as “self-organizing, emergent, and complex, such that a globally coherent pattern appears from the local interaction of elements that make up the system,” and “A social structure made up of a set of social actors (such as individuals or organization) and a set of the dyadic ties between these actors (Wikipedia, 2014k).

**Social networking theory.** M. R. Haas (2009) states, “A single unified theory of social networks does not exist, rather, a number of theories have been proposed or adopted as describing or predicting the various patterns of interactions which are observed to occur,” that include strength of weak ties theory, transaction costs theory, critical mass theory, social exchange theory, semantic networks theory, and knowledge structures theory. Moreover, additional theories that fall under those include contagion theories, homophily theories, theories of proximity, theories of uncertainty reduction, and social support theories (p. 5). Social network theory does posit, though, that individual attributes of people are considered to be less important than their ties with others in a network (M. R. Hass, 2009; University of Colorado, 2011, para. 2).

**Synchronous.** Communications exchanges via instant messages (IM) or texting (SMS or MMS) between two or more people in real time; the parties remain “online and immediately
views the message as it appears on the screen. Once the message is viewed, a response is typed and sent back. This process repeats until one party decides to leave the conversation” (Mallen & Vogel, 2005, p. 763).

**Text messages.** Text and/or media communication exchanges between two or more people using mobile phones, computers (e.g., iMessage), and tablets (e.g., iPad)

**Twitter.** “Twitter is an online social networking service that enables users to send and read short 140-character messages called ‘tweets’. Registered users can read and post tweets, but unregistered users can only read them (Wikipedia, 2014p).

**YouTube.** “Founded in February 2005, YouTube allows billions of people to discover, watch and share originally-created videos. YouTube provides a forum for people to connect, inform, and inspire others across the globe and acts as a distribution platform for original content creators and advertisers large and small” (YouTube, 2014).

**Videocounseling.** This type of counseling is the “closest medium to traditional face-to-face counseling… and involves two people communicating with one another on computer monitors through the use of web cams” (Quarto, 2011, p. 313).

**Web-based interventions.** Primarily self-guided intervention programs that are “executed by means of a prescriptive online program operated through a website and used by consumers seeking health- and mental-health related assistance. The intervention program itself attempts to create positive change and or improve/enhance knowledge, awareness, and understanding via the provision of sound health-related material and use of interactive web-based components” (Barak, Klein, & Proudfoot, 2009, p. 5).
Scope and Delimitations of the Study

Participants in this study will be limited to undergraduate college students, which typically comprise Millennial-aged college students. Generational references used in this study refer to those identified for the United States.

Participants will include undergraduate students from public and private colleges and universities in the U.S. reporting enrollments of 40,000 students or more (combined undergraduate and graduate) in the United States according to Wikipedia’s “List of the largest United States colleges and universities by enrollment” (2014h). The universities will be selected based on the number of undergraduate students in order to increase potential participation rates. Therefore, it will not be possible to generalize the results to 2-year colleges, as well as to small 4-year universities across the U.S. An announcement of the study will be distributed to each college or university’s College of Student Affairs, and Dean of Students Office.

Additionally, it is beyond the scope of this study to examine factors that may influence the participants’ attitudes about IbMHIs, such as intention, planned behavior, and multicultural values.

Overview of Dissertation Chapters

This dissertation consists of five chapters. Chapter 1 includes an introduction to the study, statement of the problem, significance and purpose of the study, conceptual framework and research questions guiding the study. Chapter 2 includes a literature review about generational characteristics and differences as they relate to the mental health field, and the relationship between the Millennial generation, mental health, and the Internet. Chapter 3 includes the methodology of the study, study designs, and instruments to be used. Chapter 4 will include the
results, and Chapter 5 will include the discussion, conclusions, limitations, and implications of the study to the fields of mental health, counselor education, psychology, and student affairs.
CHAPTER TWO:
LITERATURE REVIEW

Generations and Mental Health

It is common for people to talk about how fast the world has changed in the last 30 years since the Internet was introduced. However, the same can be said for prior generations with other revolutionary innovations that changed the world. Henry Ford introduced the Model T automobile in 1908, and the majority of Americans had learned to drive an automobile by the 1920s (Wikipedia, 2014c, para. 13). And, less than 30 years after the invention of the telephone in 1876, more than 3,000,000 telephones were being used in the U.S. (Wikipedia, 2014e). In fact, the telephone’s importance cannot be overstated, because a decade later it connected consumers around the world to the Internet using dial-up modems. However, innovations that changed the world extend beyond communications technology. For example, stethoscopes revolutionized the medical field and changed way doctors assessed and treated medical conditions in the early 1800s, and Sigmund Freud revolutionized the way mental health problems were assessed and treated in the late 1800s. Each generation influences the next and sets the foundation for revolutionary innovations that often change the world.

Generational timelines vary according to the source, but typically differ only by a few years. Table 1 summarizes generational timelines referenced in this paper.
Table 1

*Generational Timeframes According To Source*

<table>
<thead>
<tr>
<th>Generation</th>
<th>Meet the generations</th>
<th>Strauss &amp; Howe</th>
<th>Pew research center</th>
<th>Tomorrow today (UK)</th>
<th>Boysen</th>
</tr>
</thead>
<tbody>
<tr>
<td>GI Generation</td>
<td>1901–1924</td>
<td>–1936</td>
<td>1900–1920</td>
<td>1908–1929</td>
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<td>Millenials</td>
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<td>Gen Z</td>
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<td>Generation Alpha</td>
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One of the first theorists about generations was Karl Mannheim, a German scholar who developed the sociology of knowledge theory (Wikipedia, 2014g) and authored the Theory of Generations essay in 1923 (Wikipedia, 2014m). Wolff (1993), who authored books about Karl Mannheim’s writings, stated, “Individuals who belong to the same generation, who share the same year of birth, are endowed to that extend, with a common location in the historical dimension of the social process” (p. 365). Similarly, Strauss and Howe (1991), who developed the Generation theory in the 1990s, indicated that each generation or generational cohort has distinctive characteristics and is impacted by world events and technological developments that influence societal changes. In addition the authors state, “At any given moment, members of a cohort generation can all be found in a common age bracket. They all share both a special history and a special type of personality and behavior shaped by that history (p. 437). Strauss and Howe expanded generational theory, though, and indicate generational changes are cyclical and appear
to repeat themselves every 80–90 years. Regardless, the interaction between sociocultural and generational changes are observable in a variety of contexts, such as the mental health field.

Changes in the mental health field are apparent. Twenge et al. (2010) indicate, “aspects of the sociocultural environment co-occur with shifts in reported psychopathology” (p. 146). In other words, a byproduct of this interaction is an observable change in mental health fields across generations. In fact, extensive literature and numerous textbooks have been written about psychology and counseling theories that have been developed since the advent of Sigmund Freud’s revolutionary treatment method for neuroses: psychoanalysis. Fleschner (2008) states, “To accommodate the needs of each generation, we must acknowledge the historical events and societal trends that occurred as each generation was advancing through its early developmental stages” (p. 139). Additionally, psychologist Abraham Maslow indicated that to a great extent, “a person can be explained by the nature of their needs given by their position in society” (Boysen, 2014a, para. 7).

A century has passed since Freud introduced psychoanalysis or “the talking cure”, and societal changes and people’s attitudes have influenced the field of mental health. It seems logical that the dramatic sociocultural changes, which have occurred since the introduction of the Internet, would also bring about revolutionary changes in mental health interventions. However, prior to a discussion about new mental health interventions, a discussion follows to illustrate the societal changes that occurred and the unique characteristics of each generation since the early 1900s to provide a context for their influence on the Millennial generation’s mental health and preferred mental health interventions. Throughout this document, the birth years may vary depending upon the sources cited. However, unless otherwise noted, the generational birth years referred to in this paper will reflect those identified by Boysen (2014b).
Overview of Generations

A brief overview of the generations discussed in this study is provided below, which will include a discussion of each generation’s timeframe, the unique characteristics associated with it, and societal factors that influenced the generation. The first generation discussed is the GI generation, followed by the Silent, Baby Boomers, and Millennial generations respectively.

GI Generation

The *GI Generation* represents America’s elderly population who were born between 1908 and 1929 (Boysen, 2014a) and were at least 85 years of age in 2014. Prominent figures born during this era include Walt Disney, Lucille Ball, Bob Hope, Judy Garland, Shirley Temple, and Ronald Regan (Generation Watch, n.d.). This generation was influenced by historical events such as World War I and II’s, and it is known for being civic minded and liking “predictability and stability, bringing military discipline to their homes, workplaces, school and even places of worship” (Codrington, 2008, para. 16). This generation also grew up having the ability to purchase medicines such as heroin, morphine, and marijuana in pharmacies without a prescription and when “90% of all American physicians had no university education” (Codrington, 2008, para. 16).

At the turn of the 19th century, mental illness had been categorized into seven categories (dementia, dispsomania, epilepsy, mania, melancholia, monomania (History of the DSM, n.d.a). These categories were adopted by the American Psychiatrists Association, but were revised and published in the Statistical Manual for the Use of Institutions for the Insane in 1917 by the American Psychological Association (formerly known as the American Medico-Psychological Association until 1921).
Historical events, such as World War I, influenced many changes in the mental health field. Goodyear et al. (2000) stated the first intelligence and group personality tests were developed following World War I, and “many university counseling centers were developed in response to the many returning military personnel after World War II. In addition, the authors indicate, “person-power shortages caused by the war facilitated a movement of psychologists into the provision of counseling or psychotherapy, which previously was the province of psychiatrists” (Goodyear et al., 2000, p. 609) after World War II.

Prominent mental health professionals during this time were Sigmund Freud, Alfred Adler, Carl Jung, John Watson, Alfred Binet, Ivan Pavlov, Jean Piaget, and Melanie Klein (Wikipedia, 2014n, 2014o). Psychoanalysis was the predominant therapy used to treat neurotic mental disorders during this era (Vermont Public Television, 2002), and the number of insane asylum for “lunatics” rapidly grew in number (Wikipedia, 2014d). The term “mental hygiene” was commonly used when referring to mental health care (Kraft, 2011; Vermont Public Television, 2002).

**Silent Generation**

The majority of individuals who were born between 1929 and 1949 (Boysen, 2014a) comprise the *Silent Generation* and were at least between the ages of 69 and 77 in 2014. This generation also comprises the largest lobbyist group in the U.S., American Association of Retired Persons (University of Missouri Extension, n.d). Yet, it is the smallest generation and wedged in-between two legendary generations (i.e. GI and Baby Boomer generations). It is also the only generation not to produce a president (Kaiser, 2006).

This generation lived and grew up during World War II and the Great Depression, which likely influenced their “waste not want not” mentality (University of Missouri Extension, n.d.).
This generation also fought in the Korean war. Multigrade classrooms and rote learning was the norm for this generation, and many men and women pursued college educations (Grabinski, 1998). Grabinski (1998) indicated many young adults during this era “entered the Peace Corps, and became activists and leaders in the Civil Rights Movement” (p. 75), and this generation created a surge in the helping professions of government, medicine, teaching, and ministry (Strauss & Howe, 1991, p. 285). However, the well-defined gender roles of this cohort often resulted in many women staying home to raise children while their husbands worked, and their children were ideally seen but not heard (University of Missouri Extension, n.d.). The women of this generation married and had children young (Strauss & Howe, 1991), and later spawned the highest divorce rate of any generation in the 1960s and 1970s (Kaiser, 2006). However, this generation also produced “most of the nation’s prominent feminists” (Grabinski, 1998, p. 76).

Legendary music artists such as Elvis Presley helped make the 1950s culture of doo-wop music, dance, and clothing renowned. Other prominent figures born during this era include Martin Luther King Jr., Buzz Aldrin, Queen Elizabeth II, Barabara Walters, Gloria Steinem, Woody Allen, Phil Donahue, Colin Powell, Bob Dylan, and Jane Fonda.

Confusion about psychopathology nomenclature and different classification systems for mental illness, as well as the need for post-World War II revisions, prompted a revision of the Statistical Manual for the Use of Institutions for the Insane (History of the DSM, n.d.b). The first Diagnostic Statistical Manual was published in 1952, which predominantly used the psychoanalytic-based term “reaction” throughout (History of the DSM, n.d.b). Prominent mental health professionals during this timeframe were Lev Vygotsky, B.F. Skinner, Karen Horney, Carl Rogers, Abraham Maslow, and Albert Hofmann (Wikipedia, 2014n, 2014o), and electroconvulsive therapy (ECT) and partial brain removal (i.e., lobotomy) were popular.
methods of treating mental illness (Vermont Public Television, 2002). By 1949 more than 5,000 lobotomies had been completed in the U.S. (Wikipedia, 2014d).

**Baby Boomers Generation**

The *Baby Boomers* generation is comprised of people born between the years of 1946 and 1964 (Boysen, 2014a). Baby Boomers also comprise the current middle to preretirement age population, which in 2014 were individuals between the ages of 50 and 68. The Baby Boomer generation is also the largest generation in history. This generation watched the world change at a very fast pace, and their attitudes were influenced by societal and political changes such as the Women’s Rights movement, Richard Nixon and Watergate, the Vietnam War, and assassination of John. F. Kennedy (Fleschner, 2008; University of Missouri Extension, n.d.). They thrived in the solid post-World War II economy and were determined to have a better life than their parents. They were also the first generation to grow up with a television in their home (Fleschner, 2008).

However, despite the significant wage increase young adults in the Silent generation enjoyed compared to their fathers, later born Boomers experienced a 1% income decline compared to their fathers (Strauss & Howe, 1991, p. 307). Music became synonymous with expressing their generational identity (Fleschner, 2008). For example, the Baby Boomers are renown for the now infamous Woodstock music festival in 1969, which was billed as “An Aquarian Exposition: 3 Days of Peace & Music” (Wikipedia, 2014q, para. 1), an event that exemplified the generation’s hippie subculture. Musicians such as the Beatles, the Doors, and the Beach Boys, and Motown artists helped define this generation’s music culture. Prominent figures born into this rebellious generation include Madonna, Mick Jagger, Oprah Winfrey, Donald Trump, Bill Gates, Michael Jackson, Steve Jobs, and George W. Bush (Generation Watch, n.d.; Personality Café, 2014).
However, Strauss and Howe (1991) indicated, “By almost any standard of pathology, the Boom is a generation of worsening trends” (p. 305), because the rates of death, drunk driving, suicide, illegitimate births, abortion, crime, and teen unemployment rose sharply. Professionals began deinstitutionalizing the mentally in 1954, at which time more than one-half million individuals were housed in public hospitals (Koyanagi, 2007). Mental health treatments turned toward controlling psychotic symptoms rather than curing psychosis using popular medications such as Lithium and Thorazine (Vermont Public Television, 2002). The drugs Librium and Valium were commonly prescribed for individuals with nonpsychotic anxiety (InteliHealth, 2012). It was also during this generation that behavior therapy was introduced, in order to train patients how to overcome phobias (Vermont Public Television, 2002). The first edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM) was published in 1952 (Wikipedia, 2014n, 2014o), and prominent mental health professionals of this generation were Fritz and Laura Perls, Viktor Frankl, Albert Ellis, and Benjamin Spock.

**Generation X**

Individuals born between 1964 and 1984 (Boysen, 2014a) comprise the first half of the Baby Boom generation that is known as Generation X or GenX and were between the ages of 34 and 49 in 2014. Taylor and Gao (2014) refer to this generation as America’s neglected middle child. The authors indicate this generation is overlooked, which “may be one reason they’re so often missing from stories about demographic, social and political change” (para 2). Taylor and Goa state, “GenXers are bookended by two larger generations – the Baby Boomers ahead and the Millenials behind” (para. 4), and it is small (16 years) compared with other generations (e.g., 20 years; Taylor & Gao, 2014); both of which are characteristics similar to the Silent Generation.
Nonetheless, Strauss and Howe (1991) state, “No other generation has ever grown up in families of such complexity” (p. 325), because nearly 50% of children grew up with either single or remarried parents, and half siblings or step-siblings. This generation also experienced world-changing events such as the fall of the Berlin Wall, the Challenger explosion, AIDS, Vietnam, Roe v. Wade, personal computers, and Music Television (MTV) (University of Missouri Extension, n.d.), and are, therefore, sometimes called the MTV generation (Wikipedia, 2014a). They grew up in an era where the divorce rate tripled and single parent homes became the norm. Fleschner (2008) indicates they “were born during one of the most blatantly anti-child phases in history” (Fleschner, 2008, p. 140). A poll conducted in the U.S. reported baby boomers “would rather pass on their inheritance as charity than pass it down to their children” (Wikipedia, 2013b). The Baby Boomers were permissive parents and many children were left to care for themselves, giving way to the term latchkey kids (Fleschner, 2008). Fleschner (2008) indicates this generation was “the most unsupervised generation in history … coming home to empty houses to fend for themselves” (p. 143). However, the children from this generation also grew up to be very capable, independent, self-sufficient, resourceful, and ambitious (Fleschner, 2008). Codrington and Grant-Marshall (2004) indicate their suicide rate is high, “but, against all the odds, many of similar situations, might have despaired” (p. 53). Prominent figures born into this generation are Kurt Cobain, Anna Nicole-Smith, Marilyn Manson, Lisa Marie Presley, and Jennifer Lopez.

During this generational timeframe, the second and third editions of the Diagnostic and Statistical Manual were published in 1968 and 1980 respectively (Wikipedia, 2014n, 2014o), and homosexuality was declassified as a psychiatric disorder in the DSM II in 1973 (McCommon, 2006). Prominent mental health professionals during this time were Aaron Beck, Albert Bandura,
Virginia Satir, Anna Freud, John Bowlby, Elisabeth Kubler-Ross, Masters and Johnson, and Alice Miller.

**Millennial Generation**

The children born to the latter half of the Baby Boom generation are known as the Millennial generation or *Millenials* and could be considered Generation X’s younger siblings. Although the birth years of Millennials differ according to the source, Howe and Strauss (2003) state they were born between 1982 and 2002 and were between the ages of 10 and 33 in 2014. This generation has also been referred to as *Generation Y (1980-1995) or Generation Z (1995–2010)*, although the timeframes vary considerably.

Millennials are expected to be the largest generation in American history and 33% larger than its parent generation, the Baby Boomers (Coomes & DeBard, 2004). In 2009, 47% of 18 to 24 year old Millennials were enrolled in college (Pew Research Center, 2010), and Coomes and DeBard (2004) projected it to be the most racial and multicultural diverse college generation in American history. Ten years later, research conducted by the Pew Research Center found Millennial adults “are America’s most racially diverse generation” (Pew Research Center, 2010). And, the Millennial Generation Research Review reported, “11% of Millennials have at least one immigrant parent” (U.S. Chamber of Commerce Foundation, 2012, para. 9).

Due to the increased number of births between 1983 and 2001, the Millennials have also been referred to as the *New Boomers* (Carlson, 2008). Known as the “entitlement generation” (University of Missouri Extension, n.d.), seven core traits have been identified in this generation, which have contributed to their self-perception and worldview including being special, sheltered, confident, team oriented, conventional, pressured, and high achieving (Howe & Strauss, 2003). Because Millennials have been repetitively told and shown they were special, they developed a
palpable sense of entitlement felt in educational institutions and businesses worldwide (Dorsey, 2010). They have been called “Trophy Kids,” because their mere participation in competitive sports was enough to receive a reward (Fleschner, 2008; Wikipedia, 2013b), which allowed children to feel “special” while being awarded for their effort. Parents of Millennials are sometimes referred to as “helicopter parents” (Wikipedia, 2014b), which reflects a starkly different parenting style than that of the latchkey kids in GenX. The parents of Millennials are considered to be overprotective, hovering over their children and unwilling to let go (Howe & Strauss, 2003; Fleschner, 2008). However, this may become problematic as Millennials become young adults because as Strauss and Howe (1991) indicate, “A society must resolve a social moment successfully in order to shape the coming-of-age generation as dominant; otherwise, it will shape the coming-of-age generation as recessive, unable or unwilling to take its active role with it into midlife” (p. 445). In fact, Joyce (2014), a writer for the Washington Post, published an article about the ways helicopter parents are ruining college students.

Aside from the seemingly excessive positive encouragement and reinforcement Millennials received, they also grew up with violence such as the Columbine High school shootings and the Oklahoma City bombing. Reality TV, MTV, and TV talk shows have dominated their airwaves, while portraying shouting, anger, and violence as a means to solve problems (Fleschner, 2008, p. 141).

Individuals born in the earlier years of this generation experienced historical events that include the Oklahoma City bombing, Columbine shootings, terrorism, surfacing of paparazzi and the violent death of Princess Diana, as well as the rise of the Internet (University of Missouri Extension, n.d.). Those born later experienced the 9/11 World Trade Center attack, Hurricane Katrina, the great recession, and Facebook (University of Missouri Extension, n.d.), and
prominent people born into this generation include Mark Zuckerberg, Justin Bieber, and Malala Yousafzai.

The economic downturn of the past 14 years has dramatically influenced this generation and resulted in one of the highest unemployment rate for youths. In 2012, one out of two college graduates in the U.S. were either underemployed or unemployed (Wikipedia, 2013c). This has resulted in their living at home longer than those of prior generations and appears to have earned them yet another name, the Boomerang generation. Although they try to move out and become independent, they frequently return home unable to financially support themselves due to the economy (Jayson, 2006; Wikipedia, 2013c). Not surprisingly, annual studies reported the rate of college freshman who reported “being wealthy was very important to them” was 30% higher from those of prior generations (Wikipedia, 2013c). A study conducted by Twenge et al. (2010) reported similar findings, but also reflects a pattern change among college and high school students compared to those in prior generations (Twenge et al., 2010). Twenge et al. also note that financial distress and loss are linked to anxiety and depression, and increased crime is linked to anxiety; all of which occur during economic recessions. However, other studies found the rates of depression have been increasing in preceding generations as well (Klerman & Weissman, 1989; Robins et al., 1984).

Thirty years after deinstitutionalization occurred in the 1950s, this generation saw an estimated one-third of homeless people with serious mental illnesses (Vermont Public Television, 2002). In response to the mental health crisis, the National Alliance for the Mentally Ill was founded to provide support, education, advocacy, and research services to those suffering from mental illness and their families (NAMI, 2014). New antipsychotic drugs were introduced in the 1990s that were more effective and had less adverse symptoms, and serotonin-reuptake inhibitors
(SSRI’s) were developed to treat depression (InteliHealth, 2012). Prominent mental health professionals during this timeframe are Howard Gardner and Robert Sternberg. In addition, a revision to the third edition of the Diagnostic and Statistical Manual was published in 1987 (DSM-III-R). The fourth edition of the DSM was published in 1994 and was revised in 2000 (DSM-IV-TR). The most recent edition, DSM-5, was published in 2013.

As with prior generations, the Millennial generation has experienced many societal changes and advances in technology, and is developing unique characteristics. Financial problems, as well as increased alcohol, drug, and crime rates, can result in or be impacted by stress and mental health problems. The rate of mental health problems in Millennial-aged young adults has increased, particularly among college students. The next two sections address mental illness and help seeking in Millennial-aged college students.

**Millennial-generation college students and mental illness.** The overall rates of depression, anxiety and stress have increased in college and high school students (Twenge et al., 2010). Because Millennials represent the largest number of college students, it is not surprising that the rates of mental health problems on college campuses have increased as well (Daruwalla, 2012; Kitzrow, 2003). In a study conducted by the National Alliance for Mental Illness with 745 college students across 48 states (Gruttadaro & Crudo, 2012), mental health problems (e.g., depression, bipolar disorder and posttraumatic stress disorder) were found to contribute to a large portion of college attrition. Of the 64% of students who were no longer attending college, 50% of them did not access mental health services. In addition, 73% of the students indicated they had a mental health crisis while in college.

According to Hunt and Eisenberg (2010), the National College Health Assessment stated “more than one in three undergraduates reported ‘feeling so depressed it was difficult to
function” (p. 4). However, research conducted with college students shows that as their level of distress increases, their likelihood of seeking help decreases (Ryan et al., 2010) This finding seems to support Feng and Campbell’s (2011) findings that while “over 450 million people worldwide are affected by mental, neurological or behavioural problems at any one time…as many as 50% of individuals do not get professional help for these problems (p. 102).

Suicide. Daruwalla (2012) referred to a survey conducted by Furr et al. in 2001 in which 53% of college students reported feelings of depression after beginning college. Additionally, 9% of the respondents reported having suicidal ideations, and depression is frequently a predictor for suicide. According to Lindsey et al. (2009) during the 1990s and early 2000s the rate of depression and other mental health problems increased at an alarming rate. They indicate the “number of students seeking help for depression doubled and the number of suicidal students tripled” (p. 1000).

In 2008 there were approximately 14 million college students, and suicide likely ranks second as a leading cause of death (A. Haas et al., 2010). According to the Center for Disease Control (CDC), the tenth leading cause of death for all ages is suicide, and 79% of all suicides are committed my males. Suicide is the third leading cause of death and accounts for 20% of their deaths each year among the 15–24 year old age group. Additionally, for each suicide, there are 100–200 suicide attempts (Centers for Disease Control and Prevention, 2012). A. Haas et al. (2010) reported nearly 1,100 college students die each year by suicide. They went on to say an annual study of college counseling center directors consistently report, “fewer than 20% of students who die by suicide had received campus-based clinical services” (p. 15).

Millennial-generation college students and mental health help seeking. The rate of Millennials seeking help from mental health professionals seems to be decreasing. Daruwalla
(2012) states, “While no broad statistic exists about help-seeking behaviors among the general student population, research offers mixed results about help-seeking” (p. 5). Different factors or barriers have been identified with seeking mental health services. These include financial constraints, insurance problems, concerns about providers’ credibility, anonymity, lack of knowledge about services available and/or the location of campus services, lack of availability or schedule conflicts, types of services available, gender and ethnic identity, fear of hospitalization, and the tendency of minimizing the effects due to the their high performance expectations (Eisenberg, Golberstein et al., 2007; Gruttadaro & Crudo, 2012; A. Haas et al., 2010; Neal et al., 2011; Townsend, Gearing, & Polyanskaya, 2012).

A common barrier preventing the Millennial generation from receiving mental health treatment is stigma (Eisenberg et al., 2009; Feng & Campbell, 2011; A. Haas et al., 2010; Neal et al., 2011; Postel, de Haan, & De Jong, 2008). Eisenberg et al. (2009) conducted a study on stigma and college students. Of the 5,555 students surveyed, they found that “perceived” public stigma was higher rather than personal stigma, whereas “personal stigma was significantly and negatively associated with measures of help seeking” (p. 522). Hence, helping to reduce the stigma associated with mental health illness on campuses may increase the likelihood of college students seeking mental health counseling.

Online mental health counseling, which is an alternative to traditional face-to-face counseling, could alleviate many barriers that influence the help seeking behavior of college students. The preliminary investigation conducted for this study (Palmer, 2013) found Millennial-aged undergraduate students preferred face-to-face counseling compared to other types of mental health interventions (e.g., webcam, email, telephone), However, as previously indicated, their use of traditional face-to-face mental health counseling is decreasing. One
interpretation of the results is that participants responded to familiar terms (e.g., face-to-face versus online counseling), and were unable to reflect their attitudes toward or likelihood of using other types of interventions. Therefore, further exploration is warranted to determine if knowledge about alternative types of mental health interventions would influence the likelihood college students’ would use online counseling or other IbMHIs.

The Internet

Although “the Web” turned 25 in 2014 (Pew Research Center, 2014), it could be the most influential innovation in the 20th century. In 1995 only 14% of adults in the United States used the Internet (Pew Research Center, 2014) and 42% had never heard of it; 21% knew it had something to do with computers but were unsure about it. J. C. Day et al. (2003) indicated the number of households with a computer and Internet access increased from 8% to 62% between 1984 and 2003. The authors also indicate that by 2003, 94.7% of children between the ages of 3 to 17 were using a computer at home, and 92% were using a computer at school. Between 1997 and 2011, the number of Internet users in the developed world grew exponentially from 2% to 74% (World Resources SIM Center, 2012).

In 2013 nearly 39% of the world’s population (2.8 billion) used the Internet (Internet World Stats, 2014). Of that number, 1.3 billion users were in Asia and 300 million in North America; however, North America reflected the greatest penetration with 84.9% of the population as users (Internet World Stats, 2014). These statistics reflect an overall increase of 35% from 2012 (Gross, 2013, para. 7), and a 676.3% increase worldwide between 2000 and 2014 (Internet World Stats, 2014). The greatest growth between 2000 and 2014 was in Africa, which experienced a 5,219% (Internet World Stats, 2014). Of the 15% of Americans who do not use the Internet, more than half (68%) reported it was either not relevant to them or that it was
not easy to use (Zickuhr, 2013). Based on results from a survey conducted by Princeton Survey Research Associates International in 2014, 76% of respondents indicated the Internet has been a good thing for society (Pew Research Center, 2014), and the majority indicated, “online communication has strengthened their relationships” (p. 7).

Duggan and Smith (2013b) studied cell phone Internet use and found 63% of cell phone owners use their cell phone to go online, which is up from 55% the prior year and more than double from 2009. Of those, 21% indicated they primarily use their cell phone to go online, compared to 34% who primarily go online using other devices. The authors further state that “Since 91% of Americans are cell phone owners, this means that 57% of all Americans now go online using a mobile phone” (para. 2). While Duggan and Smith (2013b) also note that the majority (85%) of “cell phone Internet users” are Millennial-age young adults between 18–29 years of age, the greatest increase was noted among Baby Boomers between 50–64 years of age.

However, despite its many benefits, these benefits may come with a high price. Kurzweil (2001) indicates that when technological history is assessed, technological change has been exponential. In fact, the author states this “exponential growth itself is growing exponentially” (para. 8). The author further states:

As exponential growth continues to accelerate into the first half of the twenty-first century, it will appear to explode into infinity, at least from the limited and linear perspective of contemporary humans. The progress will ultimately become so fast that it will rupture our ability to follow it. It will literally get out of our control. The illusion that we have our hand “on the plug,” will be dispelled. (Kurzweil, 2001, para. 19)

Regardless, when viewing Internet usage rates, technology appears to be growing exponentially. Smith (2014b) reported that 59% of people surveyed felt technological changes
would improve people’s lives in the future. The International Telecommunications Union (2014) estimates that half of the world will have Internet access by 2017, and Google’s chairman predicts the “Entire world will be online by 2020” (Gross, 2013).

Types of Internet use. The improvements in communications technology prompted increased use of the Internet, although the reasons people use the Internet varies. The Pew Research Internet Project indicates, “the internet changed the way that people got information and shared it with each other, affecting everything from users’ basic social relationships to the way that they work, learn, and take care of themselves” (Pew Research Center, 2014, para. 2). The Internet is frequently used to seek information through search engines, stream movies and music, view television shows, participate in distance learning or online courses, computer mediated communication (e.g., email, texting, blogs, bulletin boards), and socialization. Although a comprehensive review of the Internet’s uses is beyond the scope of this paper, a brief overview of the uses relevant to this research is provided below.

Information seeking. While the effects of the Internet are far reaching, its strength may lie in its ability for people to find information about almost any topic. Search engines such as Google, Yahoo and Bing have revolutionized the way people seek information about a wide array of topics in education, finance, travel, entertainment, and public health. It is no longer necessary for students to use physical libraries, card catalogs and encyclopedias to obtain information for schoolwork. In fact, Zichuhr and Rainie (2014) found the number of young adults between the ages of 16-29 who visited the library in 2012 dropped from 58% to 50% in 2013, with the largest drop among 18–24 year olds. People have the ability to obtain seemingly unlimited amounts of information in a matter of seconds from their home, local coffee shop, or wherever they can access the Internet. However, although Internet search engines seek
information from approximately 8 billion pages, it is estimated this number only represents 4% of the content on the World Wide Web (Excoffier, 2013, para. 7).

**Search engines.** Google is one of the more popular search engines, which was founded in 1996 by two students who met at Stanford University and worked out of their garage until 1999 (Google, n.d.b). Google’s search volume increased by 17,000% between 1998 and 1999 and currently averages 3.5 billion searches per day, which translates into 1.2 trillion searches per year worldwide (Internet Live Stats, 2014). Google tracks the searches on its website and compiles them into trends, such as specific mental-health related searches. For example, searches for bipolar, schizophrenia, obsessive-compulsive disorder spike during the winter season across the world, whereas locations like San Diego, where the winter seasons are milder, were less pronounced (Ayers, Althouse, Allem, Rosenquist, & Ford, 2013).

In addition, Stephens-Davidowitz (2013) found searches for “depression” were correlated with factors such as specific states in the U.S., month of the year, and day of the week (para. 3–4). For example, North Dakota produced the highest rate of depression searches; the lowest number of depression searches occurred in August; and searches for depression were the highest on Mondays and lowest on Sundays. Interestingly, though, a recent search using Google Trends demonstrates the number of “suicide” searches has decreased by 50% since 2009, yet the suicide rate among middle-aged Americans has risen sharply since 2003 (Parker-Pope, 2013, para. 1). Additionally, since 2004, California completed the fourth highest number of suicide searches in the U.S., despite the earlier fact that San Diego produced fewer searches for mental health related terms.

**Social networking and Facebook.** The Internet has revolutionized the way people communicate with their social network through the use of social media sites (e.g., Facebook,
Twitter, Skype, Instagram, YouTube). Sherchan, Nepal, and Paris (2013) reported, “there are hundreds of social networking sites operational in the World Wide Web” (p. 11), and that the phenomenal growth of social network users has not gone unnoticed (p. 2). In fact, the authors also indicate the potential use of social network platforms has been exploited by governments and enterprises for improving and delivering their services (p. 2). The power of online social networks to expand communication channels and influence behavior and public opinion is unprecedented. Duggan and Smith (2013a) found 73% of online adults used social networking sites in 2012, up from 67% in 2012, and nearly half (42%) use multiple social networking sites (para. 1). However, Facebook, with more than one billion active users, has become the preferred platform (Wikipedia, 2014j).

The first social media network (Six Degrees) was introduced in 1997, about the time Google made its debut (Ritholtz, 2010). Since that time, more popular social media sites such as MySpace, Facebook, and Twitter were introduced in 2003, 2004, and 2006 respectively (Ritholtz, 2010). But, by the first quarters of 2012, more than 800 million people worldwide were using Facebook in the first quarter of 2012 (Facebook, 2014b), of which the majority were in Europe (2.2 million), followed by Asia (1.8 million), and North America (1.7 million). The Pew Research Center (2013) found 63% of online adults visited Facebook’s site in 2012 at least one time per day, and 40% visited multiples times per day. In 2013 Facebook became the preferred social networking site among online adults (71%), followed far behind by LinkedIn (22%), Pinterest (21%), Twitter (18%), and Intagram (17%) (Duggan and Smith (2013). Of the Internet users who do not use Facebook, half reported living with someone who does (Smith, 2014a).
The Internet and the Millennial Generation

According to Greenfield and Yan (2006), the Internet is a social environment. Fox and Rainie (2014) reported as of January 2014, of the 87% of Americans that used the Internet, 97% were between the ages of 18 and 29. In addition, 89% of young adults between the ages of 18 and 29 reported using social networking sites in 2013.

The Millennial generation has been referred to as digital natives (Bennett & Maton, 2010; Hargittai, 2010), because they are the first generation that grew up with a computer in their home and with the Internet. A study conducted with 7,705 college students born between 1983 and 1992 reported 97% owned a computer and 92% multitasked while instant messaging (Wallis, 2006). However, digital natives are not new phenomenon. Bennett and Maton (2010) referred to historical amnesia when discussing claims made in the late 1950s and early 1960s about a new generation of students that was “immersed in new forms of commercial culture, such as television and popular music,” and that “Schools and the everyday lives of young people were held to be radical different” (p. 16).

However, the generational differences in preferred modes of communication (e.g., face-to-face versus quick emails or other digital messaging) between the Millennials and Baby Boomers are creating conflict in the workplace (Glass, 2007). The Millennial generation has developed “distinctly different behaviors, values and attitudes from previous generation in response to the technological and economic implications of the Internet” (Wikipedia, 2013c). In fact, a large portion of the millennial generation’s social world may only be accessible through social networking using Internet.

Prior generations sought knowledge and information in libraries, played outside on playgrounds, talked on telephones connected to the walls, and had to travel outside one’s home
to visit with others. Millennials have access to more than 250 channels on cable TV, and were influenced by technology innovators such as Bill Gates and Steve Jobs. They often use Google for information, use social networking sites to talk to friends via posts and instant messages, and “hang out” with friends using video chat software such as Skype or FaceTime.

Duggan and Smith (2013b) reported Millennial-aged young adults between 18-29 years of age comprised the majority of cell phone Internet users (85%). However, Duggan and Smith (2013b) indicated Millennials use their cell phones for others activities as well, such as text messaging (81%), e-mail (52%), downloading apps (50%), directions or other location-related services, and recommendations (49%), listening to music (48%), video chatting (21%), and location sharing (8%). Therefore, while the “telephone” is unchanged in that it allows people to talk to each other, it represents something much different to Millennials. They are able to use it for many things other than to simply talk to others, such as the Internet-based socialization and communication.

**The Internet and Mental Health Interventions**

Because the Internet is used for a variety of activities that include searching for information about various topics, it is not surprising some of these searches would pertain to various health-related problems. Several studies reported the Internet was used to find information about health, and mental health issues (Burns, Davenport, Durkin, Luscombe & Hickie, 2010; Cline & Haynes, 2001; Fox, 2013; Powell & Clarke, 2006; Rainie & Horrigan, 2002; Suzuki & Calzo, 2004; Zhao, 2009). The Internet not only has the capability to provide information and to facilitate communication, but it can be used to provide a variety of mental health services.
A wide array of websites offer information to consumers about mental health symptoms and treatments, support groups and bulletin boards for various mental health problems. In addition, individuals can access a variety of IbMHIs that include text messages, email communications, telephone counseling, and web-based counseling (Barak & Grohol, 2011). However, the Internet has also left the mental health field in a precarious state, because counseling has traditionally been conducted face-to-face. Although it is possible to conduct virtual therapy sessions via the Internet using webcams with computer software such as Skype and FaceTime, mental health interventions with less social presence appear to be more widely accepted (e.g., text messages, email, listserves, newsletters, blogs, telephone counseling, self-guided and interactive websites, online bulletin boards and online support groups, mobile applications).

Thoroughly discussing each type of IbMHI is beyond the scope of this paper. However, Barak and Grohol (2011) provide a comprehensive discussion about several types of IbMHIs in their research review that includes psychoeducational static webpages and complex, personalized, interactive cognitive-behavioral-based self-help programs, to videoconferencing, self-help support groups, blogging, and professional-led online therapy…The use of texting or short message service (SMS), mobile communications, smart phone applications, gaming, and virtual worlds extends the intervention paradigm into new environments not always previously considered as intervention opportunities. (p. 155)

Online mental health counseling, an increasing popular type of IbMHI, began appearing on the Internet as a fee-based mental health service in the mid-1990s, but it has been criticized from its start (Barak, Hen, Boniel-Nissim and Shapira, 2008; Young, 2005). The most common
type of therapy used online is cognitive behavioral therapy (CBT), which is an evidence-based approach and the treatment of choice for a variety of disorders, most notably depression and anxiety. It can be delivered through a variety of methods online such as synchronous or asynchronous via email with a therapist, instant messaging, chat rooms, or through online discussion boards. Programs such as Skype and FaceTime use webcams to visually meet with a counselor through the Internet. Several websites offer self-guided computer-based CBT (cCBT) programs with or without synchronous contact with a therapist that would be appropriate to use with college students (e.g., Beating the Blues, MoodGym, e-couch, Cope, Fearfighter). However, research suggests the inclusion of a therapist positively impacts outcomes and is therefore recommended (Barak et al., 2008; Christensen, Griffiths, Mackinnon, & Brittlifee, 2006; A. Haas et al., 2010; Postel et al., 2008).

**Inconsistent Terminology**

Depending on the source, online mental health counseling is also known as Internet therapy, computer therapy, online therapy, cybertherapy, e-therapy, telehealth, web-based therapy, and cybercounseling. There are considerable inconsistencies with regard to terms associated with IbMHIs by researchers and mental health professionals (Barak et al., 2008). Therefore, it is not surprising that consumers would be either unfamiliar with or confused about the terminology.

Ritterband and Tate (2009) stated, “A plethora of terms have been used to both categorize the related field (e.g. e-therapy, online treatment, Internet therapy, and interactive health communication), as well as the specific applications (e.g., web-based programs, Internet applications, and web systems). The programs or ‘Internet interventions,’ as they are more apt to be called, typically target behavioral or mental health problems. (p. 1). Additionally, Barak et al.
(2008) conducted a comprehensive review of Internet-based psychotherapeutic interventions and refer to various terms that have been used to describe IbMHIs which include, “etherapy (or counseling), online therapy, Internet therapy, and cybertherapy, an sometimes it is referred to as e-health or telehealth,” Furthermore, prior to beginning their article about online and face-to-face counseling, Holmes and Foster (2012) provide a brief overview of online counseling, which discussed several associated terms which include computer-mediated communication, e-mail, synchronous chat, videoconferencing, and Internet phone or telephone.

Defining it can be difficult, as there are now several countries using online mental health counseling and many have different ideas, viewpoints and terms about the concept (Andersson, 2009; Barak et al., 2009). Barak et al. (2009) attempted to define Internet-supported therapeutic interventions in their article and stated, “The field of Internet-supported therapeutic interventions has suffered from a lack of clarity and consistency,” and that “Numerous terms have been used to label and describe the activities conducted over the Internet for mental and physical health purposes: web-based therapy, e-therapy, cybertherapy, eHealth, e-Interventions, computer-mediated interventions, and online therapy (or counseling), among others” (p. 4). The authors ultimately used four categories to conceptualize Internet-supported interventions, of which often include subtypes: “web-based interventions, online counseling and therapy, Internet-operated therapeutic software, and other online activities (e.g., as supplements to face-to-face therapy)” (p. 4). Within the web-based Internet interventions category were web-based education intervention, self-help web-based therapeutic interventions, and human-supported web-based therapeutic interventions. The online counseling category included email, chat, or video-based counseling. Internet-operated therapeutic software included 3D virtual environments, gaming,
robotic simulation, and rule-based expert systems. Lastly, other online activities included online support groups, blogs, podcasts, and online assessments.

Mallen and Vogel (2005) referred to the challenge of defining the online mental health services. The authors provide definitions provided by other authors, and indicate their definition is consistent with them, as well as literature about distance-communication technologies. The authors define online counseling as,

any delivery of mental and behavioral health services, including but not limited to therapy, consultation, and psychoeducation, by a licensed practitioner to a client in a non-FtF [non-F2F] setting through distance communication technologies such as the telephone, asynchronous e-mail, synchronous chat, and videoconferencing. (p. 764)

Although the pilot study (Palmer, 2013) conducted for this research study focused on the attitudes of undergraduate college students’ about online versus face-to-face counseling, the findings revealed that more than 80% of respondents were unclear about what online counseling was or were unfamiliar with terms related to it; yet more than 90% reported being familiar with face-to-face counseling. However, because respondents also indicated they were more likely to use face-to-face counseling than online counseling, the findings suggest that the participants may have selected terms that were more familiar to them (e.g., face-to-face versus online counseling), rather than making informed choices.

Effectiveness of Internet-Based Mental Health Interventions

Although the use of IbMHIs is relatively new, empirical studies suggest online counseling (webcam counseling) is at least equally effective to traditional face-to-face counseling. For example, Barak et al. (2008) conducted a meta-analysis, which analyzed 92 studies from 69 articles that examined a total of 11,922 participants to determine the
effectiveness of different forms of online therapy. Of these, 9,764 received some type of psychological intervention online. Nearly all of the studies used CBT as the therapeutic approach. Although they found 14 studies that reported no differences in the effectiveness of Internet interventions compared to face-to-face interventions, their findings provided “strong support for the adoption of online psychological interventions as a legitimate therapeutic activity” (Barak et al., 2008, p. 110).

Andrews, Cuijpers, Craske, McEvoy, and Titov (2010) conducted a meta-analysis of 22 studies on “computer therapy.” Cognitive Behavioral Therapy was provided via the Internet as the major intervention and compared to usual treatment or control conditions. Participants met diagnostic criteria for major depressive disorder, panic disorder, and social phobia or generalized anxiety disorder. The researchers concluded participants demonstrated improvement across all four disorders, which was maintained 26 weeks later upon follow-up. The computerized CBT programs demonstrated superiority over control groups, a large effect size, good patient adherence and acceptability, and both short and long term gains. Of the 22 studies, five studies that compared computerized CBT to traditional face-to-face CBT showed the methods to be equally beneficial.

Although Barak and Grohol (2011) predicted that video-chat and videoconferencing would be increasingly used for mental health counseling, it has not been fully realized in their thorough review of alternative methods of mental health counseling. However, in a society where the majority of people use the Internet to communicate, it is puzzling why some Internet-based counseling methods have been widely accepted and adopted (e.g., texting, email, telephone counseling), while others have not (e.g., webcam counseling).
Advantages of Internet-based Mental Health Interventions

There are several benefits to using online mental health counseling including convenience, cost-effectiveness, and it is helpful for clients who are physically or geographically restricted, and research has found it to be as effective as face-to-face counseling (Barak et al., 2008). And, although concern has also been expressed about the lack of social presence affecting the therapeutic alliance, reports have indicated otherwise (S. X. Day & Schneider, 2002; Holmes & Foster, 2012).

Additionally, Internet companies have developed websites that allow counselors to pay a fee and use their HIPPA compliant platforms to provide online counseling services, but verify the counselor’s credentials before allowing them to use their services. National organizations such as the American Psychological Association, American Counseling Association, and International Society of Online Mental Health have developed ethical guidelines for the practice of online mental health counseling, and select insurance companies have begun reimbursing for online mental health counseling services.

Use of Internet-based Mental Health Interventions

The lag in adoption of online mental health counseling (OMHC) is perplexing, because web-based applications and software such as Facetime, Skype and Google+ are commonly used for personal and business communications. And, as previously stated, studies have reported good acceptance and likelihood of use for computer-based or Internet mental health counseling (Andrews et al., 2010; Proudfoot, 2004; Young, 2005).

Likelihood of use. Good acceptance and likelihood of use for computer-based or Internet mental health counseling have been reported (Andrews et al., 2010; Proudfoot, 2004; Young, 2005). Young (2005), conducted a survey with clients who were participating in mental health
counseling for Internet addiction through her online clinic, and identified reasons the clients liked (or did not like) online counseling. Although the specific age of the participants was not included, the mean ages for females and males were 48 and 44, respectively. Anonymity was reported to be the most influential factor that attracted them to online mental health counseling. Others included convenience, flexibility, physical handicaps, geographical limitations, and cost effectiveness. However, the participants also raised concerns about online mental health counseling such as confidentiality, privacy, security, and the ability for the therapist to keep actual transcripts of sessions. Similar concerns have also been identified in other studies (Eisenberg, Golberstein, et al., 2007; Eisenberg, Gollust, et al., 2007; Proudfoot, 2004). With regard to the population, though, Young pointed out the possibility of sampling bias and generalizing the results. Regardless, factors that may contribute to likelihood of use were identified.

**Lack of use.** Although researchers have suggested a lack of “social presence” accounts for the disinterest in Internet-based counseling or preference for face-to-face counseling and that it dehumanizes the therapeutic environment (Lovejoy, Demireva, Grayson and McNamara, 2009, p. 112), Rogers’ Diffusion of Innovation theory may shed some insight into the slow acceptance and use of online counseling. The theory indicates a necessary factor in the diffusion and adoption of innovations is knowledge, and it is clear that knowledge about terminology has been a problem for researchers, mental health professionals, and consumers. And, returning to Barak and Grohol’s (2011) unfulfilled prediction regarding the use of video chat and videoconferencing, unfamiliarity with, or a lack of knowledge about this type of IbMHI, could be stifling its adoption and subsequent use. Alternatively, it may be the tool or channel used for IbMHIs that is hampering its use, rather than lack of knowledge.
**Internet-based Mental Health Social Networks**

The Social Network Theory (SNT) provides information about using social networking sites as communication channels to disseminate information about interventions, as well as to facilitate Internet-based counseling (e.g., online games). However, minimal attention is currently given to Internet-based counseling methods in the media or on social networking sites. In addition, attempts by researchers and clinicians to disseminate information about webcam counseling appear to be minimal.

Centola’s (2013) discussion about SNT helped identify ways to communicate information about new products and services (i.e., weak and close ties), and their influence on behavior change as well as dissemination of information, which is critical in the diffusion process of innovations. In addition, Li, Chau, Wong, Lai, & Yip (2013) highlighted the use of social networking sites, such as Facebook, as a way to facilitate the use of IbMHIs.

Thus, the DOI framework can be used to facilitate the diffusion process, and social networking sites can serve as the communication channels needed to successfully diffuse innovations, as well as being a method of providing IbMHIs.

**The Healthy Lifestyle Network.** Centola (2013) discussed social support, or peer-to-peer interactions, in the health sector prior to reviewing *The Healthy Lifestyle Network*, which is an online social network designed to facilitate healthy lifestyles. The author indicates support groups began years ago for alcohol abstinence, grief, trauma, and weight control, and online support groups have been available since the Internet was introduced in the 1990s. For example, Listserves, such as ACOR, which is an open network for cancer patients to engage with others. However, today large companies like StayWell and Redbrick Health use online social support networks to encourage health regimen compliance, and in Internet companies such as
PatientsLikeMe, members can participate in “multiple disease-specific communities” (Centola, 2013, p. 2136). Centola also indicates these social networking sites are creating information channels across health communities, whereby allowing people to learn about new medical information and treatment technologies that are available.

In addition, Centola (2013) discussed the concept of strong and weak ties in the diffusion of information, which the case study is built upon. The strength of weak ties theory suggests that new information spreads faster among weak ties (low to no emotional bond), because those who are interpersonally closer (strong ties) tend to recirculate the same information due to similar likes/dislikes (i.e., homophily). According to Centola, “the remarkable effectiveness of nonredundant ties for accelerating the dynamics of social diffusion are the key insights behind the strength of weak ties” (p. 2139); weak ties build low-redundancy, and rapid-diffusion networks that spread information faster than strong ties that build high-redundancy, slower-diffusion networks. Networks comprised of strong-ties are referred to as clustered social networks.

However, Centola (2013) found that “for complex contagions such as behavior change, people often require multiple courses of social reinforcement before they are willing to change” (p. 2140); close ties provide this type of social reinforcement. Therefore, this complex contagion model could negate the strength of weak ties theory. Weak ties could actually slow the spread of behaviors, because social reinforcement from close ties is needed for the diffusion of behavior change. The author further states:

The spread of new products, social activism, and healthcare innovations is often a complex contagion. The more difficult, costly, or unfamiliar the behavior is, the more important social reinforcement becomes for promoting adoption. Thus, the more complex the social
contagion is, the more that successful diffusion depends on clustered triangles in the social network. (Centola, 2013, p. 2140)

Consequently, while weak ties are important in the diffusion of health-related information, it may be more effective to target clustered networks of close ties to influence health-related behavior change. Several websites have developed Internet-based social networks, which appear to appeal to consumers.

**Text2Quit.** Abroms, Boal, Simmons, Mendel, and Windsor (2014) conducted a randomized trial on this smoking cessation text messaging program for mobile phones that “sends text messages to offer advice, support, and reminders about quitting smoking” (p. 242) and includes a webportal and email support. The results found the intervention group had more than twice the likelihood of quitting compared with the control group” (p. 245), thus demonstrating the program’s effectiveness. Moreover, Comstock (2013) indicated the program had 75,000 users in 2013, two years after its launch, and indicated 32% of Text2Quit users remained smoke-free six months after the program.

**PatientsLikeMe.** The social networking site PatientsLikeMe is an online community that for patients to exchange information with each other. Frost and Massagli (2008) indicate, “the site provides customized disease-specific outcome and visualization tools to help patients understand and share information about their condition” (para. 2).

In addition, PatientsLikeMe is an online quantitative personal research platform for patients with life-changing illnesses to share their experience using patient-reported outcomes, find other patients like them matched on demographic and clinical characteristics, and learn from the aggregated data reports of others to improve their outcomes. The goal of the website is to
help patients answer the question: “Given my status, what is the best outcome I can hope to achieve, and how do I get there?”

**Future Trend – Mobile Phone Internet-based Mental Health Interventions**

In October 2014, the number of cell phone users globally exceeded the estimated world population of 7.20 billion people (*Buenos Aires Herald*, 2014). A commonly used phrase about smartphones is, “There is a app for that,” which refers to mobile applications that have been developed for nearly everything. With the dramatic growth in cell phone use, particularly among Millennial-aged young adults, it is no surprise that developers created mobile phone apps for mental health topics as well.

A search conducted in October 2014 for “mental health” in the iPhone app store resulted in 446 apps that focused on a range of issues and activities. For example, apps give users the opportunity to complete depression screenings, tests, and scales, provide hypnosis and meditation, mental workouts, quizzes, mood tracking, CBT tools for kids, journal access, addiction plans, anti-stress quotes, diagnostic tools, anxiety management, and access to online communities. In addition, game-based apps are available. Apps such as Frantic Freddy Bug Stomp, allows users to help Freddy (who is afraid of everything) face his fears by removing his straight jacket in a therapy room to squish creepy crawlers, ultimately increasing points to unlock more difficult levels.

Trudeau (2010) indicated mental health apps were “Like a ‘therapist in your pocket’,,” and are “seen as a way to bridge periodic therapy sessions—a sort of 24-hour mobile therapist that can help with everything from quitting smoking to treating anxiety to detecting relapse in psychotic disorders (para. 1). Trudeau also indicates the apps can provide useful information to
mental health professional. Clients can track their experiences and moods in between sessions, which can later be printed out and discussed during therapy.

Landau (2012) referred to smartphone apps as “surrogate therapists,” and notes mental health professions encourage their patients to use mobile apps as a way to supplement their care. The author also discusses a unique app that “makes use of a well-tested treatment for OCD called exposure and response prevention” (para. 8). The app, LiveOCDFree, touts itself as “Your Personal Pocket Therapist,” offers versions for both adults and children. In addition, the author states the app allows users to email charts to help therapists assess clients’ progress, “The user can also create an audio recording of an obsessive through to listen to on loop, in order to practice enduring it without doing a repetitive behavior” (liveocdfree.com, para. 10).

Donker et al. (2013) conducted a systematic review about mental health apps and stated, “they have the potential to be effective and may significantly improve treatment accessibility. However, the majority of apps that are currently available lack scientific evidence about their efficacy” (para. 5). Many webpages are indicating this fact; however, it is unlikely consumers will observe the disclaimers.

Godman (2014) provided an inviting slideshow of “The Best Depression iPhone & Android Apps of the Year,” but noted the apps for medical accuracy by the website unless otherwise noted. In addition, the Zur Institute maintains an impressive website, which includes a Mental Health Apps page that offers resources and updates (Zur Institute, 2015.). It is part of the Mental Health Apps, The Pocket Therapist online course. This webpage, but one of several on the website, include a table of contents that provides an extensive list of links for mental health apps categorized by mental health conditions, diagnostic categories, and populations; apps-resources for mental health professionals; apps for psychology students; online articles and
resources; making your own app; and books. However, the site’s disclaimer at the bottom of the webpage notes the “cited resources on this page were neither evaluated nor tested by the Zur Institute, LLC,” and “The inclusion of certain apps in the above list does not necessary [sic] testify to their quality or effectiveness.”

The Internet, Millennial Generation, and Mental Health

Not surprisingly, research suggests Internet use may become pathological. Morgan and Cotton (2003) conducted a study on the relationship between Internet activity, depressive symptoms, and college freshmen. They found “utilizing the Internet for communication purposes has beneficial effects on well-being among college freshmen” and can actually decrease depressive symptoms; whereas using the Internet for non-communication purposes such as gaming, shopping and research was associated with negative effects and an increase in depressive symptoms (Morgan & Cotton, 2003, p. 140). Young (2007) found higher rates of loneliness and depression in individuals “who used the Internet as little as a few hours a week,” and that “loneliness was correlated with excessive online use among college students” (p. 672). Morahan-Martin (1999) also found excessive Internet use to be correlated with loneliness and depression in college students. A study conducted in 2010 reported that Millennials have become so dependent on the Internet for socializing that “students who used social media and decided to quit showed the same withdrawal symptoms of a drug addict who quit their stimulant (Wikipedia, 2013c).

Excessive Internet Use

Excessive use of the Internet is associated with significant academic, social, familial and occupational impairment with symptoms that include hiding or lying about their behavior, psychological withdrawal, and continued use despite consequences of the behavior (Young, 2005,
Young coined the term Pathological Internet Use (PIU) at the Annual Meeting of the American Psychological Association in 1996. Although formal diagnostic criteria has not been included in the Diagnostic and Statistical Manual of Mental Disorders (DSM), characteristics of PIU are most akin to pathological gaming which was added to the most recent version published in 2013 (DSM-V). Durkee, Hadlaczky, Westerlund, and Carli (2011) provided a discussion on the definition and characteristics of PIU in their article about the Internet and suicide (p. 3941). Young (2007) indicated Internet addicts often “feel a sense of displacement when online and are unable to manage central aspects of their lives because of their growing preoccupation with online use” (p. 672). More than using the computer as a tool, they tend to use it as a means of coping with life’s problems and as psychological escape. Student attrition rates have also been associated with PIU (Tindle, 2002).

Studies have found college students to be at high risk for excessive Internet use or Internet dependence (Anderson, 2001; Morahan-Martin & Schumacher, 2000). In 2000 Morahan-Martin and Schumacher studied 277 undergraduate college students to determine the incidence and correlates of PIU. They found that 64.7% reported limited symptoms, while only 8.1% reported pathological use. These findings are contrary to the earlier studies conducted by Young (2005), which were criticized for being biased and over-representing Internet addicts. Andersson (2009) cited two additional studies that reported the number of college students who met the criteria for Internet dependence were 13% and 8% respectively.

Durkee et al. (2011) indicates suicide ideation has also been significantly correlated with PIU. The authors go on to state that pathological Internet users have a “three-to-four-fold higher risk of suicide ideation compared to non-addicted individuals” (p. 3941). In fact, research suggests that the Internet is also being used by the Millennials as a facilitator of suicide, (Lester,
In fact, a Google search using “Youtube suicide instructions” for this study returned approximately 816,000 results. Durkee et al. (2011) indicated

the Internet can encourage suicidal behaviour by its supply of descriptions of suicide methods and pro-suicide websites, wherein individuals with severe mental health problems are advised not to seek help and, at the same time, if the Internet is used properly, it can also be a key resource for helping potentially suicidal individuals. (p. 3939)

Internet-based Mental Health Interventions and Millennials

The rates of Millennials seeking help from mental health professionals seems to be decreasing. Because this generation experiences the world dramatically different than generations before them, it seems reasonable the type of mental health interventions they prefer or use will be different as well. Given their propensity to use the Internet to search for information and services, it also seems reasonable Millennials would use the Internet to obtain or participate in mental health services. However, that may not be the case. There are mixed findings about young adults and college students’ preferences about face-to-face versus online counseling.

Neal et al. (2011) conducted a survey with 1,308 students between the ages of 18 and 25 and found only 32% of respondents would seek online mental health counseling with a psychologist if they were experiencing a difficult time in life. However, Townsend et al. (2012) conducted a study that found 18 to 20 year olds were more likely to use Internet support for mental health issues than individuals 26 years of age and older.

Rochlen et al. (2004) developed instruments to measure the public’s perception of online mental health counseling after they were unable to find a systematic line of research that
examined “precisely how people perceive online counseling services in comparison with more traditional psychological support services” (p. 95). Altogether 522 undergraduate college students assisted the researchers in the validation study. While their attitudes toward online mental health counseling were at least neutral to slightly positive, they were consistently more favorable toward face-to-face mental health counseling with regard to perceived value level of discomfort. However, this study was conducted almost a decade ago and only provided participants with the choice of two online mental health counseling modalities with a therapist (i.e., e-mail or real-time chat).

Similarly, a study conducted by Chang and Chang (2004) of 109 Asian American and Asian International college students and found both groups preferred seeking traditional face-to-face professional help to online professional psychological help. Considering the high rate of stigma associated with mental illness among this population, though, it is surprising they did not prefer the anonymity of online mental health counseling. Additionally, Bradford and Rickwood (2012) surveyed 231 students between the ages of 15-19 in Australia and found the majority preferred traditional face-to-face mental health services (58.9%) over online help (16%).

In contrast, Brown (2012) specifically addressed the attitudes of college students and their potential use of online mental health counseling and reported, “participants appeared to have a neutral to marginally positive attitudes towards online counseling,” which supports earlier findings by Rochlen et al. (2004). Brown reported the use of online mental health counseling as a psychoeducational resource was considerably supported, and an interest in its use for social anxiety was expressed, as well. A noteworthy finding in the Brown’s study, however, was that participants conceptualized the value of online mental health counseling and face-to-face mental health counseling differently. Brown pointed out, though, that this finding could be related to a
difference of wording in the measures used to compare the two. The author went on to state that “client control” and “disinhibition” are incorporated into the Online Counseling Attitudes Scale (OCAS) but are not in the Face-to-Face Counseling Attitudes Scale (FCAS).

Given the Millennial generation’s propensity toward using the Internet for information, communication and socialization, using it for IBMHIs would be a natural progression. In addition, because it is a cost-effective, convenient, anonymous, and flexible way to provide and receive mental health services, it could address several barriers previously identified (Andrews et al., 2010; Christensen, Griffiths, & Jorm, 2004; A. Haas et al., 2010; Maples & Han, 2008; Proudfoot, 2004; Rochlen et al., 2004; Townsend et al., 2012; Young, 2005).

Summary

Numerous societal and technological changes have occurred during the past century, many of which were significantly influenced by technology, such as the Internet. These changes have influenced generational characteristics, although each generation has influenced the next. This chapter discussed five generations from 20th century (e.g., GI, Silent, Baby Boomers, Generation X, and Millennial) to highlight their generational differences as they relate to the mental health field, as well as the Internet as it relates to the Millennial generation and mental health.
CHAPTER THREE:  
METHODS  
The purpose of this study was to explore the attitudes of undergraduate college students about Internet-based mental health interventions. Chapter 3 presents the research design, participants, instrument, procedures used in this study. Additionally, a brief discussion of the Palmer (2013) pilot study used for this study will be presented.  

Research Questions  
The following questions were explored during this study:  
1. What types of mental health services have undergraduate college students used?  
2. What types of mental health interventions are undergraduate college students likely to use?  
3. To what extent are undergraduate college students knowledgeable about the existence of Internet-based mental health interventions?  
4. To what extent are undergraduate students knowledgeable about terminology related to Internet-based mental health interventions?  
5. To what extent does familiarity about the types of Internet-based mental health interventions influence undergraduate students’ use of them?  

Research Design  
A quantitative research design was used for this exploratory study, and a descriptive statistical approach was used to summarize the data (i.e., frequency counts and percentages). This investigator developed a web-based survey instrument based upon an extensive literature
review and the findings from Palmer (2013) pilot study in order to explore the attitudes of undergraduate college students’ about Internet-based mental health interventions (IbMHI).

**Participants**

Participants were recruited from three convenience sources of undergraduate students. Two of the sources included students enrolled in undergraduate courses taught by instructors affiliated with the University of South Florida \((N = 208)\), and the third source included undergraduate students participating in five TRIO programs throughout Florida \((N = 830)\). The estimated convenience sample size for this study was 1,038 undergraduate students, and the target sample size was 100 undergraduate students.

The U.S. Department of Education TRIO programs are “targeted to serve and assist low-income individuals, first-generation college students, and individuals with disabilities to progress through the academic pipeline from middle school to post-baccalaureate programs” (U.S. Department of Education, 2015). All of the five TRIO program administrators agreed to distribute the survey; however, one program required IRB approval through their university and was eliminated from the sample due to of the time constraints. The four remaining TRIO program administrators distributed recruitment emails, but the low number of participants prompted a second request for participation.

**Instrument**

There are several instruments that measure various aspects of the online counseling experience. These include the following: Online Counseling Attitudes Scale; Client Attitude Questionnaire; client satisfaction and outcomes (Client Satisfaction Survey); expectations of (Expectations of Video Counseling Questionnaire); value of (Value of Online Counseling); and experiences with online or videocounseling (Videocounseling Study Questionnaire). However,
instruments that specifically address the attitudes of Millennial-age undergraduate college students about IbMHIs [other than online or videocounseling] could not be located.

Therefore, based upon the results of a literature search for instruments that measure the attitudes of college students about IbMHIs, as well as the Palmer (2013) pilot study’s findings discussed below, I constructed a web-based survey instrument designed to measure undergraduate college students’ attitudes about IbMHIs. The survey was administered online via Survey Monkey, and the participants responded to 24 multiple choice and five-point Likert scale questions. The time required to complete the survey was between 5-10 minutes, depending upon participants’ responses.

**Pilot Study**

As previously stated, instruments that specifically addresses the attitudes of Millennial-age undergraduate college students about IbMHIs other than online or videocounseling could not be located. Therefore, I constructed a web-based survey instrument for this study’s preliminary investigation (Palmer, 2013) that explored undergraduate college students’ preference for individual face-to-face counseling versus online mental health counseling. A convenience sample of 41 undergraduate college students’ completed an online survey of up to 26 questions, depending on their responses, that explored their attitudes about face-to-face versus online counseling. The majority (79%) of participants who had not participated in mental health counseling reported a preference for face-to-face counseling. However, these results could be misleading, because the majority of participants (80%) also indicated they were unfamiliar with terminology relating to online counseling, and more than 90% were familiar with the term face-to-face counseling. As a result, it is unclear whether participants stated their preference based on terms with which they were familiar, or whether lack of knowledge influenced their stated...
preferences. Additionally, more than 75% of the students indicated they were NOT likely to use online mental health counseling in the future. The inconsistent findings in the Palmer (2013) pilot study strongly influenced the research and survey questions for the current study.

Survey Questions

The survey (see Appendix B) is divided into four sections. Section 1 includes five demographic questions for purposes of group comparisons (e.g., gender, age, year in college, college standing, city and state of college). Section 2 includes four questions about the participants’ familiarity with, and likelihood of using, specific types of Internet-based mental health counseling. Section 3 includes seven questions about the participants’ mental health counseling experience(s). Section 4 includes six questions about Internet-based mental health counseling at participants’ college or university campus counseling center.

Several revisions were made to the survey subsequent to pre and post testing, which included removing a brief video clip that quickly described the IbMHIs presented in the survey, reducing the number of questions in the survey on more than one occasion by grouping the questions into sections and reducing the number of possible responses for several questions. The survey was ultimately reduced from 39 to 24 questions, grouped into four sections, and minor revisions to question wording and formatting were completed subsequent to further pre and post testing.

Internal Consistency and Content Validity

Three undergraduate college students completed the survey on two different occasions within a one-week timespan in order to establish the internal consistency and content validity of the survey. Due to lack of response agreement across the two administrations, an analysis was
conducted on the individual survey questions, which resulted in the revision of Questions 9, and 11.

Question 10 asked participants’ about the types of concerns they have regarding non-face-to-face mental health counseling, and it was the only question none of the participants demonstrated agreement with across administrations. The question was initially placed in the familiarity section to identify possible response inconsistencies with two subsequent questions in the mental health counseling participation section. However, rather than deleting Question 10, Question 9 was revised to ask if the participants have concerns. If participants responded “yes” they were forwarded to Question 10 to identify their concern(s). Participants who responded “no” to Question 9 were forwarded to Question 11.

Question 11, which is also in the “familiarity” section, initially asked about the types of NON-face-to-face counseling participants would prefer using. This question was also revised, since the participants previously indicated their lack of familiarity with the terms in Question 8. As a result, the participants could not make an informed choice about the types of NON-face-to-face counseling because they reported being unfamiliar with the terms.

Moreover, students were asked to provide feedback about the wording and clarity of questions and response choices, the number and organization of questions, the relevance of the study’s questions to its purpose, and their overall impression of the survey’s appearance and time commitment. The feedback was mostly positive, with the exception of not being able to leave a comment in the “other” field of one question and two spelling errors. Each student indicated the survey was easy to navigate and was aesthetically nice. One student indicated it took less time than expected, and all of the students indicated the survey questions were relevant to the study’s purpose. Their suggestions included minor grammatical changes in survey questions and
correcting a question’s formatting so that participants could add comments in the “other” section if desired.

**Procedures**

After approval was received from the University of South Florida International Review Board (IRB), participants were recruited from three convenience sources of undergraduate students. Two of the sources included students enrolled in undergraduate courses taught by instructors affiliated with the University of South Florida, and the third source included undergraduate students participating in five TRIO programs throughout Florida. The U.S. Department of Education TRIO programs are “targeted to serve and assist low-income individuals, first-generation college students, and individuals with disabilities to progress through the academic pipeline from middle school to post-baccalaureate programs (Federal TRIO Programs, 2015). All of the five TRIO program administrators agreed to distribute the survey; however, one program required IRB approval through their university and was eliminated from the sample due to time constraints. The four remaining TRIO program administrators distributed recruitment emails.

The email invited undergraduate students in their programs to participate in the study and contained a weblink that redirected them to the Survey Monkey website in order to complete the online survey. Participants were first asked to review the informed consent at the beginning of the web-based survey, at which time they could voluntarily choose to participate in the survey or decline by selecting either the “agree” or “disagree” button. Participants were given the opportunity to withdraw from the study at any time without penalty. Subsequent to providing consent to participate in the study, participants completed the 24-item web-based survey. The
time required to complete the survey varies between five and ten minutes, depending upon the participants’ responses.

Upon completion of the survey, participants were given the opportunity to enter a raffle to receive one of four gift cards (i.e., $50 Visa gift card, $50 Amazon gift card, $25 Target gift card, and a $25 iTunes gift card) by clicking a link that redirected them to a different Survey Monkey webpage. Participants were informed that they were not be required to participate in the drawing, that their contact information would not be linked to their survey responses, and that the contact information they provided would not be sold, shared, or distributed to third parties. Of the 42 participants who completed the survey, ten (24%) chose to enter their contact information from which four participants were randomly selected to win gift cards. The four winners were notified via email, at which time their mailing addresses were confirmed for gift card distribution. Gift cards were sent through USPS with delivery confirmation at no cost to the participants.

**Data-Analysis Plan**

A quantitative research design was used in this exploratory study. The data were collected and initially analyzed using Survey Monkey’s online tool, which performed descriptive statistics (i.e., frequencies, means, medians, and standard deviations). Further analyses were conducted using a chi-square test of independence to determine if participants’ familiarity with IbMHIs was correlated with their use of counseling.

**Summary**

Chapter 3 presented a description of the research design, participants, instrument, procedures used in this study. A brief discussion of the Palmer (2013) pilot study used for this
study, as well as a brief discussion regarding adjustments to the recruitment methods and sample size, were presented as well.
CHAPTER FOUR:

RESULTS

This chapter presents the results of data collection. The data will be presented in two sections. The first section presents a descriptive analysis of the demographic data. The second section provides the descriptive analysis of the data as it pertains to the research questions. Tables and Figures are typically presented during each research question’s discussion.

Participant Demographics

The convenience sample size for this study was 1,038 undergraduate students, and the target sample size was 100 undergraduate students. After seven weeks of recruitment attempts for this study, 42 students completed the study. The resultant 4.3% response rate for this survey is considerably lower than expected and significantly lower than those reported in research studies. Manfreda, Bosnjak, Berzelak, Haas, and Vehovar (2008) conducted a meta-analysis of web survey response rates and reported 19% to 43% web mode response rates. However, the authors also point out the response rates for online surveys are typically 11% lower than other modes (i.e., postal surveys, telephone surveys). Moreover, and Munoz-Leiva, Sanchez-Fernandez, Montoro-Rios, and Ibanez-Zapata (2010) report that response rates for online surveys have continued to decline since the 1990s, at which time they were near 50%.

A total of 45 participants began the survey; however, one participant withdrew following the consent page, a second participant withdrew after completing the demographic questions, and a third withdrew after completing the majority of the survey. Of the 42 participants who completed the survey, 71% (n = 30) were female and 29% (n = 12) were male. The age range of
the participants was 18 to 54 years of age. The majority of participants \((n = 10)\) were 19 years of age, and 54\% of the participants were between 18 and 25 years of age. The majority of participants were in their first two years of college \((n = 35; 83\%)\), and all participants attended a college in the state of Florida. Table 2 provides a distribution of participant demographics, Figure 2 displays participant age groups, and Table 3 provides a distribution of participant ages.

Table 2

*Participant Demographics*

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>(N)</th>
<th>%</th>
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<td></td>
</tr>
<tr>
<td>Female</td>
<td>30</td>
<td>71</td>
</tr>
<tr>
<td>Male</td>
<td>12</td>
<td>29</td>
</tr>
<tr>
<td>Year in college</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st</td>
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<td>40</td>
</tr>
<tr>
<td>2nd</td>
<td>17</td>
<td>40</td>
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<td>3rd</td>
<td>6</td>
<td>14</td>
</tr>
<tr>
<td>4th</td>
<td>1</td>
<td>2</td>
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<tr>
<td>5th or more</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Location of college</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Florida</td>
<td>42</td>
<td>100</td>
</tr>
</tbody>
</table>

*Figure 2.* Participant age groups.
Table 3

Participant Ages

<table>
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<tr>
<th>Age</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
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<td>4</td>
<td>10</td>
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<tr>
<td>19</td>
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<td>24</td>
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<tr>
<td>20</td>
<td>4</td>
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<td>1</td>
<td>2</td>
</tr>
<tr>
<td>54</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Research Questions

Research Question 1

What types of mental health services have undergraduate college students used?

Five survey questions were used to answer Research Question 1 (i.e., Questions 12, 13, 14, 20, and 22). Of the 42 students who participated in this survey, 16 (38%) indicated they have used mental health counseling. Of those 16 participants, 15 (94%) used individual face-to-face mental health counseling, and 3 (19%) used individual NON-face-to-face mental health counseling. In addition, one participant used NON-face-to-face mental health counseling at their campus-based counseling center. With regard to group counseling, 7 (44%) out of the 16 participants who indicated they have used mental health counseling reported using group face-to-
face counseling. None of the 16 participants used group NON-face-to-face counseling. Figure 3 provides a summary of the types of counseling used, and Table 4 provides a breakdown of counseling and non-counseling users according to age.

![Figure 3. Types of counseling used.](image)

*Note.* Participants could select more than one type of mental health counseling used; therefore, the data does not represent the total number of participants who used counseling (*n* = 16), but rather the total number of participants who used each particular type of counseling.

### Table 4

*Ages of Counseling Users and Non-Users*

<table>
<thead>
<tr>
<th>Age range</th>
<th>Counseling user (<em>n</em> = 16)</th>
<th>%</th>
<th>Non-counseling user (<em>n</em> = 26)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>51–69</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>35–50</td>
<td>3</td>
<td>19</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>24–24</td>
<td>7</td>
<td>44</td>
<td>7</td>
<td>27</td>
</tr>
<tr>
<td>17–23</td>
<td>6</td>
<td>38</td>
<td>17</td>
<td>65</td>
</tr>
</tbody>
</table>

Of the 16 participants who used counseling, 11 participants (69%) indicated they sought it because of depression, and 11 participants (69%) sought it for anxiety. See Figure 4 for a summary of reasons participants sought mental health counseling. Moreover, the majority of the 16 participants who used counseling (*n* = 12; 75%) reported seeking counseling for more than
one reason. See Figure 5 for the number of reasons each participant has sought counseling. However, it is unknown whether they presented with more than one reason at the time they sought counseling or across different points in time, or if they experienced any of the reasons but did not seek help for them.

Identifying clinically significant reasons are important, because depression is frequently a predictor for suicide (Furr et al., 2001), and suicide is the second leading cause of death for college students. College students, particularly first year students, may misinterpret feelings of excessive stress and anxiety as typical or “normal” for college students. In addition, anxiety is highly correlated with depression. The number of participants in this study who sought counseling for depression and anxiety were double that of the remaining reasons.

Figure 4. Reasons for seeking counseling among counseling users.
Note. Participants may have sought mental health counseling for more than one reason; therefore, the data does not represent the total number of participants who sought counseling, but rather the number of participants who reported seeking counseling for each reason.
Figure 5. Number of reasons for seeking counseling per participant.

Note. Participants may have sought mental health counseling for more than one reason; therefore, the data does not represent the total number of participants who sought counseling, but rather the total number of reasons each participant sought counseling.

Research Question 2

What types of mental health interventions are undergraduate college students likely to use?

Several questions in the survey addressed Research Question 2. First, Question 15 asked the counseling non-users if they had considered seeking mental health counseling. If they did, Question 16 explored the types of counseling they considered, and Question 17 explored the reasons they considered counseling. Question 18 asked all participants which type of mental health counseling they would prefer (i.e., individual face-to-face, individual NON-face-to-face, group face-to-face, group NON-face-to-face, other, or none). Lastly, Question 21 asked the participants \( n = 41 \) who did not know if their campus-based counseling center offered Internet-based mental health interventions (IbMHIs) whether they would use them if they were available.

Because the majority of the 16 participants \( n = 12; 75\% \) who used individual face-to-face counseling also reported their level of satisfaction as “satisfied” to “very satisfied”, it is
reasonable to assume they are likely to use that type of counseling again if they seek counseling. Of those 16 participants, 11 (69%) reported using counseling for depression, and 11 (69%) reported using it for anxiety.

Of the 26 participants who had not used mental health counseling, 7 (27%) considered using counseling. The type of counseling those 7 participants considered using was individual face-to-face counseling, and one participant also considered group face-to-face counseling. None of the 7 participants considered NON-face-to-face counseling (i.e., IbMHIs). In addition, 5 of those 7 participants (71%) indicated they considered using counseling for depression. Figure 6 displays a summary of the reasons non-counseling users considered using counseling, and Table 5 summarizes the reasons for either seeking or considering counseling among counseling and non-counseling users.

![Diagram](image)

**Figure 6.** Reasons for considering counseling among non-counseling users.

*Note.* Participants may consider seeking mental health counseling for more than one reason; therefore, the data does not represent the total number of participants who considered counseling, but rather the number of participants who reported considering counseling for each reason.
Table 5

*Reasons For Seeking or Considering Counseling Among Counseling and Non-Counseling Users*

<table>
<thead>
<tr>
<th>Reason</th>
<th>Counseling users (n = 16)</th>
<th>Non-counseling users who considered using counseling (n = 7)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Depression</td>
<td>11</td>
<td>69</td>
</tr>
<tr>
<td>Anxiety</td>
<td>11</td>
<td>69</td>
</tr>
<tr>
<td>Death of a loved one</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Family Problems</td>
<td>4</td>
<td>25</td>
</tr>
<tr>
<td>Relationship issues</td>
<td>5</td>
<td>31</td>
</tr>
<tr>
<td>Suicidal thoughts</td>
<td>6</td>
<td>38</td>
</tr>
<tr>
<td>Suicidal behaviors</td>
<td>3</td>
<td>19</td>
</tr>
<tr>
<td>Substance use, abuse or dependence</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>19</td>
</tr>
<tr>
<td>Financial</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Job related</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Major life change</td>
<td>5</td>
<td>31</td>
</tr>
<tr>
<td>Court ordered</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*Note.* Participants may seek or consider seeking mental health counseling for more than one reason. Of the 26 non-counseling users, 7 considered using counseling.

Another type of counseling sometimes offered through campus counseling centers is IbMHIIs. However, all but one participant (n = 41; 98%) did not know whether their campus counseling center offered IbMHIIs. Of those 41 participants, the majority (n = 25; 61%) indicated they were not likely to use NON-face-to-face mental health counseling if it were available through their campus counseling center. Of the 41 participants, 9 (22%) indicated they would consider using NON-face-to-face counseling, while 7 (17%) indicated they might consider using it. Of those 16 participants who indicated they would or would consider using NON-face-to-face counseling, 11 (69%) indicated they were very likely to likely to use email counseling, and 10 (63%) were very likely to likely to use cell or telephone counseling.
These findings are consistent with the Palmer (2013) pilot study findings. Participants in the Palmer (2013) pilot study who previously participated in counseling indicated they were moderately to very likely to participate in telephone counseling \((n = 22; 57\%)\) and email counseling \((n = 22; 43\% \text{ email})\). Participants who had not participated in counseling indicated they would be moderately to very likely to participate in face-to-face counseling, followed by telephone counseling \((n = 19; 37\%)\) and email counseling \((n = 19; 32\%)\).

The majority of participants in this study reported being unlikely to very unlikely to use campus-based online counseling using webcams \((n = 8; 48\%)\) or virtual reality (i.e., Second Life) \((n = 7; 41\%)\), which is also consistent with the results of the Palmer (2013) pilot study. The majority of all participants in the Palmer (2013) pilot study indicated they were least likely to use online counseling using a webcam \((n = 41; 78\%)\) or virtual reality counseling (e.g., Second Life) \((n = 41; 92\%)\).

Overall, the majority of participants in this study indicated their preferred type of mental health counseling would be individual face-to-face \((n = 37; 88\%)\), while only 3 participants \((7\%)\) reported “none” as their preferred type. In addition, one participant reported a preference for group face-to-face, one preferred group NON-face-to-face, and none of the participants selected individual NON-face-to-face counseling.

**Research Question 3**

To what extent are undergraduate college students knowledgeable about the existence of Internet-based mental health interventions (IbMHIs)?

Survey questions 11 and 19 addressed Research Question 3. Nearly all of the participants \((n = 1; 98\%)\) indicated they did not know whether their campus-based counseling center offered any type of NON-face-to-face mental health counseling services. However, because participants
were not asked to provide the name of their college, it is impossible to determine whether their colleges do offer IbMHIs, or whether the services were marketed to promote exposure. Another method of determining participants’ knowledge about the existence of IbMHIs is by determining participants’ familiarity with them, which is addressed in Research Question 4.

**Research Question 4**

To what extent are undergraduate students knowledgeable about terminology related to Internet-based mental health interventions (IbMHIs)?

Survey questions 8, 9, and 10 addressed Research Question 4 by exploring participants’ familiarity with terminology and concerns about IbMHIs. A common problem with IbMHIs is terminology, because of the significant inconsistency of terms; several different terms are used to describe the same or similar interventions (Barak et al., 2008; Ritterband & Tate, 2009). For example, online counseling, web-cam counseling, web-based counseling, Internet counseling, and cybercounseling all refer to the same type of counseling. Not surprisingly, participants’ unfamiliarity ratings of those five terms differed. In fact, overall participants were more unfamiliar than familiar with each of the 17 types of IbMHIs presented in the Question 8.

To determine overall familiarity, participants’ responses to Question 8 were used to create two groups: familiar and not familiar. The participants’ responses to Question 8 were summarized according to the number of IbMHIs they were familiar with. For example, a participant could be familiar with 10 out of 17 types of IbMHIs. Participants’ with more “familiar” and “very familiar” responses were categorized as “familiar” ($n = 13$), and participants with more “not familiar” and “not familiar at all” responses were categorized as “unfamiliar” ($n = 27$). Two participants reported a majority of “neither familiar or unfamiliar” responses. Figure 7 and Table 6 provide summaries of the participants’ familiarity with IbMHI terminology.
Figure 7. Familiarity with IbMHI types.
Note. Participants with the majority of “neither familiar or unfamiliar” responses (n = 2) were excluded.
### Table 6

**Participant Familiarity With Each Type of Internet-Based Mental Health Interventions**

<table>
<thead>
<tr>
<th>IbMHI</th>
<th>Very familiar to familiar (n = 13)</th>
<th>%</th>
<th>Neither familiar or unfamiliar (n = 2)</th>
<th>%</th>
<th>Not familiar to not familiar at all (n = 27)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone counseling</td>
<td>10</td>
<td>24</td>
<td>8</td>
<td>19</td>
<td>24</td>
<td>57</td>
</tr>
<tr>
<td>Mental health-related cell phone apps</td>
<td>7</td>
<td>17</td>
<td>7</td>
<td>17</td>
<td>28</td>
<td>67</td>
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<td>Email counseling</td>
<td>6</td>
<td>14</td>
<td>7</td>
<td>17</td>
<td>29</td>
<td>69</td>
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<td>Text message counseling</td>
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<td>Instant messaging counseling</td>
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<td>Web-cam counseling</td>
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<td>4</td>
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<td>10</td>
<td>23</td>
<td>55</td>
</tr>
<tr>
<td>Cybercounseling</td>
<td>10</td>
<td>24</td>
<td>3</td>
<td>7</td>
<td>29</td>
<td>69</td>
</tr>
<tr>
<td>Virtual reality (e.g., Second Life)</td>
<td>7</td>
<td>17</td>
<td>5</td>
<td>12</td>
<td>30</td>
<td>71</td>
</tr>
<tr>
<td>Support groups (online)</td>
<td>17</td>
<td>40</td>
<td>6</td>
<td>14</td>
<td>19</td>
<td>45</td>
</tr>
<tr>
<td>Online mental health community (members only)</td>
<td>9</td>
<td>21</td>
<td>6</td>
<td>14</td>
<td>27</td>
<td>64</td>
</tr>
<tr>
<td>Peer mentoring (online)</td>
<td>13</td>
<td>31</td>
<td>7</td>
<td>17</td>
<td>22</td>
<td>52</td>
</tr>
<tr>
<td>Blogs</td>
<td>14</td>
<td>33</td>
<td>5</td>
<td>12</td>
<td>23</td>
<td>55</td>
</tr>
</tbody>
</table>

Interesting, although the majority of participants \(n = 27\) were unfamiliar with IbMHI terminology, the majority of participants \(n = 24; 57\%\) also indicated they do not have concerns about using IbMHIs. Of the 18 participants who did express concerns, nearly all \(n = 17; 94\%\) were concerned about not knowing who is on the other side, as well as that they could not confirm the therapist is legitimate \(n = 17; 94\%\). Other highly rated concerns included not having used it before \(n = 14; 78\%\) and not knowing anyone who has used it \(n = 14; 78\%\). Figure 8 displays a summary of participants’ concerns about IbMHIs.
Concerns About Using IbMHIs.

Note. Participants were able to select more than one concern.

Additionally, all of the participants (n = 42) were provided with the opportunity to indicate the types of NON-face-to-face mental health counseling they would like to know more about, because it might indicate future use. Almost a third of the participants (n = 12; 29%) indicated they did not want to know more about any type of IbMHI. However, nearly half of the participants (n = 17; 40%) indicated they would like to know more about mental health-related cell phone apps, which are a type of IbMHI (n = 17; 40%). Figure 9 and Table 7 provide summaries of IbMHIs that participants would like to know more about, and Table 8 provides a summary of the participants who indicated they would like to know more about cell phone apps according to age and use of counseling.
Figure 9. Types of Internet-based mental health interventions participants would like to know more about.

*Note.* Participants were able to select more than one type of IbMHI.
Table 7

Internet-Based Mental Health Interventions Participants Would Like to Know More About

<table>
<thead>
<tr>
<th>IbMHI type</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone counseling</td>
<td>21</td>
</tr>
<tr>
<td>Mental health-related cell phone apps</td>
<td>40</td>
</tr>
<tr>
<td>Email counseling</td>
<td>12</td>
</tr>
<tr>
<td>Text message counseling</td>
<td>19</td>
</tr>
<tr>
<td>Instant messaging counseling</td>
<td>14</td>
</tr>
<tr>
<td>Online counseling</td>
<td>17</td>
</tr>
<tr>
<td>Web-cam counseling</td>
<td>19</td>
</tr>
<tr>
<td>Video-chat</td>
<td>24</td>
</tr>
<tr>
<td>Video-conferencing</td>
<td>1</td>
</tr>
<tr>
<td>Internet counseling</td>
<td>5</td>
</tr>
<tr>
<td>Cybercounseling</td>
<td>12</td>
</tr>
<tr>
<td>Virtual reality (e.g., Second Life)</td>
<td>14</td>
</tr>
<tr>
<td>Support groups (online)</td>
<td>29</td>
</tr>
<tr>
<td>Online mental health community (members only)</td>
<td>10</td>
</tr>
<tr>
<td>Peer mentoring (online)</td>
<td>14</td>
</tr>
<tr>
<td>Blogs</td>
<td>17</td>
</tr>
<tr>
<td>None of the above</td>
<td>29</td>
</tr>
</tbody>
</table>

Note: Participants could select more than one type of IbMHI.

Table 8

Would Like To Know More About Mental Health-Related Cell Phone Apps

<table>
<thead>
<tr>
<th>Age range</th>
<th>N</th>
<th>Counseling user</th>
<th>Non-counseling user</th>
</tr>
</thead>
<tbody>
<tr>
<td>51–69</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>35–50</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>24–34</td>
<td>5</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>17–23</td>
<td>10</td>
<td>3</td>
<td>7</td>
</tr>
</tbody>
</table>

Note: Totals represent participants who indicated they would like to know more about mental health-related cell phone apps (n = 17) and do not represent the total number of participants who used or considered counseling.
Research Question 5

To what extent does familiarity about the types of Internet-based mental health interventions (IbMHIs) influence undergraduate students’ use of them?

In response to Research Question 5, data from survey Question 8, which explored the participants’ familiarity with IbMHIs, and Question 12, which asked about participants’ use of counseling, were analyzed to determine whether familiarity with IbMHIs influenced participants’ use counseling.

To determine overall familiarity, participants’ responses to Question 8 were used to create two groups: familiar and not familiar. The participants’ responses to Question 8 were summarized according to the number of IbMHIs they were familiar with. For example, a participant could be familiar with 10 out of 17 types of IbMHIs. Participants’ with more “familiar” and “very familiar” responses were categorized as “familiar” \( (n = 13) \). Participants with more “not familiar” and “not familiar at all” responses were categorized as “unfamiliar” \( (n = 27) \). Two participants reported a majority of “neither familiar or unfamiliar” responses and were excluded from the group summaries in Table 9.

Likewise, participants’ responses to Question 12 were used to create two groups: use and not use. Participants who reported using counseling were categorized as “use” \( (n = 16) \) and participants who reported not using counseling were categorized as “not use” \( (n = 24) \). For consistency, the two participant responses excluded from the familiarity group summaries were also excluded from the counseling use group summaries in Table 9.

Subsequently, the data from Questions 8 and 12 were categorized into four groups: (a) participants who were familiar with IbMHIs and used counseling, (b) participants who were familiar with IbMHIs and have not used counseling, (c) participants who were unfamiliar with
IbMHIs and have used counseling, and (d) participants who were unfamiliar with IbMHIs and have not used counseling. The group data was entered into a 2 x 2 contingency table and analyzed using a chi-square test of independence to examine the correlation between participant familiarities and counseling use. The relationship between these groups was not significant, $x^2 (df = 1, N = 40) = 0.019, p = 0.4452$. Therefore, familiarity about the types of IbMHIs was not found to influence undergraduate students’ use of counseling. Table 9 provides a summary of the data in a 2 x 2 contingency table.

Table 9

<table>
<thead>
<tr>
<th></th>
<th>Familiar</th>
<th>Not Familiar</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use</td>
<td>5</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>Not Use</td>
<td>8</td>
<td>16</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>27</td>
<td>40</td>
</tr>
</tbody>
</table>

*Note:* Two participants’ majority were “neither familiar or unfamiliar” and were excluded from the group data; therefore, $N = 40$.

**Summary**

This study was conducted to explore the undergraduate college students’ attitudes about IbMHIs. Of the 45 participants who began the survey, 42 completed the survey’s 24 questions. Demographic information of the participants was provided in this chapter, as well as analyses of the data collected.
CHAPTER FIVE:
DISCUSSION

Young adults between the ages of 18 and 23 comprise the typical college-age population, and there has been a growing number college students at risk for mental health problems (Eisenberg, Gollust, et al., 2007; Mowbray et al., 2006). However, college students’ rate of utilizing mental health counseling is decreasing, and suicide is the second leading cause of death among college students (Emory University, 2014). Therefore, it is imperative the types of mental health services they are likely to use are identified, because they will likely mitigate factors thought to impede their use (e.g., stigma, anonymity, confidentiality). As college students’ use of counseling increases, mental health problems can be reduced. Additionally, students’ learning and success will be improved, and college attrition rates related mental health issues will be reduced.

However, identifying the types of mental health services college students will use has been challenging. Changes in technology have profoundly changed the ways a young adult communicates, which has likely influenced their decreased use of face-to-face mental health counseling. Therefore, it would follow that new types of mental health services need to be developed that will appeal to undergraduate college students to increase their use of counseling.

Young adults between the ages of 18 and 23 are referred to as Millennials or “digital natives,” because they typically grew up with a computer in their home. As technology developed, so did their ability to perform computer-like activities on computer-like items, such as mobile phones. Young adults comprise the majority of cell phone users who primarily use
their cell phone to access the Internet, and mobile phones appear to be their preferred method of communicating. In fact, it is not uncommon to see two young adults texting each other while sitting next to one another. Because mental health counseling involves interpersonal communication, and young adults’ preferred method of interpersonal communication is using mobile phones and the Internet, it is likely they would use IbMHI’s that are accessible through mobile phones. Moreover, IbMHI’s could reduce or eliminate factors that may impede their use of mental health counseling, particularly for sensitive or stigmatized issues such as suicide.

However, research about college students’ attitudes related to IbMHI’s has been significantly impacted by the presumption that they are familiar with IbMHI terminology. If college students are not familiar with the terminology, it makes sense they would select answers they are more familiar with, even if they do not accurately express their opinion. For example, a question may ask, “Which type of counseling would you prefer … 1) Face-to-face or 2) online counseling?” If the participants do not know what online counseling is, and it is the only other choice besides face-to-face counseling, they are likely to select the term they are more familiar with. After all, for the majority of participants, the question could be hypothetical if they have not used, or have any intention of using, mental health counseling. Subsequently, although the outcomes may show that students prefer face-to-face counseling, the results would be invalid if the students were making uneducated decisions. Moreover, subsequent program development and institution of services based on the results would be pointless, because students still may not use the services after becoming familiar with them.

Research suggests college students prefer individual face-to-face counseling but their rates of counseling use are decreasing; therefore, something is amiss. Are college students uninterested in mental health counseling altogether, or with the types of counseling they are
familiar with? The majority of students in this study were unfamiliar with IbMHIs, have not participated in counseling, and indicated they would not use IbMHIs if they were available through their campus-based counseling center. Interestingly, despite the majority of students being unfamiliar with IbMHI’s, they did not report concerns about using IbMHIs. And, nearly a third did not want to know more about IbMHIs. However, the findings from this study also suggest college students are uninterested in IbMHI’s while indicating they would like to know more about mental health-related cell phone apps, which is a type of IbMHI. Therefore, the question remains, “What type(s) of mental health interventions are undergraduate college students likely use?” Other findings from this study, which are similar to those found in the Palmer (2013) pilot study, may provide an answer to that question.

In the Palmer (2013) pilot study, college students’ who have and have not participated in counseling indicated their overall preferred type of counseling is face-to-face, followed by telephone/mobile phone counseling and email counseling. Of the 19 (54%) participants who have participated in counseling, 7 (37%) indicated they were moderately to very likely to participate in telephone counseling, 5 (26%) were moderately to very likely to participate in counseling via mobile phone, and 6 (32%) were moderately to very likely to participate in counseling via email with a therapist. Similarly, of the 21 participants who have not participated in counseling, 12 (57%) indicated they were moderately to very likely to participate in telephone counseling, 11 (52%) were moderately to very likely to participate in counseling via mobile phone, and 9 (43%) indicated were moderately to very likely to participate in counseling via email. Therefore, the results suggest undergraduate college students are likely to use cell phones for counseling.
This study further explored those preferences and presented students with an option to select mobile/cell phone apps. Not surprisingly, nearly half of this study’s participants \((n = 17; 40\%)\) indicated they would like to know more about mental health-related cell phone apps. And of those 17 participants, the majority \((n = 15; 88\%)\) was between the ages of 17 and 34. Interestingly, although mental health-related cell phone apps are one type of IbMHI, nearly a third of participants in this study indicated they did not want to know more about IbMHI. The conflicting results further support the influence of terminology familiarity on study outcomes.

Regardless, the findings from this study suggest cell phone apps may be a type of mental health counseling undergraduate college students are likely to use, particularly if cell phone use is an indicator. As previously discussed, 91% of Americans are cell phone users, nearly 85% of Americans use the Internet, and 63% of cell phone users use their cell phone to go online. And, the majority of Internet users who primarily use their cell phones to go online, are young adults between 18 and 29 years of age. Moreover, 89% of cell phone users media time was spent using mobile apps, rather than through the mobile web (Bosomworth, 2015). A commonly used phrase is, “there’s an app for that,” which means a mobile app has likely been developed for everything. In May 2015, Android and iPhone cell phone users could select from approximately 1.5 million apps. A search for iPhone “mental health” apps in May 2015 returned 528 results, and a search for iPhone apps related to “suicide” returned 173 results. Moreover, a search for “suicide” on YouTube, which is also available as a cell phone app, returned more than 5,000,000 videos to view.

Not only are young adults interested in cell phone apps, but there is also a plethora of information available about mental health and suicide via cell phone apps. Additionally, the large numbers of apps reflect a strong interest in the topics of mental health and suicide. The results
from this study support this interest, because depression was the highest rated reason participants either used or considered counseling. And, as previously indicated, depression is a strong predictor for suicide.

Mental health apps have been referred to as a “therapist in your pocket,” “surrogate therapists,” and “personal pocket therapists.” They are convenient, can be used in privacy of one’s own home, and can be accessed at students’ convenience 24-hours a day. It is highly likely cell phone apps would be an attractive alternative to face-to-face counseling for undergraduate college students. Among many other things, mental health-related cell phone apps would provide college students with opportunities to seek, schedule, and participate in treatment for a variety of mental health problems that could easily lead to more serious mental health problems. Additionally, it would provide students with confidential and anonymous place to discuss serious and stigmatized mental health issues, such as suicide, that they might not seek help for otherwise.

Conclusions

The majority of participants in this study reported a preference for face-to-face counseling, but were unfamiliar with terminology related to IbMHIs and had not participated in counseling. Moreover, nearly a third of participants did not want to know more about IbMHIs but did want to know more mental health-related cell phone apps, which are a type of IbMHI. The conflicting results further support the influence of terminology familiarity on study outcomes.

Undergraduate college students, particularly first year students, experience an array of stressor and may not be equipped with the coping skills needed to navigate their new challenges. Moreover, they may mistakenly think excessive stress is “normal” for college students and may attempt to manage the symptoms in unhealthy ways. When stress increases, students are at great
risk for depression, which is frequently a predictor for suicide. Additionally, they are susceptible to anxiety and self-medicating behaviors to alleviate symptoms of depression and anxiety.

Excessive use of drugs and alcohol can develop into more serious issues that students may prefer to ignore or deny. Or, it is not uncommon for serious mental health issues, such as schizophrenia, to manifest in young adulthood. Students may be uncomfortable or afraid to disclose symptoms they are experiencing, but need someone to talk with or somewhere to seek help. Without a place to comfortably seek help, students might feel helpless and hopeless, and turn to drastic measures to cope with the associated emotional pain, such as suicide. However, many of these problems could be mitigated with early treatment.

Suicide statistics among college students are staggering. One out of 10 college students has made a plan to commit suicide, and more than 1,000 students commit suicide on college campuses every year. White males under the age of 21 are at greatest risk for suicide ideation and attempts. It is imperative types of mental health interventions college students are likely to use are identified. Cell phone mental health apps may be an appealing option for students to cope with stress, anxiety, depression, and harmful behaviors.

Therefore, it would behoove colleges and universities to further explore and implement IbMHI’s. Many types of IbMHIs use cognitive behavioral activities or therapy, which is an effective and evidence-based treatment for depression and anxiety. In particular, cell phone apps could serve as gatekeepers that would link students to campus counseling services. Also, the app could be linked directly to a 24-hour crises or information hot line for students seek help whenever they are feeling emotional discomfort. Information about the app could be distributed to incoming and transfer students, as well as marketed through brief in-class presentations. The app could be presented as a resource to obtain information ranging from ways to cope with stress
and anxiety associated with the college experience, to learning about and managing mental health issues. Offering a campus-based cell phone app would be a proactive approach to providing mental health interventions college students are likely to use.

**Limitations**

Several limitations were identified in this study and are discussed below.

**Sample Size**

Perhaps the most significant limitation was the sample size. Without the data needed to conduct appropriate analyses, it is difficult to adequately address the study’s research questions. As a result, findings are not representative of the undergraduate college student population and, therefore, cannot be generalized. In addition, due to recruitment difficulties, all of the participants attended colleges in Florida, which further impedes generalization.

**Participant Demographics**

Web-based surveys may produce a biased sample, because the characteristics of individuals who participate in web-based surveys may differ from those who do not (Sanchez-Fernandez, Munoz-Leiva, and Montoro-Rios, 2012). Moreover, there can be an assumption that Millennials are more likely to respond to web-based surveys because of their propensity to use, and comfort level with, the Internet. However, Petchenik and Watermolen (2011) conducted a nine-month study in 2009 with 16,560 graduate students that yielded a 2% response rate. Therefore, factors related to age, academic level, program of study, and survey type could have influenced the survey response rate of this survey.

**Self-Report Surveys**

In general, questions that require self-reported responses run the risk of inflation or deflation by participants. In other words, participants may intentionally or unintentionally inflate
or deflate their symptoms or problems by selecting the answer that best reflects their perception of their symptoms and problems, rather than reporting a professional diagnosis of their symptoms and problems. Therefore, it is possible the participants’ responses were either inflated or deflated, thus impacting the accuracy of Questions 14 and 17.

In addition, participants’ may have selected an incorrect “reason” for their symptoms or problems. In other words, their symptoms should be categorized in a different category. For example, one participant selected “other” and indicated dysthymia. Although a professional diagnosis could be given to that diagnosis, it is a type of depression and would not be considered “other.” Another participant reported seeking counseling for PTSD (Post traumatic stress disorder), which is often associated with depression and/or anxiety. Although the reason was correctly differentiated from depression or anxiety, the participant could have also selected depression and anxiety in addition to adding PTSD, to make sure all potential reasons were selected. Regardless, the importance of collecting reasons for seeking counseling cannot be overstated, because depression is highly correlated with suicide, and anxiety is highly correlated with depression. In addition, the majority of participants in this study reported either considering or seeking counseling for reasons of depression.

Furthermore, social desirability could have influenced students’ responses to questions. In other words, they may have selected answers to questions they believed would be more viewed more favorable by others. Considering the age group and environment, it is interesting that none of the participants indicated they sought or considered counseling for substance use, dependence, or abuse. Additionally, students may not want to acknowledge they have a problem with alcohol or drugs, particularly if “everyone is doing it,” or if it has become an ineffective behavior they have adopted to manage issues such as stress, loneliness, depression, or anxiety.
Survey Questions

Research Question 3 of this study asked, “To what extent are undergraduate college students knowledgeable about the existence of IbMHIs?” However, all participants were not asked about their knowledge regarding the “existence” of IbMHIs, but rather their familiarity with them. However, all participants were asked whether their campus-based counseling center offered IbMHIs, which would demonstrate knowledge about the existence of IbMHIs in a particular context. The participants’ responses about the existence of IbMHIs could be misinterpreted, because “not familiar at all” does not necessarily mean participants were not aware of their existence. In other words, participants could be aware of IbMHIs but not familiar with them.

Additionally, participants who reported using mental health counseling were not asked if they were likely to use it again. Rather, their likelihood of use was inferred based on their level of satisfaction. In other words, if participants were satisfied, it was presumed they were likely to use counseling again. Moreover, participants who indicated they had not participated in counseling were also not asked if they were likely to use it in the future. However, participants were asked about the likelihood of participating in campus-based IbMHIs if they were available, and all participants were asked about their overall preferred type of mental health counseling.

Suggestions for Future Research

Repeating this survey with a larger sample size would provide greater insight into the attitudes of undergraduate college students. Although limited, the responses do indicate they are not utilizing mental health counseling services, and they are not likely to use IbMHIs. It is worth investigating whether undergraduate college students’ use of mental health counseling would
increase after becoming more familiar with the different types of IbMHIs. However, it is first necessary to familiarize students with the types of mental health counseling available.

Additionally, exploring ways to increase college student participation in web-based surveys is warranted. Sanchez-Fernandez et al. (2012) found the use of incentives, such as prize drawings, were not found to improve web-based survey retention rates. This finding supports the low rate of respondents that entered the raffle drawing after completing the survey (N = 10; 24%). This was an unexpected finding, because I presumed offering several (i.e., four) monetary incentives would increase participate rate. However, it is unknown whether the response rate would have been lower without the use of incentives.

Moreover, different ways to disseminate information about the counseling types should be explored, such as providing brief in-class presentations to students about the different types of counseling available. These presentations could include brief videos of student testimonials and overviews of the different counseling types, as well as focus on factors to contribute to academic success (e.g., managing stress, adjustment process for first year and transfer students) rather than focus on “mental health” or “mental illness.” Additionally, identifying ways faculty could incorporate the presentation in their courses would increase the number of students that become familiar with the mental health counseling types.

Lastly, the findings of this study and the Palmer (2013) pilot study warrant further research about the use of mental health-related cell phone apps. And, because nearly a third of participants (29%; n = 12) indicated they would like to know more about online support groups, it would be reasonable to explore the use of social media as a venue for IbMHIs.
Implications for the Field

Although mental health counseling has traditionally been a face-to-face service, the mental health field’s use of the Internet is rapidly increasing, which is changing the way mental health services are being delivered. In fact, organizations and licensing boards appear to be struggling to keep up with the demand, development of ethical guidelines, and reciprocity problem across state and country borders.

Moreover, because of the interpersonal nature of mental health counseling, counselor education has been conducted face-to-face in the classroom. It may be necessary to include formal counselor education training that involves IbMHIs, even if only to increase their knowledge about its history, current challenges (e.g., HIPPA guidelines), and how the different types are conducted to stay abreast of the rapid changes in the field. Undoubtedly the development and use of IbMHIs will continue to increase, and it is important the new generation of counselors is prepared so they can successfully conduct the services if desired, be aware of the legal and ethical problems currently associated with providing the services, and educate their clients about, or refer their clients to counselors who offer the services.

Additionally, because nearly all of the participants (98%; n = 41) indicated they did not know if their campus-based counseling center offered any type of NON-face-to-face mental health counseling services, it is vital that colleges offering campus-based counseling services promote or market them to their students.
REFERENCES


APPENDICES
Appendix A: Survey

College Students' Attitudes About Internet-based Mental Health

INFORMED CONSENT TO PARTICIPATE IN RESEARCH

Information to Consider Before Taking Part in this Research Study
IRB Study # Pro00020119

Researchers at the University of South Florida (USF) study many topics. To do this, we need the help of people who agree to take part in a research study. This form tells you about this research study. We are asking you to take part in a research study that is called: Millennial Generation Undergraduate College Students. The person who is in charge of this research study is Kathleen Palmer. This person is called the Principal Investigator. She is being guided in this research by Herbert Exum, Ph.D.

PURPOSE OF THE STUDY
You are being asked to participate because you are an undergraduate college student. The purpose of this study is to investigate Millennials generational undergraduate college students’ familiarity with, attitudes about, and likelihood of using Internet-based Mental Health Intervention’s (IbMHI’s). Additionally, the relationship between familiarity and likelihood of using IbMHI’s will be explored.

STUDY PROCEDURES
If you take part in this study, you will be asked to complete a brief (5-10 minute) web-based questionnaire via Survey Monkey. The data is collected anonymously. The survey does not contain information that will personally identify participants, and information such as IP addresses will not be tracked or recorded.

ALTERNATIVES/VOLUNTARY PARTICIPATION/WITHDRAWAL
You have the alternative to choose not to participate in this research study. You should only take part in this study if you want to volunteer; you are free to participate in this research or withdraw at any time. There will be no penalty if you stop taking part in this study; however, completion the survey is required to enter the raffle drawing.

BENEFITS and RISKS
Participants may not receive direct benefit from taking part in this research study. This research is considered to be minimal risk, and it is unlikely participants will experience any more risk(s) completing the survey questionnaire than they would in a normal day of life.

COMPENSATION
In exchange for participation, you will have the opportunity to enter a raffle for one of four gift cards upon completion of the survey (i.e., $50 Visa gift card, $50 Amazon gift card, $25 Target gift card, and a $25 iTunes gift card). You are not required to participate in the drawing. Your contact information will not be linked to your survey responses, and the contact information you provide will not be sold, shared, or distributed to third parties.

PRIVACY & CONFIDENTIALITY
We must keep your study records as confidential as possible. It is possible, although unlikely, that unauthorized individuals could gain access to your responses because you are responding online.

However, certain people may need to see your study records. By law, anyone who looks at your records must keep them completely confidential. The only people who will be allowed to see these records are: Principal Investigator, research team, advising professor, and the University of South Florida Institutional Review Board (IRB).
**College Students’ Attitudes About Internet-based Mental Health**

It is possible, although unlikely, that unauthorized individuals could gain access to your responses. Confidentiality will be maintained to the degree permitted by the technology used. No guarantees can be made regarding the interception of data sent via the Internet. However, your participation in this online survey involves risks similar to a person’s everyday use of the Internet. If you complete and submit an anonymous survey and later request your data be withdrawn, this may or may not be possible as the researcher may be unable to extract anonymous data from the database.

**CONTACT INFORMATION**

If you have any questions please contact the USF IRB at 974-5638 or the Principal Investigator at 813-974-3515.

We may publish what we learn from this study. If we do, we will not let anyone know your name. We will not publish anything else that would let people know who you are. You can print a copy of this consent form for your records.

1. I freely give my consent to take part in this study. I understand that by proceeding with this survey that I am agreeing to take part in research and I am 18 years of age or older.
   - I agree

Section I. The following section will ask you general questions about your gender, age, and college level, standing, and state location. By obtaining this information we are able to group participants’ responses and identify patterns or relationships in the survey data.

2. What is your gender?
   - Female
   - Male
   - Other (please specify)

3. What is your age?

4. What year are you in college?
   - 1st year
   - 2nd year
   - 3rd year
   - 4th year
   - 5th year or more
5. Select your college standing

- Undergraduate (Bachelor’s degree)
- Graduate (Master’s degree, or higher)

6. What is the location of your college or university?
   
   City/Town: ____________________________
   State: ________________________________

7. For the remainder of the survey, the following terms will be used:

   "Counseling" will pertain to mental health counseling (this does NOT include academic counseling or advising, peer or faculty mentoring)

   "Mental health counseling" refers to counseling with a therapist, counselor, or psychologist; participating in therapy; getting help from a therapist, counselor, or psychologist; receiving mental health services or interventions. This does NOT refer to any type of medical treatment, such as you would receive with a psychiatrist.

   "Face-to-face" counseling refers to counseling that is conducted face-to-face in the same room either individually with a therapist, counselor, or psychologist, or in a group setting.

   "NON-face-to-face" counseling refers to counseling that is NOT conducted face-to-face in the same room with either individually with a therapist, counselor, or psychologist, or in a group setting. This type of counseling is typically conducted via the Internet or telephone with a therapist, counselor, or psychologist.

Click next once you are familiar with these terms and are ready to begin the survey.

- Next
College Students' Attitudes About Internet-based Mental Health

Section II. This next section is very important, because it will help us learn about your familiarity with, and likelihood of using, new types of Internet-based mental health counseling.

*8. Indicate your familiarity level about the following types of NON-face-to-face mental health counseling

<table>
<thead>
<tr>
<th></th>
<th>Very familiar</th>
<th>Familiar or unfamiliar</th>
<th>Not familiar</th>
<th>Not familiar at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone counseling</td>
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<tr>
<td>Mental health-related cell phone apps</td>
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<tr>
<td>Email counseling</td>
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<tr>
<td>Text message counseling</td>
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<tr>
<td>Instant messaging counseling</td>
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<tr>
<td>Online counseling</td>
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<tr>
<td>Web-cam counseling</td>
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<tr>
<td>Web-based counseling</td>
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<tr>
<td>Video-chat</td>
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<tr>
<td>Video-conferencing</td>
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<tr>
<td>Internet counseling</td>
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<td></td>
</tr>
<tr>
<td>Cybercounseling</td>
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<tr>
<td>Virtual reality (e.g., Second Life)</td>
<td></td>
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<tr>
<td>Support Groups (online)</td>
<td></td>
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<tr>
<td>Online mental health community (members only)</td>
<td></td>
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<tr>
<td>Peer mentoring (online)</td>
<td></td>
<td></td>
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<tr>
<td>Blogs</td>
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</tr>
</tbody>
</table>

*9. Do you have concerns about using NON-face-to-face mental health counseling?

- Yes
- No
10. Which of the following describe your concern(s) about participating in NON-face-to-face mental health counseling? (select all that apply)

- Afraid
- Do not have enough information about it
- Heard negative things about it
- Confidentiality
- Not sure who is on the other side
- Not sure can trust the therapist
- Cannot confirm therapist is legitimate
- Unfamiliar with it
- Have not used it before
- Do not know anyone who has used it
- Insurance would not cover it
- Legal concerns
- Worried about paying someone online
- I do not have any concerns

Other (please specify)
College Students' Attitudes About Internet-based Mental Health

11. Which of the following types of NON-face-to-face mental health counseling would you like to know more about? (select all that apply)

- Telephone counseling
- Mental health-related cell phone apps
- Email counseling
- Text message counseling
- Instant messaging counseling
- Online counseling
- Web-cam counseling
- Web-based counseling
- Video-chat
- Video-conferencing
- Internet counseling
- Cybercounseling
- Virtual reality (e.g., Second Life)
- Support Groups (online)
- Online mental health community (members only)
- Peer mentoring (online)
- Blogs
- None of the above

Section III. The next few questions will briefly ask you about your mental health counseling experience(s). This information will help us learn about the types of counseling undergraduate college students have used and/or are likely to use.

12. Have you ever participated in any type of mental health counseling?

- Yes
- No
*13. Select the types of mental health counseling you have participated in and your level of satisfaction

<table>
<thead>
<tr>
<th></th>
<th>Very satisfied</th>
<th>Satisfied or dissatisfied</th>
<th>Very dissatisfied</th>
<th>Never used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual face-to-face</td>
<td>☐</td>
<td>☐</td>
<td>✗</td>
<td>☐</td>
</tr>
<tr>
<td>Individual NON-face-to-face</td>
<td>☐</td>
<td>☐</td>
<td>✗</td>
<td>☐</td>
</tr>
<tr>
<td>Group face-to-face</td>
<td>☐</td>
<td>☐</td>
<td>✗</td>
<td>☐</td>
</tr>
<tr>
<td>Group NON-face-to-face</td>
<td>☐</td>
<td>☐</td>
<td>✗</td>
<td>☐</td>
</tr>
</tbody>
</table>

*14. Indicate the reasons for which you have sought mental health counseling (select all that apply)

☐ Depression
☐ Anxiety
☐ Death of a loved one
☐ Family problems
☐ Relationship issues
☐ Suicidal thoughts
☐ Suicidal behaviors
☐ Financial
☐ Job related
☐ Major life change (e.g., lost job, divorce, empty-nest)
☐ Substance use, abuse, dependence
☐ Court ordered (e.g., probation)
☐ Other (please specify)

*15. Have you ever considered participating in mental health counseling?

☐ Yes
☐ No
**College Students' Attitudes About Internet-based Mental Health**

*16. Indicate which type(s) of mental health counseling you have considered (select all that apply)*

- Individual face-to-face
- Individual NON-face-to-face
- Group face-to-face
- Group NON-face-to-face

*17. Indicate the reasons for which you considered seeking mental health counseling (select all that apply)*

- Depression
- Anxiety
- Death of a loved one
- Family problems
- Relationship issues
- Suicidal thoughts
- Suicidal behaviors
- Financial
- Job related
- Major life change (e.g., lost job, divorce, empty-nest)
- Substance use, abuse, dependence
- Court ordered (e.g., probation)
- Other (please specify)

*18. In general, which of the following would be your preferred type of mental health counseling?*

- Individual face-to-face
- Individual NON-face-to-face
- Group face-to-face
- Group NON-face-to-face
- None
College Students’ Attitudes About Internet-based Mental Health

Section IV. You are almost done! This last section of the survey will ask you a few questions about Internet-based mental health counseling at your college or university campus counseling center. After you complete it, you will have an opportunity to complete the gift card drawing entry form!

*19. Does your campus-based counseling center offer any type of NON-face-to-face mental health counseling service(s)?
   ☐ Yes
   ☐ No
   ☐ I don’t know

*20. Have you participated in mental health counseling through your campus counseling center?
   ☐ Yes
   ☐ No

*21. Would you consider using NON-face-to-face types of mental health counseling through your campus counseling center if it were available?
   ☐ Yes
   ☐ No
   ☐ Maybe (specify below)

(please specify)
**College Students' Attitudes About Internet-based Mental Health**

**22.** Indicate the which of the following types of NON-face-to-face types of mental health counseling you used at your campus counseling center and your level of satisfaction for each.

<table>
<thead>
<tr>
<th></th>
<th>Very satisfied</th>
<th>Satisfied</th>
<th>Neither satisfied or unsatisfied</th>
<th>Not satisfied</th>
<th>Never used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online counseling using webcam</td>
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<td>Email</td>
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<td>Texting</td>
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<td>Instant messaging</td>
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<td>Cell or telephone calls</td>
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<td>Online support group</td>
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<tr>
<td>Virtual reality (e.g., Second Life)</td>
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<tr>
<td>Other (please specify)</td>
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</tbody>
</table>

**23.** Indicate the likelihood you would use the following types of NON-face-to-face types of mental health counseling at your campus counseling center in the future.

<table>
<thead>
<tr>
<th></th>
<th>Very likely</th>
<th>Likely</th>
<th>Neither likely or unlikely</th>
<th>Not likely</th>
<th>Would not use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online counseling using webcam</td>
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<td>Email</td>
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<td>Virtual reality (e.g., Second Life)</td>
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</tbody>
</table>

Other (please specify)
*24. Indicate the likelihood you would use the following types of NON-face-to-face types of mental health counseling at your campus counseling center if they were available

<table>
<thead>
<tr>
<th>Service</th>
<th>Very likely</th>
<th>Likely</th>
<th>Neither likely or unlikely</th>
<th>Not likely</th>
<th>Would not use</th>
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</tbody>
</table>

25. Thank you for taking the time to complete this survey.

Click this link [https://www.surveymonkey.com/s/prize-info](https://www.surveymonkey.com/s/prize-info) to be redirected to the gift card drawing entry form.

Please note that you are not required to participate in the drawing, your contact information will not be linked to your survey responses, and the contact information you provide will not be sold, shared, or distributed to third parties.

Feel free to leave comments below.
Appendix B: Institutional Review Board Approval Letter

1/27/2015

Kathleen Palmer, M.S., LMHC
Educational and Psychological Studies
4202 East Fowler Ave.
Tampa, FL 33620

RE: Exempt Certification
IRB#: Pro00020119
Title: Millennial Generation Undergraduate College Students' Attitudes About Internet-based Mental Health Interventions

Dear Dr. Palmer:

On 1/27/2015, the Institutional Review Board (IRB) determined that your research meets criteria for exemption from the federal regulations as outlined by 45CFR46.101(b):

(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:
(i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

As the principal investigator for this study, it is your responsibility to ensure that this research is conducted as outlined in your application and consistent with the ethical principles outlined in the Belmont Report and with USF IRB policies and procedures.

Please note, as per USF IRB Policy 303, "Once the Exempt determination is made, the application is closed in eIRB. Any proposed or anticipated changes to the study design that was previously declared exempt from IRB review must be submitted to the IRB as a new study prior to initiation of the change."

If alterations are made to the study design that change the review category from Exempt (i.e., adding a focus group, access to identifying information, adding a vulnerable population, or an
intervention), these changes require a new application. However, administrative changes, including changes in research personnel, do not warrant an amendment or new application.

Given the determination of exemption, this application is being closed in ARC. This does not limit your ability to conduct your research project. Again, your research may continue as planned; only a change in the study design that would affect the exempt determination requires a new submission to the IRB.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

John Schinka, Ph.D., Chairperson
USF Institutional Review Board
ABOUT THE AUTHOR

Kathleen Palmer is an Assistant Professor at the University of Detroit Mercy and is a limited license-Master’s psychologist (LLP) in Michigan, as well as a licensed mental health counselor (LMHC) in Florida. She received her Certificate in Applied Addictions Education, Bachelor of Science Degree with high honors in Mental Health and Master of Science Degree in Clinical Psychology at Madonna University. She completed her Ph.D. coursework in Counselor Education and Supervision at the University of South Florida. She has provided an array of mental health services to diverse populations in a variety of settings for nearly 20 years. She has taught several undergraduate and graduate courses in psychology, education psychology, and counselor education. Kathleen’s research interests are Internet-based mental health interventions, generational influence on mental health counseling, and spirituality in counseling.