

Running Head: HELP SEEKING AND THE THEORY OF PLANNED BEHAVIOR

HELP SEEKING AND THE THEORY OF PLANNED BEHAVIOR IN COLLEGE  
STUDENTS: EXPERIMENT AND MODEL TESTING

A DISSERTATION

SUBMITTED TO THE GRADUATE SCHOOL

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE

DOCTOR OF PHILOSOPHY

BY

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MUNCIE, INDIANA

DECEMBER 2011

## ACKNOWLEDGEMENTS

To my wife Jess, you have been my champion from the day we married. Writing this work and pursuing a graduate degree has been made easier because of our partnership. Thank you for your love and support.

To my dearest Abigail, thank you for the smiles and laughter you have brought since coming into my life. You are truly my joy.

To Dr. Stefaía Ægisdóttír, thank you for your patience and encouragement through this process. Your guidance has been crucial to the development of this project and I could not ask for a better chairperson to lead my committee.

To Dr. Larry Gerstein, you have provided much needed perspective and have saved me from myself at times. Thank you for serving on my committee.

To Dr. Theresa Kruczek, it was my privilege to learn important lessons about leadership as I worked as your assistant for two years. Thank you for serving on my committee.

To Dr. Mary Kite, in one brief individual meeting you gave me a new perspective on measuring attitudes that I will not soon forget. Thank you for serving on my committee.

To Dr. Sharon Bowman, you are not on my committee, but my life and career changed for the better on a spring day during my first year of the program. At that time you provided feedback that was, in the moment, very difficult to hear. I will never forget that discussion. Thank you.

To Sam Clemmons, my filming partner, your professionalism, expertise, and patience throughout the long process of creating our video were essential to its completion. Thank you.

Thank you to all my family and friends who were so supportive throughout the development of this project. And to my grandfather, this project is dedicated to you.

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## **Chapter 1**

### **Introduction**

Each year, most college students with a psychological concern forgo free mental health services available to them at their school. A rationalization for this phenomenon is not easily formed and it may be tempting to examine factors in isolation once a passing nod has been given to a theoretical explanation. In the current investigation this pitfall is dodged while addressing college students' avoidance of university counseling centers by using a well articulated theory to explain psychological help seeking in college students and to create an instrument for addressing this phenomenon. Thus, there are two specific goals of this study: to assess the adequacy of the Theory of Planned Behavior (Ajzen, 1985; 1991) for explaining psychological help seeking (PHS) in college students, and to test the impact of a video designed in line with this theory on PHS in college students. These two aims stem from concerns over PHS behavior documented in the literature.

A majority of individuals with a diagnosable psychological disorder do not seek professional mental health services (Andrews, Issakidis, & Carter, 2001; Regier et al., 1993), a pattern that extends to college students (Blanco et al., 2008). This is despite the fact that most colleges provide students with free counseling services (Gallagher, 2009). Specifically, data from the 2001-2002 U.S. National Epidemiologic Survey on Alcohol and Related Conditions showed that only 18% of college students between the ages of 19

and 25 with a psychological disorder sought treatment (Blanco et al., 2008). Notably, PHS rates were no different between 19-25 year-old college students and their same aged non-college peers regardless of whether they had a mood, anxiety, or personality disorder. Moreover, college students sought treatment for alcohol use disorders less often than their non-college peers, even though college students' had significantly higher rates of alcohol dependence. This research shows that college students do not access a benefit (free treatment) that is not likely available to the general public.

Due to the demonstrated effectiveness of psychological treatment (e.g., Lambert, Bergin, & Garfield, 2004), college students' low PHS rate has caused concerns amid scholars (e.g., Blanco et al., 2008; Vogel, Wade, Wester, Larson, & Hackler, 2007). This effectiveness has been demonstrated in a meta-analysis of psychotherapy outcome studies by Smith and Glass (1977) who found clients in treatment to be better off than 75% of untreated individuals. These findings have been supported by subsequent meta-analyses (Shadish et al., 1997; Smith, Glass, & Miller, 1980). Also, therapeutic gains appear to last beyond termination of the therapy relationship (see Lambert & Ogles, 2004). Going to a university counseling center (UCC) should not decrease one's confidence in psychotherapy's benefits as results similar to findings in the general counseling efficacy literature have been reported (Minami et al., 2009). Thus, it can be assumed from college students' low PHS rate that many distressed students are not reaping the benefits of the free mental health services available to them. A reason for such low utilization rates might be a lack of awareness of the UCC as a viable option for help.

Reports on college students' knowledge of UCC services have shown that many students do not know about the functions, purposes, and locations of these centers. In

fact, more than one-half of college students may be unaware of the counseling resources offered on their campuses (Benedict, Aspler, & Morrison, 1977; Fouad et al., 2006; Henggeler, Harbin, & Sallis, 1982; Kahn, Wood, & Wiesen, 1999; Yorgason, Linville, & Zitzman, 2008). Results from these studies are tempered by the fact that most were conducted at individual universities, and a large-scale study with samples of subjects from many universities would certainly add weight to this aggregate of results; however, but the available statistics show a pattern that cannot be ignored. For instance, when looking at reasons for why students did not utilize UCC services, Yorgason et al. (2008) reported students' lack of knowledge about their UCC to be second only to not having enough time for counseling. In fact, 68% of students either denied knowing there was a UCC on campus or said they did not know what services were available there. Furthermore, Benedict, Aspler, and Morrison (1977) reported only 14% of students in their sample could even identify the location of their UCC.

Given the low PHS rate among college students, regardless of the reason for it (e.g., aversion toward mental health services, lack of knowledge of UCC services), it is imperative to systematically examine the effectiveness of methods directed at making psychological treatment a viable option for this population. One step toward increasing treatment utilization is increasing students' knowledge about their UCC. Yet, it is unlikely that this knowledge alone would change PHS behavior. In fact, it is probable that multiple factors influence one's decision to seek help. One useful framework for addressing the multiple variables related to PHS behavior in college students is presented in the Theory of Planned Behavior (Ajzen, 1985, 1991). Therefore, this theory was relied

upon in the current investigation in order to describe PHS in college students and to create a multimedia intervention directed at increasing their PHS intentions.

### **Theory of Planned Behavior**

The Theory of Planned Behavior (TPB) posits that one's intention to perform a behavior can be predicted by assessing one's attitude towards the behavior, subjective norms associated with the behavior, and perceived control over performing it (Ajzen, 1985, 1991; Ajzen & Fishbein, 1980). The importance of taking a multidimensional approach for describing what impacts a person's intent to perform a behavior is emphasized in the TPB. For instance, if an individual is influenced most by subjective norms that are opposed to PHS (e.g., has highly negative stigma beliefs), then a researcher's attempt to sway this person's intention to seek psychological help may be frustrated if attitude change was the sole focus of an intervention.

Although PHS has been prominent in the counseling psychology literature for the last four decades, only a limited amount of this research has been grounded in the TPB. The very few that have examined concepts from this theory have been correlational (Jarvis, 2002; MacKenzie, Knox, Gekoski, & Macaulay, 2004; Miller, 2005; Mo & Mak, 2009), with no experimental designs attempting to change intentions by focusing on each TPB component. Furthermore, most researchers have only used portions of the TPB model when researching PHS (e.g., Bayer & Peay, 1997; Choi, 2008; Howland, 1997; Vogel & Wester, 2003; Vogel, Wester, Wei, & Boysen, 2005). Moreover, Mo and Mak (2009), in their assessment of a community sample of Hong Kong residents, are the only researchers to have used structural equation modeling methods to assess the adequacy of

explaining PHS with the full TPB model. Thus, utilizing concepts from the TPB to influence and assess PHS in U.S. college students is warranted.

In sum, to date there is limited research on the full TPB model in a PHS context. In addition, no studies have used an experimental design in which intentions to seek psychological help are influenced by an intervention created from concepts in the TPB. This gap is addressed by the current investigation. In this study, the adequacy of the TPB model for explaining PHS in college students was evaluated. In addition, a multimedia intervention created from TPB concepts was designed to change PHS intentions of college students by focusing on attitudes toward PHS, subjective norms associated with PHS, and perceived control over PHS. Relying on a post-test only experimental design the effect of this intervention on PHS intention was compared to no intervention at all. As the main target of the multimedia intervention, PHS intentions take a prominent role in this investigation.

### **Intentions to Seek Psychological Help**

Behavioral intention refers to one's motivation to perform a behavior (Ajzen, 1985, 1991; Ajzen & Fishbein, 1980), and it is the link between the three predictive components of the TPB (attitude towards a behavior, subjective norm, and perceived behavioral control) and actual performance of a behavior. Ajzen (1991) recommended measuring intention closely to the actual performance of a behavior because intentions change quickly and without warning. Scholars have increasingly called for the testing and preparation of materials/interventions that could enhance persons' willingness to seek help and ultimately increase use of counseling services (Vogel, Wade, Hackler, 2008; Ægisdóttir, O'Heron, Hartong, Haynes, & Linville, in press).

A variety of interventions (e.g., video, vignettes, audio recordings) have been created and tested in research geared toward preparing clients for what to expect from psychotherapy. Historically, these investigations were conducted on individuals actively seeking treatment (LaTorre, 1977; Reis & Brown, 1999; Walitzer et al, 1999), whereas more recent interventions have targeted increasing PHS in persons not actively seeking psychological help (Christopher, Skillman, Kirkhart, & D'Souza, 2006; Daigle et al., 2006; Deane, Wilson, & Russell, 2007; Nicholas, Oliver, Lee, O'Brien, 2004; Rickwood, Cavanagh, Curtis, & Sakrouge, 2004; Ægisdóttir et al., 2011). These efforts have demonstrated that interventions can enhance attitudes toward PHS (Christopher et al., 2006; Heesacker, 1986; Ægisdóttir et al., 2011) and knowledge about PHS (Daigle et al., 2006; Nicholas et al., 2004; Rickwood et al., 2004), with little or no change in persons' intent to seek psychological help (e.g., Ægisdóttir et al., 2011). Of note, however, is that intentions to seek help have been poorly measured in these studies by use of either a single item scale or unstandardized scales with unknown validity.

Because this research has shown that attitudes toward PHS as well as knowledge about PHS can be enhanced without significantly impacting PHS intentions it reinforces the idea that the variable(s) having the highest impact on a person's PHS intentions will vary contextually. For instance, Christopher et al. (2006) showed that an argument in favor of PHS targeted at subjective norms increased PHS intentions in college students from a collectivistic culture (Thailand), and an argument targeting beliefs and attitudes increased PHS intentions in college students from an individualistic culture (United States). Whereas these results demonstrate the individual and cultural differences that are important to how TPB concepts predict PHS intentions, the results require cautious

interpretation due to inflation of risk for Type-I error from multiple univariate analyses without correction. Therefore, a more conclusive answer is still sought to show the power of an intervention designed to impact all three factors stipulated by the TPB to influence PHS intentions.

While the TPB offers guidance on how attitudes, social norms, and perceived behavioral control affect behavior through intentions to perform that behavior, the theory offers no guidance on the mechanisms necessary for changing these variables in experimental work. Therefore, in creating the intervention used in this study, additional but relevant theories and research pertaining to changing attitudes, subjective norms, and perceived behavioral control were consulted. The remainder of this chapter will focus on this body of literature.

### **Attitudes**

According to the TPB, individuals hold beliefs that performing a behavior will result in a certain outcome. These beliefs are evaluated as favorable or unfavorable by the person, resulting in attitude formation (Ajzen, 1985; Ajzen & Fishbein, 1980). Focusing on attitude change related to persuasion, Petty and Cacioppo (1986) introduced the Elaboration Likelihood Model (ELM). Per the ELM, attitude change occurs on a continuum based on the extent to which one elaborates upon information relevant to the attitude (Heesacker, Conner, & Prichard, 1995). The extremes of this continuum were labeled central route and peripheral route. Petty and Cacioppo (1986) argued that the greatest elaboration of information occurs via the central route, making it the ideal route for creating lasting attitude change.

To attain central route processing one must (a) be motivated to elaborate on information provided, (b) be able to process this information, (c) have a large number of either favorable or unfavorable thoughts occur while processing information, and (d) store new thoughts on the issue in long-term memory (Heesacker, Conner, & Prichard, 1995; Petty & Cacioppo, 1986). Information is processed peripherally (i.e., through the peripheral route) if any of a-d above do not occur during message presentation (Petty & Cacioppo, 1986). Peripheral route processing occurs when attention is directed to environmental cues like affect, speaker attractiveness, and number of arguments instead of message content (Eagly & Chaiken, 1993). Attitude change from peripheral processing is temporary, easily influenced, and not predictive of behavior.

Some researchers have argued that information processed concurrently through the central and peripheral routes should result in the greatest attitude change (SanJosé-Cabezudo, Gutiérrez-Arranz, & Gutiérrez-Cilián, 2009, Liu & Shrum, 2009), but testing the veracity of a dual process model is not the purpose of the current investigation. Thus, attitude change efforts were guided by Petty and Cacioppo's (1986) description of the roles of central and peripheral route processing. From this perspective, message content contained in the video used for this study was made relevant to college students' mental health. Also, pilot testing procedures were used to reduce distracters such as loud music and attractive or unattractive actors, and statements made in the video were created to conjure favorable thoughts about PHS among the students.

### **Subjective Norms**

The subjective norms (SN) concept combines one's perception of whether or not important others think a behavior should be performed, and one's motivation to behave in

line with these opinions (Ajzen, 1985; Ajzen & Fishbein, 1980). Important others are persons considered to be significant in one's life (e.g., a parent, sibling, partner, church, peers). Thus, in a PHS context college students' family and friends are expected to have an important influence on the decision to use the UCC. If so, greater PHS intentions should result from positive change in SN. One way to change the SN associated with PHS was presented by Rochlen and Hoyer (2005). Relying on social marketing theory, they argued that PHS interventions can be made more effective by communicating that a norm favoring PHS does not conflict with one's existing norms. They noted that this could be communicated by directing the target audience's attention to PHS in peers or others with whom they can relate. Should efforts to change SN and attitudes associated with PHS be successful, it is still possible that students' intentions to seek help will remain unchanged. This may occur when they perceive insurmountable barriers to obtaining psychological help, which is targeted by the perceived behavioral control component of the TPB.

### **Perceived Behavioral Control**

Perceived behavioral control (PBC) is the perceived difficulty of performing a behavior and the perception that a behavior is under one's control despite known barriers. It is posited to influence behavior directly and indirectly through intentions (Ajzen, 1985, 1991; Trafimow, Sheeran, Conner, & Finlay, 2002). Ajzen (1991) has likened PBC to Bandura's (1977; 1978) concept of self-efficacy. Thus, an effective strategy for influencing PBC can be gleaned from research on social learning theory (Bandura, 1977; 1978). It has been demonstrated, for instance, that observers' self-efficacy to perform a behavior is raised after watching similar others succeed (i.e., vicarious learning), whereas

watching similar others fail lowers one's self-efficacy (Schunk, 1999; Schunk & Hanson, 1985; Schunk, Hanson, & Cox, 1987). In terms of PHS, Buckley and Malouff (2005) reported improving college students' attitudes toward PHS using a video of three testimonials about therapy experiences. Although PBC was not directly assessed in this study, it is conceivable that hearing success stories of psychotherapy may have increased students' beliefs that psychotherapy might help them and therefore resulted in more positive attitudes toward treatment. Also, Guajardo and Anderson (2007) reported that college students who were shown a video of re-enacted psychotherapy sessions had lower treatment fears compared to participants' who did not see it. Thus, based on social learning theory and research successfully using videos to enhance attitudes and reduce fears associated with treatment, the PBC component of the TPB was targeted in the current study by demonstrating diverse college students in psychotherapy.

### **The Current Study**

In sum, the current study is based on the premise from the TPB (Ajzen, 1985; 1991) that improvements in one's attitudes, SN, and PBC regarding PHS will lead to greater PHS intentions when experiencing a psychological problem. To date, no experiments in a PHS context among college students have been performed in which numerous TPB concepts were targeted. The need for a mechanism to increase PHS among college students is driven by reports that mental health treatment is not sought by most college students with psychological disorders (Blanco et al., 2008), and that students lack knowledge about UCCs (e.g, Yorgason et al., 2008). Consequently, it was considered imperative to design and test an intervention, in line with the TPB, to increase the likelihood that students would use resources available at their UCC. If effective, this

and similar interventions may be used by UCC staff to orient students to its services and potentially increase utilization.

This study extends two recent experiments in which attitudes were manipulated to change persons' willingness to seek psychological services. *Ægisdóttir et al. (in press)* had college students read a vignette in which a counselor addressed and validated common fears and negative attitudes toward PHS or a vignette about a typical intake session. Addressing common negative attitudes and fears in the intake session increased the stigma tolerance of males without prior PHS experience, but no other effects were notable. These authors recommended future studies describe the benefits of psychotherapy as well as the expert characteristics of mental health professionals in order to create a more powerful intervention.

The second experiment, conducted by Hammer and Vogel (2010), examined how reading a pamphlet designed for depressed men affected men in comparison to two generic pamphlets on depression and mental health services. Attitudes toward PHS were more positive and self-stigma was lower for men who read the specially-designed pamphlet compared to men who read a generic pamphlet. Hammer and Vogel (2010) suggested using masculine language in PHS outreach efforts in order to reach males in the target audience. Examples included describing therapy as a team effort and referencing the strength required to seek help.

The current study incorporates these suggestions while filling the void from a lack of studies in which TPB variables are used to increase PHS in college students. A two-group randomized posttest only design was employed, systematically targeting PHS attitudes, SN, and PBC with a video favoring PHS. A structural equation modeling

technique was used to compare mean scores of latent constructs between those who saw the video and those who did not. Additionally, the adequacy of the TPB for explaining college students' PHS intentions was assessed. It is expected that results from this study will stimulate future research on PHS within samples of college students.

## **Chapter 2**

### **Review of Literature**

There is a particular thorn in the side of those who believe in the benefits of psychological treatment; that is, a majority of individuals with a diagnosable psychological disorder do not seek professional mental health services. This trend is consistent across different epidemiologic studies. According to Regier et al. (1993), less than one third of individuals assessed in the United States who were affected by a mental or addictive disorder reported seeking psychological treatment. Within a national Australian sample, only 13.1% of individuals with a mental disorder reported seeking treatment from a mental health professional (Andrews, Issakidis, & Carter, 2001). There are no significant departures from this trend when one examines help seeking among college students in the United States.

An analysis of data from the 2001-2002 U.S. National Epidemiologic Survey on Alcohol and Related Conditions revealed just 18% of college students between the ages of 19 and 25 with a psychological disorder sought treatment (Blanco et al., 2008). Although this study, like those conducted by Regier et al. (1993) and Andrews et al. (2001), was limited by relying on retrospective reports of experiences over a one year period, its strengths rested on a comparison of 19-25 year-old college students with their same aged peers not attending college. One might reasonably expect higher psychological help seeking (PHS) rates in college students compared to non-college students given the

large percentage of university counseling centers (UCC) offering free counseling services to students (Gallagher, 2009). However, Blanco et al. (2008) found no group differences in PHS rates for individuals with mood, anxiety, or personality disorders. Also, and in contrast to what was expected given accessibility to counseling services, Blanco et al. (2008) found that college students' sought help less often for alcohol use disorders than their non-college student peers, an interesting finding given that the rates of alcohol dependence among college students' were significantly higher than for the non-college group.

Despite the importance of studies examining persons PHS utilization rate, a missing piece in all these investigations is an assessment of persons' awareness of treatment options. It is conceivable, for instance, that those participating in Blanco et al.'s study were not even aware of the services available to them. In fact, research on college students' knowledge of UCCs reveals that many students do not know about the functions, purposes, and locations of these centers. Studies have revealed that more than one-half of college students are unaware of the counseling services offered on their campuses (Benedict, Aspler, & Morrison, 1977; Fouad et al., 2006; Henggeler, Harbin, & Sallis, 1982; Kahn, Wood, & Wiesen, 1999; Yorgason, Linville, & Zitzman, 2008).

When looking at reasons why college students did not utilize UCC services, Yorgason et al. (2008) reported lack of knowledge about the UCC to be second only to not having enough time for counseling. Yorgason et al. found that 68% of students either denied knowing there was a UCC on campus, or reported not knowing what services were available there. Furthermore, just 14% of students in a study by Benedict, Aspler, and Morrison (1977) could identify the location of the UCC. Furthermore, Kahn et al.

(1999) noted that a majority of students they surveyed knew there was a UCC somewhere on campus, but participants only recognized a few of the services offered.

There is at least one group of individuals impacted by both treatment underutilization and lack of student awareness regarding treatment options. This group consists of the mental health providers working at UCCs. When psychological disorders cause significant disruptions in a student's life the ability of a university to retain that student may be jeopardized. Often, staff members at UCCs are charged with aiding university officials in retention efforts by offering students a variety of services (Gallagher, 2009). Unfortunately, low utilization rates can make this task difficult. Furthermore, as indicated in studies by Andrews et al. (2001), Blanco et al. (2008), and Regier et al. (1993) the issues reported by students were not mild stressors, but rather consisted of diagnosed substance-related problems, and mood, anxiety, and personality disorders.

For many diagnoses in the *Diagnostic and Statistical Manual of Mental Disorders – Text Revision (DSM-IV-TR; American Psychiatric Association, 2000)* an important criterion for diagnosis is experience of significant disruption or impairment in one or more areas of life. Thus, college students are likely to experience a disruption in academic performance during the course of a psychological disorder. Therefore, it is imperative to examine methods for communicating to psychologically distressed persons the potential for positive change via UCC services. But are mental health services really helpful?

Questions surrounding the efficacy of psychotherapy have been raised since Eysenck (1952) concluded that traditional psychological treatment does not work

(Lambert, Bergin, & Garfield, 2004). Since Eysenck's review, and counter to his conclusion, research has generally supported psychotherapy as a positive change mechanism (Lambert, Bergin, & Garfield, 2004). In fact, a new picture of psychotherapy emerged from the use of meta-analyses in which treatment effects across outcome studies were compared. For example, Smith and Glass (1977) found that the typical client in treatment is better off than 75% of those individuals who go untreated. Smith, Glass, and Miller (1980) reported an effect size of .85 standard deviation units on measures of psychological functioning in favor of treated versus untreated groups. Using more stringent methodology than Smith and Glass (1977) and Smith et al. (1980), Shadish et al. (1997) reported similar but a smaller effect size of .6 standard deviation units. So it appears, in general, that distressed individuals engaged in psychological treatment experience significantly greater improvement compared to those who do not seek treatment. In addition to the general benefits of psychological treatment, research has shown that the gains made during psychotherapy last beyond the termination of treatment (Lambert & Ogles, 2004). While more recently concerns have been raised about the dearth of literature investigating negative effects of psychotherapy (Barlow, 2010; Dimidjian & Hollon, 2010), which would certainly enrich the treatment outcome literature, the numerous meta-analyses of the treatment outcome literature indicating the benefits of treatment provides a strong rationale for promoting PHS. The benefits of psychological treatment appear to extend to college populations as well.

Researchers studying the effectiveness of psychotherapy in UCCs have reported positive findings similar to those discussed in the psychotherapy outcome literature (Minami, Davies, Tierney, Bettmann, McAward, Averill, et al., 2009). Minami et al.

(2009) used effect sizes from randomized clinical trials as benchmarks for judging the effectiveness of therapy in UCCs. To guard against nonindependence of subjects, only data from a client's first trip to the counseling center was analyzed. They examined symptom change scores based on the Outcome Questionnaire 45.2 (OQ-45; Lambert, Morton, Hatfield, Harmon, Hamilton, Reid, et al., 2004) for 2,672 clients. Just over 78% of the clients experienced a significant decrease in their level of symptomatology. In addition, the effect sizes for change experienced by clients were larger than the benchmarks culled from efficacy research.

The total body of outcome research engenders a large concern with regard to treatment underutilization. That is, the potential benefits described above are not being accessed. Some authors have made attempts to change this trend (Ægisdóttir, O'Heron, Hartong, Haynes & Linville, in press; Hammer & Vogel, 2010; Heesacker, 1986; Nelson & Barbaro, 1985). Nelson and Barbaro (1985) used television spots, posters, brochures, press releases, and public service announcements in a multi-state marketing campaign focused on reducing the stigma specific target groups (e.g., young married couples) associated with PHS. They reported a positive correlation between target groups' impressions of PHS and exposure to the media campaign. Nevertheless, an improvement in impressions of PHS is not the same as actually using psychological services. Yet, Nelson and Barbaro (1985) argued that the desired outcome of marketing mental health services should be a positive image of psychotherapy within one's target market, not an instant behavioral response. Otherwise the message becomes irrelevant to persons not currently experiencing a psychological problem.

Another attempt to influence PHS was made by Hammer and Vogel (2010), who examined a sample of depressed males with no prior PHS experience. They reported that a brochure specifically designed for men was effective at improving attitudes and decreasing self-stigma associated with PHS in men recruited from several websites. However, because of small effect sizes these significant results may be attributable to the very large sample size that they employed ( $n = 1,397$ ) rather than to a strong intervention. This is supported by the fact that mean scores fell below the midpoint of the attitude measure even after the brochure was shown, suggesting participants' attitudes were closer to the unfavorable end of the continuum of attitudes toward PHS. It is also unknown how these men's intentions for PHS were affected by the brochure, because intentions were not assessed.

Methods to enhance attitudes toward PHS and to increase help seeking intentions were assessed in studies by Heesacker (1986) and Ægisdóttir et al. (2011). Heesacker (1986) found that participants' attitudes toward PHS improved after listening to an audio recording of arguments favoring psychological treatment, but this intervention did not affect their intentions strongly enough to produce behavioral change. Ægisdóttir et al. (2011) had college students imagine they were seeing a counselor for minor depression, then they were randomly selected to read one of two types of vignettes: A vignette describing the procedures of a typical intake in addition to a description of a counselor discussing common fears and negative attitudes associated with mental health services and a vignette in which a typical intake procedure was described. Ægisdóttir et al. found that discussing and normalizing common fears and negative attitudes toward PHS only enhanced the attitudes toward PHS of men who had no previous treatment experience.

This intervention did not affect students' willingness to seek further counseling (Ægisdóttir et al., 2011).

Even though these studies indicate that efforts can be somewhat successful at increasing persons' psychological help seeking tendencies, one can see from reviewing these studies that much work is still needed before a conclusion can be made that a powerful means of changing patterns of treatment underutilization have been identified. It is therefore important that more methods directed at influencing intentions to seek psychological help be systematically examined. The current study is a step in that direction.

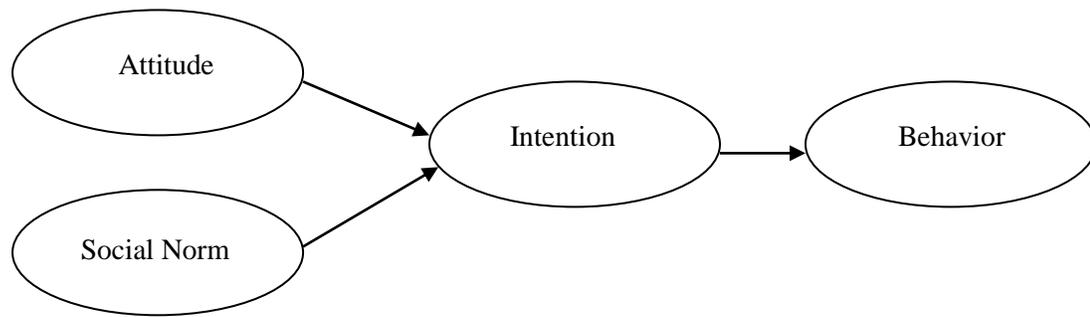
Nelson and Barbaro (1985) emphasized that in order to effectively market mental health services one must make messages relevant to the population of interest. While focusing solely on college students as the population of interest, in the current study a multimedia intervention was designed in which lack of awareness of UCC resources was specifically addressed. In order to focus on educating students on UCC services and increase PHS intentions among college students, concepts were drawn from the Theory of Planned Behavior (TPB; Ajzen, 1985, 1991) and targeted when creating the multimedia intervention for this study.

### **Theory of Planned Behavior**

The Theory of Planned Behavior (TPB; Ajzen, 1985; 1991), originally introduced as the Theory of Reasoned Action (TRA; Ajzen & Fishbein, 1980), describes how attitudes and normative beliefs predict intentions to perform volitional behavior (Norman & Smith, 1995). The TPB replaced the TRA given the latter theory's lack of consideration for goal-directed behavior (e.g., losing weight), which made it less useful

(Netemeyer, Burton, & Johnson, 1991). Thus, a third component called perceived behavioral control was added and the model was renamed the TPB (Ajzen, 1985).

The TPB posits that intention to perform a behavior is predicted by one's attitudes toward the behavior, subjective norms associated with the behavior, and perceived behavioral control over performing it (Ajzen, 1985, 1991; Ajzen & Fishbein, 1980). Based on context, one predictor (e.g., attitudes) may influence intentions more than the other two predictors (subjective norms, perceived behavioral control), and the most influential component varies based on context as well. Support for the situational-dependence of the TPB was demonstrated by Fife-Schaw, Sheeran, and Norman (2007). These authors assessed participants' attitudes, subjective norms, perceived behavioral control, and intentions to perform 30 different behaviors. Whereas participants' average attitude scores were generally positive for all behaviors, the average scores for subjective norms and perceived behavioral control fluctuated depending on the behavior in question. For instance, participants did not report much social pressure to visit the countryside (mean = .01, scale ranging from -3 to +3), but seemed to feel greater pressure from important others to avoid smoking (mean = 2.16, scale ranging from -3 to +3). The TRA and the TPB are shown in Figures 1.1 and 1.2 respectively. As can be seen in Figure 1.2, perceived behavioral control is expected to add to the prediction of behavior beyond what is predicted by the intention portion of the model.

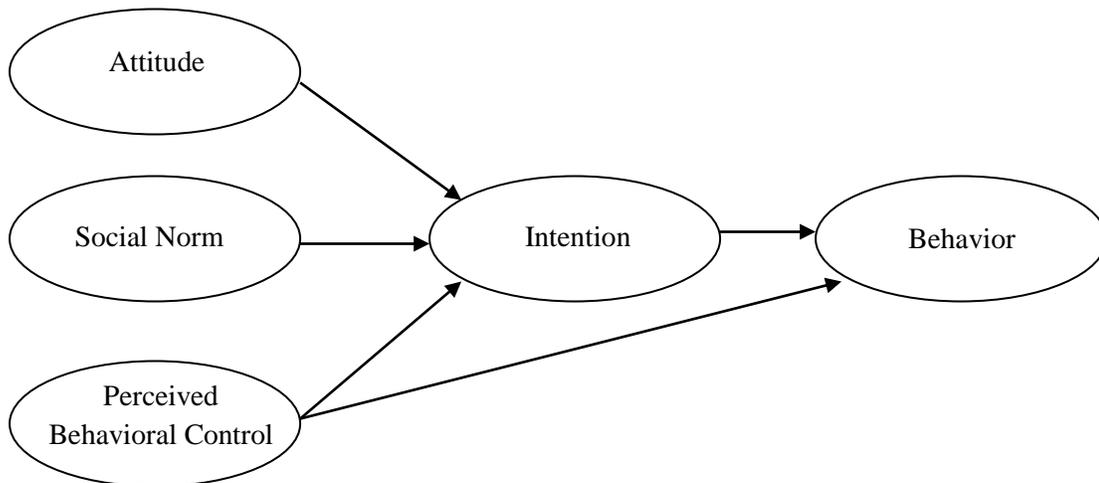


*Figure 1.1.* The Theory of Reasoned Action

Many psychological help seeking researchers continue to rely on the TRA in designing their investigations (Choi, 2008; Christopher, Skillman, Kirkhart, & D'Souza, 2006; Codd, 2003; Goddard, 2003; Kim & Park, 2009; Vogel & Wester, 2003; Vogel, Wester, Wei, & Boysen, 2005; Yong, 2007) despite research showing that model fit indices for the TPB are consistently better than those for the TRA, regardless of whether the behavior in question is volitional or goal-directed (e.g., Hagger, Chatzisarantis, & Biddle, 2002; Netemeyer et al., 1991). It appears that this oversight of ignoring the perceived behavioral control component of the TPB unnecessarily limits the ability to predict behavioral intentions.

In addition, Mo and Mak (2009) are the only authors to have utilized structural equation modeling methods to assess the adequacy of the full TPB in a PHS context. They collected data from a community sample of Hong Kong residents and found that the TPB model was supported, explaining 57% of the variance in help seeking intentions. A limitation to Mo and Mak's (2009) study is that they used a collection of items that had not been standardized. In addition, they used items to act as indicators for the latent variables from the TPB. Using individual items in structural equation modeling as

indicators of latent factors can lead to unstable models as the reliability of single items are unknown (Russell, Kahn, Spoth, & Altmaier, 1998). In addition, the adequacy of these items for capturing the domains described in the TPB is also unclear.



*Figure 1.2.* The Theory of Planned Behavior.

No study has of yet employed an experimental design to examine the effect of an intervention to change persons PHS attitudes, subjective norms, perceived behavioral control, and intentions. Thus, studies of this nature intended to influence and measure PHS in college students from the United States is warranted. This was one purpose of the current study. A study that affords the chance to recognize the different impact each component of the TPB has on college students' intentions for PHS will be a significant contribution to the current knowledge base. Specifically, in the current study the effect of participants' attitudes toward PHS, subjective norms associated with PHS, and perceived behavioral control over obtaining psychological help on PHS intentions was examined. Furthermore, by relying on concepts from the TPB a multimedia intervention was created with the goal of changing PHS intentions.

### **Intentions to Seek Psychological Help**

Behavioral intention refers to one's motivation to perform a behavior (Ajzen, 1985, 1991; Ajzen & Fishbein, 1980). It is the link between the three predictive components of the TPB (attitude towards a behavior, subjective norm, and perceived behavioral control) and actual behavioral performance. Ajzen (1991) recommended that intention be measured as close to performance of a behavior as possible because intentions can change quickly and without warning. Therefore, when intention fails to predict behavior one must question the timing of measurement or quality of the measures used for assessing it (Ajzen, 1985; 1991). Greve (2001) offered a critique of this approach to the interpretation of null findings saying it renders the link between intention and behavior unfalsifiable and, therefore, useless to test. Consequently, and per Greve's (2001) recommendation, the link between intention and behavior was not tested in the current study. Despite this omission, the current study remains unique in that the TPB framework was utilized in experimental research on psychological help seeking.

There is evidence for the supposition that inducing change in attitudes, subjective norms, and perceived behavioral control will result in a concomitant increase in PHS intentions. Fife-Schaw et al. (2007) used a combination of real data and simulated data to test whether inducing change in one or more of the TPB's three predictor variables lead to changes in behavioral intentions. They demonstrated that increases in attitudes, subjective norms, or perceived behavioral control produced greater intent to perform a behavior. They also showed that the greatest increase in behavioral intentions resulted when all three of the predictor variables were maximally affected in a positive direction.

Therefore, targeting each portion of the TPB seems crucial to bringing about the greatest change in PHS intentions.

These intentions are not always consistent based on demographic variables. For example, women typically report greater intentions to seek mental health services for a psychological problem when compared to men. In the same way, individuals with prior PHS experience also report greater intentions to seek psychological treatment compared to those who have never sought such help (see Vogel, Wester, & Larson, 2007).

However, if an intervention designed to change college student's PHS intentions is effective, then it should be anticipated that differences would not emerge in the treatment group. Follow up analyses can be used to clarify this point.

Although the TPB provides a framework for describing how intentions to seek psychological services can be predicted, it does not describe how predictors of intent should be changed. Consequently, additional theories and research need to be consulted to explicate how to directly influence each of the predictors of behavioral intentions. Buckley and Malouff (2005) considered the vicarious learning principle of social cognitive theory when designing a video intended to improve attitudes associated with PHS. The video consisted of three testimonials of positive personal experiences from psychotherapy. Participants were expected to learn that psychotherapy is a positive endeavor and to develop positive attitudes toward psychotherapy as a result. As expected, those who saw the video reported more positive attitudes toward PHS than those who did not. Thus, principles from social cognitive theory, which indicated how change occurs in a variable (attitudes), were used to create an effective intervention. The effect of the video presentation on PHS intentions, however, was not assessed.

Given the TPB postulation that a change in behavioral intentions may result from alterations in any one of its three predictors, it is important to explicate the way an intervention impacts these variables. Hardeman et al. (2002) reported that 30 studies have employed the TPB to guide interventions to change behavior and/or behavioral intentions. Yet, as Hardeman et al. (2002) noted, none described which components of the TPB were targeted by the intervention's change mechanisms (e.g., modeling, information). In addition, none of the studies dealt with PHS. It seems that the selection of appropriate methods for inducing change in TPB components is left to researchers' discretion. Consequently, the remainder of this chapter is dedicated to discussing theory and research that can be applied to impacting attitudes, subjective norms, and perceived behavioral control associated with PHS.

### **Attitudes**

According to the TPB, each individual holds beliefs that performance of a particular behavior will result in a certain outcome. Beliefs about the expected outcome of a behavior are evaluated either favorably or unfavorably which comprises one's attitude towards the behavior (Ajzen, 1985; Ajzen & Fishbein, 1980). A person's expectations about the risks and benefits of seeking professional help for a problem have been shown to predict attitude formation (Vogel & Wester, 2003). These expectations have also been shown to predict help seeking behavior (Vogel et al., 2005). According to the TPB, if one believes that seeking help from a mental health professional will lead to distress amelioration, and one evaluates distress amelioration as a good thing, then one should have a positive attitude toward seeking psychological treatment.

Researchers of PHS have tended to focus on the link between attitudes and behavioral intentions, and have generally found support for this connection (e.g., Ægisdóttir & Gerstein, 2009; Allen, Walker, Shergill, D'Ath, & Katona, 1998; Bayer & Peay, 1997; Choi, 2008; Kleinman, Millery, Scimeca, & Polissar, 2002; Leaf, Livingston, & Tischler, 1986; Segal, Coolidge, Mincic, & O'Riley, 2005; Vogel & Wester, 2003; Vogel et al., 2005). That is, positive attitudes toward PHS are associated with greater intentions to seek psychological help. In addition, women and individuals with prior PHS experience consistently report more positive attitudes toward PHS in comparison to men and individuals without prior PHS experience respectively (see Vogel, Wester, & Larson, 2007 for a review of these findings). But how does one change attitudes to make them more positive?

Focusing on attitude change and persuasion, Petty and Cacioppo (1986) introduced the Elaboration Likelihood Model (ELM). The ELM posits that attitude change can be placed on a continuum (Heesacker, Conner, & Prichard, 1995). At either extreme of this continuum is a proposed route by which an individual processes incoming information leading to attitude formation. One end of this continuum is referred to as the central route and the other as the peripheral route. During persuasive communication, the strength of attitude change is proposed to be affected by the extent to which an individual elaborates upon the information presented. Greater elaboration is expected to occur via the central route, with very little or no elaboration occurring when processing information peripherally.

Thus, elaboration via the central route is conceptualized as the ideal method for creating lasting attitude change. According to Petty and Cacioppo (1986), four

components play a role in whether information about an attitude is processed this way. First, one must be motivated to elaborate on the topic being presented. This could mean that the information is personally relevant or an individual has a high need for cognition, thus producing elaboration motivation (Eagly & Chaiken, 1993). Second, one must possess the ability to process the information. This ability can be interrupted by adding distractions or making the information incomprehensible (McNeill & Stoltenberg, 1989). Third, the nature of the cognitive processing involved is important. When an argument is presented to the individual it must produce a predominance of either favorable or unfavorable thoughts. If neither of these types of thoughts, or neutral thoughts prevail then it is likely that the individual will not be invested in the topic and the central route will not be utilized. Lastly, new thoughts about an issue must be stored in long-term memory (Heesacker, Conner, & Prichard, 1995; Petty & Cacioppo, 1986). If this occurs then the individual has likely experienced attitude change. The new attitude produced from central route processing is likely to be resistant to future refutation. In addition, if one does not formulate a strong argument then attitude change may occur in the opposite direction of the one desired.

If the four requirements above are not met during central route processing it is proposed that the individual will rely on peripheral processing of information (Petty and Cacioppo, 1986). This entails attending to peripheral cues rather than message content. Such cues could include one's affect, speaker attractiveness, number of arguments presented (Eagly and Chaiken, 1993). If peripheral cues are not present then the original attitude is retained. If such cues are present, however, then a person is suspected to experience a temporary shift in attitude. The new attitude is easily influenced and will not

predict behavior with much accuracy. When designing an intervention intended to change attitudes long-term one should seek to have individuals process information centrally, not via the peripheral route (Heesacker et al., 1995).

Heppner, Good, Hillenbrand-Gunn, and Hawkins (1995) provided a good illustration of the importance of central route attitude change. They found that college women processed information directed at changing attitudes toward rape centrally while college men processed this information peripherally. Heppner et al.'s (1995) intervention did produce change in the desired direction for both men and women, but at two month follow-up men's acceptance of rape myths had moved back in the direction of their previous level of acceptance. Women had significantly lower rates of rape myth acceptance at all time points, and although their acceptance rates at follow-up regressed toward original levels their return was not as extreme as seen in men.

Mental health professionals have used the ELM to create interventions for assertiveness training (Ernst & Heesacker, 1993) and rape education (Gilbert, Heesacker, Gannon, 1991; Heppner, Good, et al. 1995; Heppner, Humphrey, Hillenbrand-Gunn, & DeBord, 1995). Yet, its application to seeking help from a mental health professional is sparse (Heesacker, 1986; Sturmer & Gerstein, 1999). Heesacker (1986) had college students listen to audio-taped messages intended to change attitudes toward a career planning group and a social anxiety group. As expected, strong arguments produced more positive attitudes and greater intentions to participate in one of the groups compared to weak arguments. How argument strength was determined is unclear, and the difference in help seeking intentions may be deceiving. In fact, the mean score for participants in the strong argument condition fell below the midpoint of the single item used to assess

whether or not participants intended to join a group. Notably, none of the participants agreed to join a group when offered the opportunity.

The importance of how the TPB conceptualizes change in behavioral intentions emerges here. The TPB proposes that multiple variables, not just attitudes, are influential. Thus, Heesacker's (1986) exclusive focus on attitude change may have resulted in an intervention that was weaker than hoped. Christopher et al. (2006) demonstrated why the TPB's multiple variable approach is valuable when they designed persuasive arguments to fit with participants' cultural backgrounds. Participants from the United States and Thailand were randomly assigned to one of three groups, for a total of six groups. Each group heard one of two types of messages or no message at all. The argument hypothesized to be most relevant to students from the United States focused on supporting or refuting individual behavioral beliefs (e.g., seeking professional psychological help would give me a safe place to communicate my feelings). The argument hypothesized to be most relevant to college students from Thailand focused on information consistent with the subjective norm component of the TPB (e.g., friends, family members, and professors think I should seek professional help when experiencing a problem).

Results of the Christopher et al. (2006) study showed that compared to the normative argument group and control group, participants from the United States had more positive attitudes toward psychological help seeking and greater intentions to seek help when they heard arguments focused on individual behavioral beliefs. With regard to Thai students, those hearing normative arguments had more positive attitudes toward help seeking and greater intentions to seek help from a mental health professional compared to

the other groups (Christopher et al., 2006). Unfortunately, no assessment of perceived behavioral control was made. In addition, the significant findings only came after the authors followed up a nonsignificant multivariate analysis of variance with multiple univariate analyses. Thus, although these findings may be encouraging, they are also very limited.

The need for personally relevant arguments when striving for attitude change is no less important when dealing with central route processing. A concern is that existing negative attitudes could become more polarized, or existing positive attitudes may become negative. This can result when the arguments used in an intervention are weak and lead to attitudes that are resistant to future alteration (Petty and Cacioppo, 1986). In the case of Christopher et al. (2006), targeting multiple constructs from the TPB may have been the catalyst for creating stronger, personally relevant messages that produced positive change in PHS intentions.

The potential for a negative shift in attitudes toward PHS was demonstrated by Sturmer and Gerstein (1999). These authors reported that after reading advertisements in favor of using an employee assistance program (EAP), college students' beliefs in the effectiveness of this program decreased as did their intentions to utilize it if they were an employee. It is possible that the college students did not view an EAP as personally relevant, which therefore resulted in their attitudes becoming more negative. Sturmer and Gerstein (1999) proposed that their arguments may have been too weak to persuade participants, with too little focus on the personal benefits to be gained by using an EAP. It is difficult to tell whether students' beliefs about the effectiveness of the EAP were neutral and then decreased or were originally positive/negative because only difference

scores between pre-test and post-test assessments were provided. Another limitation was the use of single items to assess beliefs about the effectiveness of the EAP as well as students' intentions to use it. The present study carefully addressed concerns about personal relevance of help seeking resources by focusing content on college students and conveying messages about services available at UCCs.

In sum, guidance for designing the video used in the current study was gleaned from theory and research on the ELM in counseling contexts. The sparse application of the ELM to PHS makes it imperative that further experimental research in this area utilize this model. At the same time, the limitations of studies targeting attitudes alone were revealed in the collection of studies just discussed. For instance, the Heppner et al. (1995) study suggested that attitude change is not always stable, and the Heesacker (1986) and Christopher et al. (2006) studies illuminated the need for an intervention focused on more than just attitudinal variables if one's goal is to increase participants' intentions to perform a behavior. The TPB (Ajzen, 19985; 1991) goes beyond just an assessment of attitudes by positing that subjective norms and perceived behavioral control also influence intentions to perform a behavior. Therefore, in the current study efforts were made to influence these additional variables as well.

### **Subjective norms**

The subjective norms component of the TPB is a combination of one's assessment of what important others believe one should do and one's motivation to act in a way that is consistent with the perceived opinions of these important others (Ajzen, 1985; Ajzen and Fishbein, 1980). Important others may include a diverse group of people including a parent, sibling, partner, church members, peers, or others. Thus, if a woman feels that her

friends and family think she should seek help from a mental health professional for a distressing problem and she is motivated to go along with these opinions, then her subjective norm would be favorable toward seeking psychological help for her problem.

Until recently, help seeking researchers testing either the TPB or the TRA have tended to ignore subjective norms in favor of a focus on attitudes. Some researchers have found that participants' report of subjective norms are positively correlated with their intentions to seek help for a psychological problem (Bayer & Peay, 1997; Bringle & Byers, 1997; Christian & Abrams, 2003, 2004; Christopher et al., 2006; Codd & Cohen, 2003; Howland, 1997; Kleinman et al., 2002; Mackenzie et al., 2004; Miller, 2005; Mo & Mak, 2009), whereas others have not found support for this relationship (Clansy, 1998; Jarvis, 2002; Westerhof, Maessen, de Bruijn, & Smets, 2008). However, this literature is marked by frequent use of single-item assessments of subjective norms, the reliability of which is unknown. Also of concern is that these scholars have relied on unstandardized measures.

Choi (2008) created a scale based on the TRA (Fishbein & Ajzen, 1980) and found mixed support for a relationship between subjective norms and intentions to seek help from a mental health professional in college students. Responses to the Expectancy for Positive Norm (EPN) subscale dealing with subjective norms were positively related to intentions to seek psychological help, whereas responses to the other subscale dealing with subjective norms, Tolerance for Negative Norm (TNN), were unrelated to psychological help seeking intentions. Upon further examination it appears TNN did not function as intended.

Choi (2008) reported that TNN failed to show known groups validity by not distinguishing between men and women as well as individuals with and without prior experience with psychological treatment. Convergent validity for TNN was also lacking, as responses to this subscale did not correlate with responses to a measure of stigma tolerance as expected. When assessing predictive ability, Choi (2008) noted that TNN was eventually left out of the regression analysis because it did not contribute to the prediction of PHS intentions. Interestingly, the correlation between TNN and EPN was not significant. Thus, it may be that TNN was a poor measure of subjective norms associated with PHS and that is why it was not associated with PHS intentions in Choi's (2008) study.

In sum, research on the subjective norms component of the TPB has resulted in an inconsistent picture regarding its contribution to the prediction of behavioral intentions in the context of PHS. In addition, gender differences have not emerged consistently on subjective norms as it has on attitudes. For instance, Mackenzie et al. (2004) found that women reported more positive subjective norms than men, but Choi (2008), Christopher et al. (2006), and Mo and Mak (2009) did not find gender differences on this variable. However, if one conceptualizes the social stigma associated with help seeking as indicative of subjective norms, then a more consistent relationship emerges. That is, stigma toward obtaining psychological treatment is negatively associated with intentions to seek help (e.g., Cellucci et al., 2006; Miville & Constantine, 2007, Vogel, Gentile, & Kaplan, 2008). For instance, Cellucci et al. (2006) assessed intentions to seek help for alcohol-related problems using a measure of stigma that included items such as "I would feel a lot of shame if others knew I talked to a professional about drinking" (p. 424).

Scores on this scale were negatively related to intentions. These findings offer support for the importance of assessing how others' opinions can impact a person's motivation to seek treatment. Furthermore, many valid and reliable measures on stigma attached to PHS are available, which make measuring this construct a viable option in PHS research.

The need to assess the influence important others have on an individual's decision to seek help is underscored by findings from research investigating recommendations for treatment of psychological problems. In one study members of the general public were asked what sources of help they would suggest to a hypothetical person suffering from either major depression or schizophrenia (Angermeyer, Matschinger, & Riedel-Heller, 2001). Participants were most likely to suggest seeking help from a friend or a family physician for both major depression and schizophrenia. Psychiatrists were mentioned one-fourth of the time in the schizophrenia condition, but only about a tenth of the time for major depression. Recommendations that the hypothetical person seek help from a mental health professional such as a psychologist or a social worker were rare in both cases.

Cabassa and Zayas (2007) reported similar findings. These authors had subjects read a standardized vignette describing an individual suffering from major depression and asked them to choose categories of individuals from whom they would seek help if they were experiencing the same problem. Most participants chose family members first and friends as their second option. The category "other mental health providers" (i.e., psychologists or social workers) was frequently chosen as a first option for help with depression as well. In fact, there were more participants who chose "other mental health providers" to be their first option than those who chose friends to be their first option.

The greater willingness of participants in the Cabassa and Zayas (2007) study to seek help from a mental health professional compared to those in the Angermeyer et al. (2001) study may be explained by the fact that Cabassa and Zayas offered their participants predetermined categories from which to make their selections. Angermeyer et al. did not offer prompts. They required participants to provide preferences based on the options that came to mind in the moment. Thus, it is likely that participants' first instinct in the Angermeyer et al. (2001) study was to utilize family and friends for help with a problem, and the thought of going to a mental health professional did not cross their minds. However, providing predetermined categories in the Cabassa and Zayas (2007) study may have made mental health professionals salient in the minds of their participants, consequently inflating the number of persons who endorsed a willingness to speak with a professional.

The literature contains many other examples demonstrating the impact of an individual's social network on help seeking. In fact, Tinsley, de St. Aubin, and Brown (1982) showed that individuals prefer friends and family over professional or paraprofessional helpers for most problems. Also, knowing someone who has sought help from a mental health professional in the past has been shown to predict general help seeking behavior in Australian adolescents (Rickwood & Braithwaite, 2004). Anticipating that family members will have a negative reaction to PHS has been shown to be associated with a decreased likelihood that individuals will engage in psychological treatment (Leaf, Livingston, & Tischler, 1986). Similarly, Kimura and Mizone (2008) found that Japanese college students' preference for help seeking from a UCC was predicted by their perceived expectations of others. Also reflecting the importance of

one's social network on PHS is a study by Cameron, Leventhal, and Leventhal (1993) who reported that 92% of psychological help seekers said they had spoken to at least one person in their social network about their problems prior to entering treatment. Moreover, in another study it was reported that treatment seekers were more likely than non-treatment seekers to have had someone recommend they seek mental health services for their problems (Dew, Bromet, Schulberg, Parkinson, & Curtis, 1991).

Based on these findings, it seems that important others play a key role in persons' help seeking decision-making processes and in relieving their stress. Yet, having someone to confide in does not mean individuals access their social networks for support when in distress. Relying on a sample of over 1,200 16-24 year-olds, Biddle, Gunnell, Sharp, and Donovan (2004) found that only 18.4% of men and 30.7% of women who were identified as "mentally distressed" on an objective measure had gone to friends or family for assistance. Also Wilson (2010) discovered that for 15-25 year olds, reported distress was negatively correlated with intentions to seek help from friends or family. Moreover, Wilson and Deane (2010) reported that distress might have a help-negating effect for college students. They found that suicidal ideation and symptoms of psychological distress led to seeking help from no one. More specifically, the worse persons felt the less likely they were to tell friends, family, and mental health professionals about their problems.

Perhaps then, underutilization of resources is not a phenomenon exclusive to professional mental health service providers. Participants in these studies were from Australia and not all of them were college students. It is possible that a different pattern would emerge in the United States and that a greater number of psychologically

distressed college students seek help from someone in their social network. One could argue, on the other hand, that this data is informative given that Australia is at the forefront in reaching out to psychologically distressed persons. This includes government funded internet resources offering psychological treatment to rural populations who otherwise would be unable to access professional mental health services (see Klein et al., 2010). Of note are similarities between the rates of distressed persons' seeking help from friends and family reported by Biddle et al. (2004) and the PHS rates from professional mental health providers reported in epidemiologic catchment studies (see Andrews, Issakidis, & Carter, 2001; Regier et al., 1993; Blanco et al., 2008). Specifically, less than a third of mentally distressed persons sought help from friends or family in the Biddle et al. (2004) study and less than a third of mentally distressed persons sought help from mental health professionals in the epidemiologic catchment studies. It is highly conceivable that many distressed persons do not get help, regardless of the source. This further indicates the importance of reaching out to college students that was attempted in the current study.

Given the impact important others have on PHS, how should subjective norms associated with PHS be influenced and manipulated? Rochlen and Hoyer (2005) used social marketing theory to explain how researchers investigating psychological help seeking can change persons' normative beliefs associated with psychotherapy. One suggestion was to help persons see that their stereotypical views about who seeks counseling services may be inaccurate. Rochlen and Hoyer (2005) argued that this could be accomplished by showing participants examples of clients with whom they can relate. This approach was taken by Nelson and Barbaro (1985) who first identified target groups

(e.g., young adults) and then created posters and television spots that included people similar to members of each group. Target groups' impressions of psychological services improved when this approach was used (Nelson & Barbaro, 1985), but these authors did not assess whether PHS intentions changed.

The second suggestion offered by Rochlen and Hoyer (2005) was that researchers must convey the message that help seeking does not violate social norms. If PHS is perceived to violate a norm of relying on significant others (or one's self) for help, then describing psychological treatment as a social support enhancer could be beneficial. Such an explanation provides the individual with a view of counseling as complimentary rather than competitive with other sources of support. A feared consequence of norm violation could be anger or stigma from friends and family members (Leaf et al., 1986), and some research has shown that such image concerns can be impacted. Ægisdóttir et al. (2011) found that male college students with no history of using mental health services reported decreased image concerns and increased stigma tolerance after reading a vignette in which fears and negative beliefs normally associated with PHS were addressed. Thus, in order to impact participants' subjective norms the suggestions of Rochlen and Hoyer were heeded in the current study.

Yet, even if adopting these suggestions results in a positive change in subjective norms it is no guarantee that participants' PHS intentions will be impacted. In fact, it is possible for someone with attitudes and subjective norms favorable toward PHS to have little or no intention to seek treatment when experiencing a psychological problem. This might occur when a person feels incapable of performing the necessary behavior (Ajzen,

1991). Hence the need for also targeting the TPB's third predictor of behavioral intentions, perceived behavioral control.

### **Perceived Behavioral Control**

Perceived behavioral control refers to the difficulty of performing a behavior and the perception that a behavior is under one's control despite known barriers (Ajzen, 1985, 1991; Trafimow, Sheeran, Conner, & Finlay, 2002). Ajzen (1991) described perceived behavioral control as identical to Bandura's (1977, 1978) concept of self-efficacy: one's belief that a behavior can be performed in order to gain a desired outcome. He noted that perceived behavioral control differs from attitudes and subjective norms because of its potential for directly influencing behavior. For example, having favorable attitudes and subjective norms toward buying an island likely has an inconsequential effect on behavior for most people because the lack of financial capability (low perceived behavioral control) directly prevents purchasing behavior.

Typically, researchers have reported strong correlations between perceived behavioral control and intentions to perform a behavior (Giles & Rea, 1999; McCaul, Sandgren, O'Neill, & Hinsz, 1993; Rhodes & Courneya, 2003a; Trafimow, Sheeran, Conner, & Finlay, 2002). However, the relationship between perceived behavioral control and behavioral intentions may not be as clear as one might think. Trafimow et al. (2002) found via factor analysis that a two-factor solution best explained the perceived behavioral control component of the TPB. These factors have since been labeled self-efficacy and controllability, and both are often captured when assessing the TPB (Ajzen, 2002). Self-efficacy is defined as per Bandura (1977, 1978). Controllability is the perception that performance of a behavior is within one's power (Rhodes & Courneya,

2003b). Trafimow et al. (2002) found that responses to items representing self-efficacy correlate much more highly with behavioral intentions than when items tapping controllability are used.

Rhodes and Courneya (2003a; 2003b) cautioned that strong correlations between responses to measures of self-efficacy and behavioral intentions are likely due to the shared motivational nature of the items used to measure these constructs. As a result of this overlap in measurement, correlations can be inflated. Yet, after removing motivational items perceived behavioral control has still been predictive of intentions to perform a behavior. (e.g., Boer & Moshamba, 2007; Latimer & Ginis, 2005; Rhodes & Courneya, 2004). Therefore, this construct remains an important component of the TPB.

In the realm of PHS, researchers have typically found support for a positive association between perceived behavioral control and one's intentions to seek help for a psychological problem (Christian & Abrams, 2004; Jarvis, 2002; Kleinman et al., 2002; Mackenzie et al. 2004; Miller, 2005; Mo & Mak, 2009; Westerhof et al, 2008); however, Clansy (1998) found perceived behavioral control did not add significantly to the prediction of PHS intentions. Like research on attitudes and subjective norms, measurement of perceived behavioral control has been limited by use of scales with unknown validity or, in the case of Jarvis (2002), a single item with unknown reliability. The exception is Mackenzie et al. (2004) who developed a measure of TPB variables. In fact, Mackenzie et al.'s (2004) Help Seeking Propensity subscale was the only validated measure of perceived behavioral control over PHS located during an extensive search of the literature. These authors found that college students' report of perceived behavioral control over PHS correlated more highly with their PHS intentions than attitudes and

subjective norms. It is alarming therefore, that the bulk of studies on PHS have not included perceived behavioral control as an independent variable along with attitudes and subjective norms when examining help seeking intentions and behavior.

A limited amount of research has included perceived behavioral control over PHS in college students (Jarvis, 2002; MacKenzie et al., 2004). Furthermore, no experimental studies were found where perceived behavioral control was manipulated in order to influence participants' PHS intentions. Because of the free counseling services available to students (Gallagher, 2009) barriers to treatment such as access and affordability are much different for college students than the general public. Therefore, a unique assessment of samples from this population is needed. To achieve the aims of the current study, a mechanism for changing this construct needs to be identified.

At first glance, such a mechanism may not seem readily available. Yet, research on social learning theory (Bandura, 1977; 1978) provides insight into how perceived behavioral control could be addressed. For example, watching similar others succeed raises self-efficacy, while watching similar others fail lowers it (Schunk, 1999; Schunk & Hanson, 1985; Schunk, Hanson, & Cox, 1987). At the same time, research has also shown that observing failure does not always lead to decreased self-efficacy. Schunk and Hanson (1985) and Schunk, Hanson, and Cox (1987) increased self-efficacy in children by having them observe a similar other persevere through failed attempts at performing a behavior until eventually succeeding. Moreover, Schunk et al. (1987) reported this to be more effective for raising self-efficacy and achievement compared to watching similar others succeed immediately.

Schunk (1999) argued that watching a similar other fail before succeeding is most beneficial at raising self-efficacy for novel behaviors. He wrote that seeing immediate success would only benefit persons with experience performing the same or a similar behavior. Thus, in order to reach college students with and without the experience of seeking psychological treatment, the video in the current study showed college students struggling with distress as well as students signing up for and engaged in treatment. Expectations regarding the effectiveness of this approach can be gleaned from research on condom use.

Sanderson and Yopyk (2007) showed college students educational videos demonstrating appropriate condom use. Also included was a couple shown talking together about the importance of using condoms in their relationship and the difficulty of putting on a condom when inebriated. In comparison to participants in the control group, persons who saw the video reported greater condom use in their most recent sexual encounter along with more consistent condom use throughout a two month period. Self-efficacy to refuse to have unprotected sex was greater in the treatment group compared to the control group (Sanderson & Yopyk, 2007). Nonetheless, out of four areas in which self-efficacy with regard to condom use was assessed, only refusal to have unprotected sex varied between the control and the treatment groups. Participants in the treatment group also reported greater intentions to use condoms compared to individuals in the control group (Sanderson & Yopyk, 2007).

Sanderson and Yopyk's (2007) study offers support that a video can be utilized to impact one's perceived behavioral control. Plus, the finding that intentions were greater in the treatment group compared to the control group despite a between-group difference

in only one area of self-efficacy could mean other components of the TPB were also affected by the video. Unfortunately, Sanderson and Yopyk (2007) did not assess participants' attitudes or subjective norms associated with condom use.

### **Summary**

A review of the literature has not revealed a study in which an experimental design was used to test an intervention for the purpose of concurrently increasing participants' attitudes, subjective norms, and perceived behavioral control associated with PHS. Nor is there research showing the effect of such an intervention on intentions to seek help from a mental health professional. The discrepancy between the number of college students experiencing a psychological problem and the number who actually seek out the benefits of professional mental health services (see Blanco et al., 2008), coupled with the lack of awareness many students appear to have about UCCs is a significant motivating factor for the current study. For this reason, it was considered extremely important to design and test an intervention, in line with the TPB, which may increase the likelihood that students will seek psychological help for problem amelioration. If effective, it, or a similar intervention, could be utilized during freshmen orientations, classes, or counseling center outreach programs to orient college students to UCC services and potentially increase their use of such resources.

Although some research has been conducted using the TPB to describe help seeking intentions in a variety of populations, the application of the full model to samples of college students is scarce (Jarvis, 2002; Mackenzie et al. 2004). Research on the TPB could benefit from new tactics. Instead of the continued use of an approach that focuses on influencing or assessing individual variables, one could intervene upon and assess the

entire TPB model at once. This would permit identification of the components given the greatest weight; whereas, intervening on or assessing each component separately eliminates valuable contextual variables that can influence one's interpretation (Romano & Netland, 2008). By testing the full model, the approach advocated for in the current study remains true to Ajzen and Fishbein's (1980) proposition that individuals differ with regard to which components best predict intention to perform a behavior.

The current study adds to the literature on PHS by employing a two-group randomized posttest only design to assess the effects of a video on participants' intentions to seek psychological help, attitudes toward PHS, subjective norms associated with PHS, and perceived behavioral control over seeking psychological help. Structural equation modeling procedures for comparing mean scores of latent constructs were used for the primary analyses of group differences. Secondly, the utility of the full TPB model for describing intentions to seek help among college students was assessed. Should the full model prove useful, it would make little sense to continue limiting future research by not incorporating all components of the TPB in order to explain PHS intentions in college students.

### **Hypotheses**

Based on the literature reviewed, the current study tested the following hypotheses.

1. The TPB described by Ajzen (1985; 1991) will demonstrate good fit with data collected during the experiment.
2. In comparison to participants in the no-intervention control group, participants in the treatment group will have

- a. more positive attitudes towards seeking help for a psychological problem
- b. more positive subjective norms associated with seeking help for a psychological problem
- c. greater perceived behavioral control over seeking help for a psychological problem
- d. greater psychological help seeking intentions

## **Chapter 3**

### **Pilot Study**

The primary purpose of the pilot study was to create a video that would increase college students' intentions to utilize mental health services when faced with a psychological problem. To this end, several steps were taken to identify stimuli that should be included for the video. Research on the effectiveness of psychotherapy, literature on various theories such as the theory of planned behavior (Ajzen, 1985; 1991), the elaboration likelihood model of attitude change (Petty & Cacioppo), social marketing theory (Rochlen & Hoyer, 2005), and social learning theory (Bandura, 1977; 1978), as well as suggestions made in the psychological help seeking literature were relied upon to develop this video. The procedures for video development are specified in greater detail below.

### **Method**

#### **Participants**

Participants for the pilot study were 20 undergraduate students taking psychology courses at a Midwestern University. Participation was limited to the first 10 women and 10 men who contacted the principal investigator after they were sent a recruitment email. Limiting this sample to the first 10 women and 10 men was done to balance sex representation in the ratings of the various stimuli presented to them to be selected in the

final video. Students received \$20 gift cards to a national retail chain for their participation. Unfortunately, up to five cases were deleted in each analysis of stimuli ratings due to extensive missing data. This was likely due to the length of time required to complete the pilot study. Table 3.1 contains demographic information for all aspects of the pilot study.

Table 3.1

*Demographic Information for Pilot Study*

Pilot Study Component	n
Ratings of Stimuli*	
Male	10
Female	10
Video Recordings	
Gender	
Male	14
Female	27
Participant Type	
Undergraduate	28
Master's	3
Doctoral	8
Significant Others	2
Vocal Recordings	
Gender	
Male	9
Female	28
Participant Type	
Undergraduate	22
Master's	1
Doctoral	14

*Note.* \* All raters were undergraduate students. No other demographics were collected.

### **Generation of Stimuli**

**Statements and testimonials.** Several statements in favor of seeking help from a mental health professional were adapted from research on psychotherapy effectiveness (e.g., Shadish et al., 1997; Smith & Glass, 1977; Smith, Glass, & Miller, 1980).

Statements were written specifically with variables from the Theory of Planned Behavior (TPB; Ajzen, 1985; 1991) in mind. For example, when creating a statement targeting subjective norms a reference was made to important others such as friends and family members and their perception of PHS. In addition, some statements of general information about PHS and university counseling centers (UCCs) were created.

Suggestions made by Hammer and Vogel (2010) and Rochlen and Hoyer (2005) were considered for presentation of content, such as limiting passive language and incorporating more active descriptions of psychotherapy by including words like “plan,” “attack,” and “consultant.” Overall, the intent when generating statements was to write each statement as concisely as possible in order to maximize the total number available for pilot ratings.

In addition to arguments in favor of seeking help from a mental health professional, anonymous testimonials about persons' positive experiences in psychotherapy were gathered. A snowball sampling procedure was used such that a request for testimonials was placed on a university wide electronic bulletin board asking readers to share their experiences with counseling and to forward the request to friends and family. The same request for testimonials was emailed to undergraduate instructors of counseling courses offered by a counseling psychology department at a Midwestern university, who then forwarded it to their students. No incentive was offered in exchange

for these testimonials. Potential respondents were informed that their responses might be used in a video designed to increase psychological help seeking of college students. They were also informed that the content of their responses would be altered to remove identifying information. Individuals who chose to provide a testimonial entered it into an online database called inQsit (Fortriede & Draper, 1996). A total of eight responses were received and subsequently edited by the primary investigator to be pilot tested in the same manner as statements generated by the primary investigator for the script.

The arguments and testimonials generated in this step became potential script statements. Potential script statements were submitted to two counseling psychologists for guidance on modification or elimination of content. For example, a suggested modification was to be consistent with wording instead of switching between “counseling” and “psychotherapy” within the same statement. After the primary investigator made the appropriate changes, 43 arguments and 8 testimonials were retained for pilot testing.

**Video clips.** Volunteer actors to participate in a video depicting the counseling process were recruited via snowballing sampling procedure. The primary researcher sent recruitment emails to doctoral and masters students in a counseling psychology department at a Midwestern university inviting them to participate and to inform their undergraduate students about this opportunity. Two doctoral students invited their significant others to participate. Undergraduate volunteers signed up for specific time slots while doctoral students participated as they became available. Each volunteer was required to sign a talent waiver provided by the university prior to being recorded. This waiver permits the future display of volunteers’ images without monetary compensation.

In exchange for participation, undergraduate students received course credit. Doctoral and masters students were given a \$10 gift card that could be used at a nation-wide retail chain. A total of 8 doctoral students and 2 of their significant others, 3 master's students, and 28 undergraduate students agreed to be filmed for this project.

With the help of a film crew provided by the university's Teleplex department, filming proceeded over the course of three days. The images captured during this time included portrayals of mock counseling sessions, individuals looking distressed, and persons completing paperwork or signing in for counseling. In the mock counseling scenes a counselor was shown interacting with an individual client, with a family, and with clients in a group setting. Counselors were mostly portrayed by doctoral or master's level students in counseling or counseling psychology; however, if one of these persons was unavailable then an undergraduate student took on this role. Interestingly, none of the video clips in which an undergraduate student portrayed a counselor were retained after pilot testing. Undergraduate students portrayed the clients. Each counselor was paired with as many clients as time would permit. An assistant to the primary researcher gave each dyad or group a problem prior to the start of filming. Participants were permitted to improvise their discussion, provided they avoided actual personal problems.

Aside from mock counseling sessions, undergraduate students were also filmed via "pickup shots." Pickup shots were defined as any recording that was not a mock counseling session. This sequence was structured so that students were videotaped completing paperwork, standing at a clinic sign-in window, and walking down a hallway. The final pickup shot was left to the creativity of each student. They were only asked to

portray themselves as distressed. Examples chosen by students included leaning against a wall, sitting in a stairwell, sitting on the floor, and pacing back and forth.

All images of counseling sessions and pickup shots were captured from multiple angles using handheld and stationary high definition cameras. The use of multiple angles provided a variety of stimuli for pilot testing. Images were shot closely and tightly to minimize distractions in the background. Sound was not recorded during filming. This was done to decrease the number of ratings required from pilot test participants, and eliminated the likelihood that portions of video would be unusable because of background sounds or poor content of discussion.

The final step of video preparation prior to the pilot study required the primary investigator to sift through all footage captured over the three-day period to identify clips appropriate for pilot testing. This process was undertaken with a few guiding principles. First, in order for a clip to be selected for further analysis it was desirable that the camera shot was stable (no shaking of the camera). Second, images with background movement (e.g., persons walking through the shot, doors opening and closing quickly) were avoided. Third, a film segment was excluded if a participant broke character or looked at the camera while acting. Finally, product names were avoided as much as possible. For instance, shots in which individuals carried a cup with a logo of a specific coffee chain were excluded. A total of 500 video clips were identified as useable via this method. Because of the expected burden of rating so many stimuli, the primary researcher decided to cull further. This was accomplished by eliminating duplicate clips that were shot from the same angle and in which the same counseling dyad was speaking. In addition, clips were reduced to 5-15 seconds in length to decrease burden, but also to provide a range of

diverse stimuli with which to work when the time came to put the final video together. A total of 217 clips remained for pilot testing after these steps were taken (150 mock sessions, 67 pickup shots).

**Vocal recordings.** Volunteers for the audio-recording of statements and testimonials were recruited via snowballing sampling procedure. The primary researcher sent emails to doctoral and masters students in a counseling psychology department at a Midwestern university inviting them to participate. In addition, a request was made that they inform students about this opportunity in the undergraduate classes they were teaching. Participation was also solicited from the chairpersons of the theater, telecommunications, and communication studies departments on campus. These individuals agreed to forward the opportunity for narration experience to students in their department. All parties signed up for specific time slots. Each volunteer was required to sign a talent waiver provided by the university prior to being recorded. This waiver permits the future use of volunteers' voices without monetary compensation. In exchange for participation, undergraduate counseling psychology students received course credit. Doctoral and master's students and students from the theater, telecommunications, and communication studies departments were given a \$10 gift card that could be used at a nation-wide retail chain. A total of 37 voice recordings were made from those who agreed to participate: 14 doctoral students, 1 master's student, and 22 undergraduate students.

With the help of a crew from the university's Teleplex department, volunteers were recorded over a two-day period in April of 2010. At that time it was unclear which statements and testimonials would be retained after pilot testing, so volunteers read them

all. Each volunteer also read the following statement: “Most people seek help from a friend or family member when they have a problem.” This was used as the stimuli from which ratings of vocal quality were provided in the pilot study. Without this decision, a large burden would have been placed on participants by asking them to rate 51 script statements for each of the 37 voices, on top of the other required stimuli ratings.

### **Instruments**

In order to obtain ratings of the stimuli generated for the pilot study, the literature on the ELM was consulted. Ideally, standardized measures would have been utilized, but no such tools have undergone rigorous testing. Most assessments of stimuli have been conducted using items from previous literature or items generated on a rational basis for a particular study.

Research on the ELM has not established one method for assessing the strength of messages (Petty & Cacioppo, 1986). However, Petty and Cacioppo indicated that many researchers have members of the target population rate arguments using a semantic differential scale. Therefore, this tradition was followed by utilizing items consistently employed in studies in which script statements, voices, and images have been evaluated (Krauss, Apple, Morency, Wenzel, & Winton, 1981; Liu & Shrum, 2009; Mallet & Lallemand, 2003; Miniard, Bhatla, Lord, Dickson, & Unnava, 1991; Rennels, Bronstad, & Langlois, 2008; Rhodes & Tremewan, 1996; Zuckerman, Miyake, & Hodgins, 1991). Participants were instructed to read each script statement and then use the four items provided to offer their perception of it (e.g., How strong of a case does this statement make in favor of seeking counseling?). Bipolar adjectives (weak – strong) were the basis for each response. Values for the semantic differential scale with bipolar adjectives

ranged from 1 to 7. The order of presentation of each script statement was randomized by the data collection software.

Participants were then instructed to select a video icon in order to watch a series of video clips. Each video clip contained a number in the bottom corner that matched a number on the response form. This allowed participants to ensure they were assigning ratings to the correct image. Participants were encouraged to familiarize themselves with the items prior to beginning. Rating were provided on a 5-item scale (e.g., How would you describe your feelings toward this clip?) with bipolar adjectives (e.g., Negative – Positive) for the mock counseling sessions as well as pick up shots. However, the final two items differed between mock counseling sessions (e.g., How relevant is this clip to counseling?) and pick up shots (e.g., How relevant is this clip to psychological help seeking?). In order to limit the length of time it would take to load individual clips, three segments were utilized. This allowed for randomization of segment order while reducing the large amount of time that would have been required for participants to select a clip, wait for it to load, and then rate it. A 10 second pause was incorporated between each video clip within a segment. During the pause words appeared instructing participants to provide their ratings. Values for the semantic differential scale with bipolar adjectives ranged from 1 to 7.

For ratings of voices participants were instructed to select an icon that cued the recording. They were also instructed to rate each voice on six bipolar adjectives (e.g., Unattractive – Attractive). Values for the semantic differential scale with bipolar adjectives ranged from 1 to 7. All pilot study scales are included in Appendix A along with instructions.

## **Procedure**

Prior to the pilot study, permission to proceed was received by the university's institutional review board. Participants for the pilot study were recruited by email as described earlier. In order to participate, persons were required to email the principal investigator their name and sex. This step was intended to maintain a balanced representation of 10 females and 10 males. Once 10 members of each sex were identified no more persons were permitted to participate. After communicating a desire to participate, volunteers were emailed an informed consent document along with Internet links to modules within the inQsit program (Fortriede & Draper, 1996) containing the stimuli to be rated.

## **Analyses**

### **Script Statements**

A total scale score was generated from ratings on the 4-item semantic differential scale used to assess message strength. Based on total scores from participant ratings, a mean strength rating and standard deviation was derived for each statement. Next, mean scores were ordered from highest to lowest. Higher scores were indicative of greater strength, and conceptualized as most appropriate for inclusion in the video per ELM guidelines (Petty & Cacioppo, 1986). A median split (median = 20.67) was used such that the lowest one-half of statements were eliminated from consideration for inclusion in the video. Appendix B contains all statements evaluated by participants, followed by rank-ordered means and standard deviations for those statements retained after pilot testing.

The next step was to identify which statements to include in the video. Four criteria were considered when making this determination. First, not all statements could

be used, even after pilot testing, because of the primary investigator's concern that participants may grow frustrated with a long video and quit the study. Second, messages with high mean strength score were desirable. Third, preference was given for statements with the smallest standard deviations. A large standard deviation for the ratings was considered representing ambiguity among participants about an item's strength. This method helped maximize the use of stimuli with strong, consistent ratings. Lastly, a script statement was eliminated from further consideration if it was impossible to locate a retained voice that had read the statement in a non-distracting manner (e.g., coughing, stuttering, mispronunciations). The statements that were employed in the video are marked by an asterisk in Appendix B.

### **Video Clips**

The method of analysis for video clips was slightly different than for the other categories of stimuli. This is because two components were taken into account: 1) peripheral cues such as attractiveness and affective response, and 2) how well participants felt the clip represented counseling or, in the case of pickup shots, the relevance of the clip to psychological help seeking (PHS). Thus, identification of which video clips to retain involved scrutiny of scores in both these domains.

To begin, ratings for mock counseling sessions and pickup shots were examined separately. The 5-item semantic differential scale was broken up into two subscales such that a mean and standard deviation was derived for each video clip using a total score from the three items assessing peripheral cues, while a separate mean and standard deviation was computed using a total score from the two items assessing the clips representativeness of counseling, for mock sessions, or its relevance to PHS, for pickup

shots. Next, the 150 mock session clips were ordered from highest to lowest based on peripheral cue ratings. Per ELM guidelines (Petty & Cacioppo, 1986), video clips with very high or very low peripheral cue ratings were undesirable because they could distract the viewer away from the message content targeting attitude change. Therefore, quartile splits were calculated. Mock sessions rated above the 75<sup>th</sup> percentile (rating of 15.87 or higher) or below the 25<sup>th</sup> percentile (rating of 14.24 or lower) were eliminated. The same procedure was repeated for pickup shots (75<sup>th</sup> percentile = 13.92; 25<sup>th</sup> percentile = 11.85).

The remaining video clips (mock session = 76; pickup shots = 32) were ordered from highest to lowest based on mean scores for counseling session representativeness (for mock sessions) or relevance to PHS (for pickup shots). Next, a median split (median mock sessions = 11.71; median pickup shots = 9.89) was used such that the lowest half of video clips were eliminated from further consideration, leaving only the most representative /relevant video clips. Appendix C contains means and standard deviations for the 38 mock sessions and 16 pickup shots retained for further consideration.

The final step was to identify images to include in the video for the main study. A few points were considered when making this determination. First, including all 54 clips would have resulted in a large number of transitions that could be distracting to the viewer, thus no effort was made to use them all. Second, standard deviations of mean rating of the video shots were examined with preference given to those video clips with the smallest standard deviations. A large standard deviation was considered representing ambiguity in participant ratings of the clips. This method helped maximize the use of stimuli with strong, consistent ratings. Third, clips that best fitted the content of the retained script statements were used (e.g., showing distressed students while the narrator

was describing how problems affect persons). Thus, final decisions surrounding which clips to employ were guided rationally with an effort to balance use of mock sessions and pickup shots. Images included in the final video are marked by an asterisk in Appendix C.

### **Vocal Recordings**

Analysis of vocal recordings followed tenets of the ELM (Petty and Cacioppo, 1986), such that the highest quality and lowest quality voices were deemed inappropriate for inclusion due to their potential as peripheral cues to distract away from the primary message of the video. Therefore, a mean score and standard deviation for each voice was derived from total scores on the 6-item semantic differential scale used for assessing vocal quality. Next, voices were ordered from highest to lowest based on mean ratings. High scores were indicative of good vocal quality and low scores were indicative of poor vocal quality. Quartile splits were calculated. Voices rated above the 75<sup>th</sup> percentile (mean rating of 26.7 or higher) or below the 25<sup>th</sup> percentile (mean rating of 21.25 or lower) were eliminated, leaving a total of 19 voices for final consideration. Appendix D contains means and standard deviations of vocal quality ratings. Asterisks mark the voices used in the final video. Voice number 15 fell very near the middle of vocal ratings, and the standard deviation for voice 15 was the lowest amongst those retained. This, along with the narrator making few errors or stutters while reading the script, lead to the selection of voice 15 as the primary narrator for the video. Voices 32, 27, and 18 were selected for the three testimonials that had been retained after pilot testing.

Selection of voices 32, 27, and 18 for the three testimonials was based on a rational approach. That is the individuals providing these narrations read the testimonials

without significant problems (e.g., stutters, mispronunciation of words, etc.) when compared to the other 33 retained voices (narrator omitted). Those whose voices were retained after pilot testing were not contacted to read the script again. This may seem to be a limitation because recordings could not be refined by having these individuals come back to reread the script. On the other hand, it may also be considered a strength, given that individuals produced their recordings in one day (including the recording of the statement used for pilot testing vocal quality). Having individuals whose voices were retained come back to reread the script at a later time could introduce a potential confound as their voices might have changed as the result of factors such as allergies or illness.

## **Main Study**

### **Design**

The purpose of the main study was to test the effectiveness of a video designed in line with the TPB (Ajzen, 1985; 1991) for increasing help seeking potential in college students. To test the effectiveness of the video, a randomized between-group, posttest-only, experimental design was employed. An advantage of a randomized between-group design is that it controls for extraneous variables and reduces error variance (Heppner, Wampold, Kivlighan, 2008). Heppner et al. (2008) indicated that a posttest-only design controls for most threats to internal validity. In fact, these authors argued that a randomized posttest-only design “is the prototypical experimental design and most closely reflects the characteristics needed to attribute a causal relationship from the independent variable to the dependent variable” (Heppner et al., 2008, p. 150). In addition, there is no need to gather participants’ personal information and tie it to their

responses as required when a pretest is given. This permitted anonymous responding in the current study. Furthermore, given the randomization into control and treatment groups, it can be assumed that responses of the control group are representative of the responses of the treatment group prior to the intervention (Campbell & Stanley, 1963).

**Variables.** Group assignment (control or treatment) served as the independent variable for the main study. Those in the treatment group observed the video prior to responding to measures of dependent variables whereas those in the control group saw the video after responding to the measures. Dependent variables consisted of latent constructs of the TPB: Attitudes toward PHS, subjective norm associated with PHS, perceived behavioral control over PHS, and PHS intentions. Each of these latent constructs was assessed with standardized measures (see Measures section).

### **Participants**

A convenient sample of students was recruited via a campus-wide email to the general student bodies of a small Midwestern liberal-arts college and a large Midwestern state university. Potential participants had to be 18 years of age or older. A total of 420 responded to the recruitment email, of which 255 were in the control condition and 165 in the treatment condition. Responses from ten students in the control group and one in the treatment group were unusable because of extensive missing values. Responses from twenty five (17 control, 8 treatment) additional students were deleted following analysis for univariate and multivariate outliers as described in the next chapter. Due to concerns that graduate ( $n = 44$ ) and undergraduate students ( $n = 340$ ) may comprise very different samples, only data from undergraduate students were used in the primary analyses of this study. The exception to this rule was the analysis of manipulation check data. This

occurred because there was no way to connect data gathered on the manipulation check against demographic data.

The remaining sample consisted of 340 undergraduate students, of which 204 were in the control group and 136 in the treatment group. A total of 280 women, 103 men, and 1 transgendered individual participated. There were 180 individuals with prior experience seeking help from a mental health professional (i.e., psychologist, social worker, or counselor) and 204 without this experience. For model testing purposes, the sample was divided such that the model testing was conducted separately for the treatment and control group. Thus, the ratio of participants to parameter estimated was reduced to 5:1 for the control group and 3:1 for the treatment group. Demographic and background information of participants are presented in Table 3.1.

### **Measures**

**Demographics.** A demographic sheet was developed on which students were asked to indicate their sex, race, year in school (freshman, sophomore, etc.), religious preference, and sources of prior PHS that they checked from a list of several sources of help: psychologist/social worker/counselor (mental health professionals), psychiatrist, physician, member of the clergy, other, or none.

**Beliefs about psychological services (BAPS).** The BAPS (Ægisdóttir & Gerstein, 2009) contains 18 items and is based on Fischer and Turner's (1970) Attitudes Toward Seeking Professional Psychological Help scale (ATSPPH). Some items were generated by college students asked to list positive and negative attributes of psychologists and psychological services. Based on results from three studies in which a series of exploratory and confirmatory factor analyses were performed Ægisdóttir and

Gerstein (2009) reported that the BAPS contains three factors/subscales. They labeled these three factors Intent, Stigma Tolerance, and Expertness.

Cronbach's alpha coefficient for the total score was reported as .88 from a sample of college students in the original study on the scale (Ægisdóttir & Gerstein, 2009) and .89 in a sample of college students assessed by Choi (2008). Known-groups validity was demonstrated when the BAPS total score discriminated between individuals with and without prior counseling experience. Convergent validity was demonstrated by administering the BAPS with the ATSPPH (Fischer and Turner, 1970) resulting in high correlations between the total scores of both scales. Divergent validity was demonstrated by a non-significant correlation between the BAPS and the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960). Subscales of the BAPS served as indicators of latent variables from the TPB in the current study. In the current study, possible scores on each subscale of the BAPS ranged from 1 – 6.

Table 3.2

*Demographic Information*

Demographic Variable	Control Group (n = 204)		Treatment Group (n = 136)	
	n	%	n	%
<b>Gender</b>				
Female	150	74	104	77
Male	54	27	31	23
Transgender	0	0	1	.7
<b>Student Type</b>				
Freshman	52	26	39	29
Sophomore	40	20	32	24
Junior	62	30	35	26
Senior	50	25	30	22
<b>Race</b>				
African American	5	3	1	.7
Asian-Pacific Islander	5	3	3	2
Biracial	1	1	2	2
White	187	92	129	95
Hispanic	1	.5	1	.7
Other	5	3	0	0
<b>Religious Preference</b>				
Atheist	7	3	6	4
Agnostic	29	14	15	11
Buddhist	0	0	1	.7
Jewish	1	.5	1	.7
Protestant Christian	118	58	81	60
Roman Catholic	15	7	12	9
Other	34	17	20	15
<b>Sources of Help Seeking</b>				
Mental Health	96	47	65	48
Psychiatrist	32	16	24	18
Physician	37	18	25	18
Clergy	38	19	15	11
Other	2	1	1	.7

*Note:* Percentages > 1 are rounded to the nearest percent.

***Intention to seek psychological help.*** The Intent subscale of the BAPS consists of 6 items measuring participants' intentions to seek psychological help. Ægisdóttir and Gerstein (2009) described this subscale as representing the intention to perform a behavior component of the TPB. Items (e.g., I would be willing to confide my intimate concerns to a psychologist) are rated on a six point Likert-type scale with response options ranging from strongly disagree to strongly agree. Higher scores indicate greater intentions to seek psychological help. Known-groups validity was demonstrated when Intent discriminated between individuals with and without prior counseling experience (Ægisdóttir and Gerstein, 2009). Divergent validity was demonstrated by a non-significant correlation between Intent and the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960). Convergent validity was demonstrated via moderate correlations between Intent and the original ATSPPH and its subscales as well as the short version of the ATSPPH. Ægisdóttir and Gerstein reported a Cronbach's alpha reliability of .82 for this scale. Similarly, Choi (2008) reported Cronbach's alpha of .84. In the current study Cronbach's alpha was .82.

***Attitudes.*** Ægisdóttir and Gerstein (2009) indicated that items on the Expertness subscale of the BAPS correspond to the attitudes component of the TPB. Expertness consists of 4 items and measures a belief in the merits of counseling. Items (e.g., It is good to talk to someone like a psychologist because everything you say is confidential) are rated on a six point Likert-type scale with response options ranging from strongly disagree to strongly agree. Higher scores indicate more positive attitudes toward seeking psychological help. Known-groups validity was demonstrated when Expertness discriminated between individuals with and without prior counseling experience

(Ægisdóttir and Gerstein, 2009). Divergent validity was demonstrated by a non-significant correlation between Expertness and the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960). Convergent validity was demonstrated via moderate correlations between Expertness and the original ATSPPH and its subscales as well as the short version of the ATSPPH. Cronbach's alpha coefficient for this subscale has been reported as .72 (Ægisdóttir & Gerstein, 2009; Choi, 2008). In the current study Cronbach's alpha was .77.

*Subjective norms.* Ægisdóttir and Gerstein (2009) reported the Stigma Tolerance subscale of the BAPS was in line with the subjective norms component of the TPB. Stigma Tolerance consists of 8 items and assesses stigma and negative beliefs associated with counseling. Items (e.g., I would feel uneasy going to a psychologist because of what some people might think) are rated on a six point Likert-type scale with response options ranging from strongly disagree to strongly agree. Known-groups validity was demonstrated when Stigma tolerance discriminated between individuals with and without prior counseling experience (Ægisdóttir and Gerstein, 2009). Divergent validity was somewhat compromised as a significant but low correlation was found between Stigma Tolerance and the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960; Ægisdóttir and Gerstein, 2009). Convergent validity was demonstrated via moderate correlations between Stigma Tolerance and the original ATSPPH and its subscales as well as the short version of the ATSPPH. Ægisdóttir and Gerstein (2009) reported a Cronbach's alpha coefficient of .78 for Stigma Tolerance, whereas in Choi's (2008) sample it was .83. Cronbach's alpha was .82 in the current study.

**Inventory of attitudes toward seeking mental health services (IASMHS).** The IASMHS (Mackenzie, Knox, Gekoski, & Macaulay, 2004) is a 24 item scale developed from the ATSPPH (Fisher & Turner, 1970). In addition to modifying existing items from the ATSPPH, 12 items were deleted and 7 were added, 4 of these items were intended to tap the perceived behavioral control component of Ajzen's (1985) TPB. Cronbach's alpha coefficients reported by Mackenzie et al. (2004) for the total scale was .87, with .85 ( $p < .01$ ) being reported for test-retest reliability over a 3 week period. The IASMHS was developed and based on responses from multiple samples of college students and a sample of adults at a public transportation station.

Mackenzie et al. (2004) reported that exploratory factor analysis resulted in the emergence of three factors. These three factors were confirmed on subsequent sample of participants. Each subscale derived from these factors represents different concepts of the TPB. However, because this scale was developed from the ATSPPH and resulted in similar subscales as the BAPS (e.g., measure of stigma) concerns about artificially inflated relationships among indicators of latent variables are raised. Concerns about the validity of two of the IASMHS subscales made this point moot.

Scores on the total score from the IASMHS from both samples (college students and patrons of a train station) were positively associated with past use of professional psychological services. However, in the college sample help seeking propensity was most strongly associated with prior treatment. Psychological openness and indifference to stigma were both weakly associated with a history of treatment. In addition, a moderate correlation between help seeking propensity and college students' intentions to use

psychological services was found, but the other subscales from the IASMHS were weakly associated with these intentions.

Finally, Mackenzie et al. (2004) proposed that discriminant validity would be demonstrated by a negative relationship between the IASMHS and participants' intentions to talk to family and friends about their problems. To the contrary, psychological openness and indifference to stigma were both significantly, positively associated with college students' intentions to speak with their family and friends about their problems. Help Seeking Propensity, on the other hand, was unrelated to these intentions. The uncertainty surrounding the validity and psychometric properties of the other subscales from the IASMHS led to the decision to only use the help seeking propensity subscale in the current study. Additionally, it is the only validated measure of perceived behavioral control over PHS available in the literature. In the current study, scores on the Help Seeking Propensity subscale had a possible range of 1 – 5, with higher scores indicating greater perceived behavioral control over obtaining psychological help despite known barriers.

***Perceived behavioral control.*** Help Seeking Propensity has 8 items and is purported to represent the perceived behavioral control component of the TPB (MacKenzie et al., 2004). This subscale contains 3 items designed by the creators of the IASMHS and 5 items from Fischer and Turner's (1970) ATSPPH. Ratings for items (e.g., It would be relatively easy for me to find the time to see a mental health professional for psychological problems) are provided on a five point scale (disagree to agree) with higher scores indicating greater perceived behavioral control over PHS. Cronbach's alpha coefficients was reported as .76, and test-retest reliability assessed over 3 weeks was .64

( $p < .01$ ) (Mackenzie et al., 2004). In the current study Cronbach's alpha reliability was .78.

**Beliefs and evaluations about counseling scale (BEACS).** The BEACS (Choi, 2008) is a 28-item scale developed on a sample of college students, specifically with the principles of the Theory of Reasoned Action in mind. Choi (2008) reported five factors/subscales for this instrument, which were based on results from exploratory factor analyses. The subscales are: Expectancy for Positive Outcome, Tolerance for Negative Quality, Expectancy for Positive Norm, Tolerance for Negative Norm, and Tolerance for Negative Outcome. Choi found that the BEACS partially demonstrated known groups validity by differentiating between individuals with and without prior counseling experience. However, the BEACS did not discriminate between men and women as expected. Evidence for convergent validity was mixed with correlations between subscales of the BEACS and subscales of the BAPS ranging from low (.10 between Tolerance for Negative Norm and Expertness) to moderate (.61 between Expectancy for Positive Outcome and Expertness). Also of note, is that correlations between responses to the various subscales of the BEACS ranged from insignificant (-.07) to moderate (.50). In fact, only responses to Expectancy for Positive Outcome and Expectancy for Positive Norm were moderately correlated (.50), raising concerns about the construct validity of the BEACS. For the current study, scores on each subscale of the BEACS had a possible range of -15 to 15, with higher scores indicating more positive attitudes toward PHS or more positive subjective norms associated with PHS depending on which construct the subscale was intended to assess.

*Attitudes.* Three subscales of the BEACS are representative of the attitudinal component of the TPB. These subscales are Expectancy for Positive Outcome, Tolerance for Negative Quality, and Tolerance for Negative Outcome (Choi, 2008). Scores for these subscales are calculated via multiplying participants' beliefs about the outcome of a behavior by their evaluation of this outcome. Items assessing subjective beliefs about the outcome of a behavior (e.g., If I went to see a counselor I would learn new behaviors and skills) are rated on a five point scale with values ranging from one to six (extremely unlikely - extremely likely). Items assessing a participant's evaluation of each expected outcome (Learning new behaviors and skills is very unfavorable - very favorable) are rated on seven point scales ranging from -3 to 3. Multiplying beliefs and evaluations can result in scores for attitudes toward PHS ranging from -15 to 15. Higher scores indicate more positive attitudes toward PHS.

Convergent validity for these subscales has been demonstrated via significant correlations with the Expertness subscale of the BAPS (Choi, 2008). Responses to the Expectancy for Positive Outcome subscale of the BEACS were moderately to highly correlated with responses from Expertness ( $r = .61, p < .01$ ). Responses to Tolerance for Negative Quality ( $r = .42, p < .01$ ) were weakly to moderately correlated with responses from Expertness, and responses to Tolerance for Negative Outcome were weakly correlated with Expertness responses ( $r = .24, p < .01$ ).

Moderate correlations between responses for the different scales are desired for the current study because these scales will serve as indicators of latent variables when conducting structural equation modeling (SEM) in the primary analysis. The moderate correlation between responses on Expertness and Expectancy for Positive Outcome is

believed to signify that each adds uniquely to the measurement of attitudes (Kline, 2005). When the responses for various indicators are highly correlated it is believed that they measure redundant information rather than unique aspects of the latent variable, while weak correlations may indicate that indicators are not measuring the same latent construct at all. Therefore, only the Expectancy for Positive Outcome subscale was used in the current study. Further support for this decision is Choi's (2008) finding that Expectancy for Positive Outcome was the best predictor of intentions to seek help from a mental health professional in comparison to the other subscales from the BEACS. Cronbach's alpha for Expectancy for Positive Outcome was reported as .90 (Choi, 2008). In the current study Cronbach's alpha was .87.

*Subjective norms.* The Tolerance for Negative Norm and Expectancy for Positive Norm subscales of the BEACS represent the subjective norms component of the TPB (Choi, 2008). These subscales are measured similarly to the attitudinal items from the BEACS. Participants provide ratings of their beliefs of how important would react to the participant seeking psychological treatment (e.g., If I went to see a counselor, most of these people would not mind) on scales ranging from one to six (unlikely to likely). This is multiplied by participants' ratings of items assessing the extent to which they would find important others' reactions unfavorable to favorable (e.g., Not mind my seeking counseling). These favorableness ratings are provided on a scale ranging from -3 to 3. Thus, scores can range from -15 to 15 on each item assessing subjective norms as conceived within the BEACS.

Convergent validity for Expectancy for Positive Norm was demonstrated by a moderate correlation ( $r = .59, p < .01$ ) with Stigma Tolerance from the BAPS, whereas

Tolerance for Negative Norm had a weak correlation with Stigma Tolerance ( $r = .23, p < .01$ ) (Choi, 2008). Predictive validity was demonstrated by Expectancy for Positive Norm predicting scores on the Intent subscale of the BAPS (Choi, 2008). Tolerance for Negative Norm did not predict Intent scores. Given the low correlation between the BEACS' Tolerance for Negative Norm's and BAPS' Stigma Tolerance and its failure to predict intentions to seek psychological help, it was not used as an indicator of subjective norms in the current study. Only Expectancy for Positive Norm was used. Cronbach's alpha for Expectancy for Positive Norm was .90 (Choi, 2008). In the current study Cronbach's alpha reliability was .90.

**Manipulation check.** In order to assess whether the video increased students' knowledge of PHS an eight-item questionnaire was constructed using manipulation check procedures similar to those outlined in Ægisdóttir et al. (2011). Specifically, the primary investigator generated items for the manipulation check based on information that could be gleaned from watching the video. Some items referenced statistics discussed in the video, while others required inference from footage (e.g., Counselors are of various races/ethnicities). After constructing potential questions for the manipulation check, the questions were submitted to a counseling psychologist who is an expert in PHS to assess the questions content validity. Following this expert review, content of some items were modified based on suggestions for increased clarity and content validity. A total of eight items were used, each with three response options: True, False, or I Don't Know. An example item is: "A majority of university counseling centers offer free services to students." (see Appendix F). To score responses from the manipulation check one point was given for a correct answer and zero points were given for either an incorrect answer

or “I Don’t Know”. Scores could range from zero to eight, with higher scores indicative of greater knowledge of information pertaining to PHS as described in the video.

### **Procedure**

**Treatment group.** Prior to beginning data collection, approval was received from the Institutional Review Board at a large Midwestern state university and the Human Research Participants Committee of a small Midwestern liberal-arts college. Students at both schools were recruited via six campus-wide emails (three per school) spaced two weeks apart. These emails contained information about the study and contact information for the primary researcher. A hyperlink within the email directed persons to the inQsit program (Fortriede & Draper, 1996) containing an informed consent document, video, and measures. Students were offered the opportunity to be entered into a drawing for one of six “thank you” gifts: an mp3 player or one of five gift cards to a nation-wide retail chain. If a student agreed to the terms of the informed consent, the inQsit program randomly assigned them to either the treatment or control condition.

Participants in the treatment condition were first directed to view the video created from stimuli generated in the pilot study. This video opened in a separate window on the computer screen and lasted approximately eight minutes. After watching the video, participants were directed to a separate inQsit module, which included the measures of the TPB. These measures were presented in a random order. After submitting their answers to the questionnaires, participants responded to the manipulation check measure, which assessed knowledge of information contained in the video. Following the manipulation check, students were directed to a debriefing statement explaining the purpose of the study, and information on how to access resources at their university’s

counseling center (e.g., hyperlinks to websites, phone numbers). Participants in the treatment condition were offered another opportunity to view the video at that time.

**Control group.** Students in the control condition were directed to an inQsit module, which contained the measures of the TPB presented in a randomized order. After submitting their responses, students responded to the manipulation check questions. This procedure permitted a comparison of scores on the manipulation questions between the treatment and control conditions. Lastly, after submitting their manipulation check questions, students were directed to a debriefing statement which explained the purpose of the study and information on how to access resources at their university's counseling center (e.g., hyperlinks to websites, phone numbers). At this time participants in the control condition were offered an opportunity to view the video. It is important to note that the inQsit modules were programmed so that participants could not change their answers to the TPB measures or the manipulation check after being presented the debriefing statement.

## **Chapter 4**

### **Results**

#### **Data Preparation and Preliminary Analyses**

**Missing values.** Missing values analysis for dependent variables revealed a low number of cases with no data (i.e., < 5%) per variable. Therefore, mean imputation was selected as the method to replace missing values. Although mean imputation has been criticized because it decreases variance within a data set, Tabachnick and Fidell (2007) noted there is little expected difference in results regardless of data imputation method when variables contain so few missing values.

**Univariate normality and outliers.** In order to assess for the assumption of multivariate normality a necessary criterion is that each dependent variable demonstrates univariate normality. Therefore, variables were assessed for univariate normal distribution. Due to the experimental design of the primary study, separate assessments for normality were conducted for the control and treatment groups (Tabachnick & Fidell, 2007). Examination of Q-Q plots for the control group revealed some deviation from normality on the Expertness, Intentions, and Stigma Tolerance subscales of the BAPS and on the Expectancy for Positive Norm subscale of the BEACS. Q-Q plots for the treatment group appeared to show normally distributed data. Therefore, an assessment for univariate outliers was conducted for each variable within the control and treatment

groups. Stem and leaf box plots as well as tables of outlier values were examined. This resulted in deletion of responses from five students (1 control, 4 treatment) containing outlying data. Follow up examination of Q-Q plots revealed normal univariate distribution of data for both the control and treatment groups.

**Multivariate normality and outliers.** Analysis of multivariate normality was conducted with the AMOS program. Results revealed a kurtosis value of 21.45 for the control group, and 15.84 for the treatment group. It is desirable to lower these values so they are as close to 0 as possible (Gao, Mokhtarian, & Johnston, 2008); however, the maximum likelihood estimation method used for the current analyses is robust to some multivariate non-normality (McDonald & Ho, 2002). This permits one to strike a balance between lower kurtosis and limiting the deletion of outlying cases. Deleting outliers has been recommended to decrease kurtosis and increase the likelihood of obtaining multivariate normality (McDonald & Ho, 2002; Tabachnick & Fidell, 2007). To assess for outliers, Mahalinobus distance was calculated for each case by entering all dependent variables into the AMOS program as a confirmatory factor analysis.

Next, critical values at  $p < .001$  level from a chi-square ( $\chi^2$ ) chart provided in Tabachnick and Fidell (2007) were utilized to identify cutoff values indicating multivariate outliers. Cases deemed to be outliers were deleted and this process was repeated until no more cases fell above the critical value. Responses from 20 students were deleted (16 control, 4 treatment). A re-examination for multivariate normality resulted in kurtosis of 3.56 for the control group and 1.57 for the treatment group. It has been shown that results can remain unbiased with a kurtosis as high as 7.98 (Gao et al., 2008). In addition, the kurtosis critical ratio for the treatment group provided by AMOS was 1.00, indicating

that kurtosis for this group was not significantly different from zero. Responses from 384 students (228 Control, 156 Treatment) remained of which 340 were undergraduate students whose data was used for the study's main analyses.

**Scale means, reliability and correlations.** Means and standard deviations of the subscales of the BAPS, IASMHS, and BEACS for the control and treatment groups are presented in Table 4.1. Cronbach's alpha reliabilities are presented in Table 4.2. As can be seen, most of the subscales intended for use in the main analysis had adequate Cronbach's alpha levels (George & Mallery, 2003).

Table 4.1

*Means and Standard Deviations*

Scale	Control		Treatment	
	M	SD	M	SD
Expertness (BAPS)	4.69	.93	4.92	.79
Stigma Tolerance (BAPS)	4.37	.96	4.57	.87
Intentions (BAPS)	4.22	.99	4.48	.89
Expectancy for Positive Outcome (BEACS)	8.22	3.47	7.82	3.31
Expectancy for Positive Norm (BEACS)	8.93	4.39	8.63	4.23
Help Seeking Propensity (IASMHS)	3.52	.75	3.74	.66

*Note.* Possible ranges of scores for subscales: BAPS = 1 – 5, BEACS = -15 – 15, IASMHS = 1 – 5.

It is important when performing structural equation modeling procedures that responses to indicators of a latent variable be moderately correlated (Kline, 2005). Moderate correlations imply that indicators are assessing similar, yet unique, aspects of a latent variable. High correlations may be a product of assessing redundant information, while low correlations raise doubts about whether indicators are measuring the same construct (Tabachnik & Fidell, 2007). As Table 4.2 shows the relationship among the scales used to assess the TPB constructs was acceptable. That is, the correlations among responses to all the subscales were moderately high.

**Parceling.** It was necessary to create parcels from the Help Seeking Propensity (IASMHS) subscale representing behavioral control over PHS, Intentions (BAPS) subscale measuring PHS intentions, and Expectancy for Positive Outcome (BEACS) to serve as indicators of their respective latent constructs. This was necessary, as no additional valid and reliable scales were located that assess these constructs. These subscales were parceled into three indicators each. A minimum of two indicators, but preferably three, are required per latent variable for model identification in structural equation modeling (SEM) (Kline, 2005). The Expectancy for Positive Norm and Stigma Tolerance subscales were parceled as well in order for their latent factors to meet the preference for three indicators. These two subscales were chosen over their companion indicators because they contained more items, thus maximizing number of items per parcel.

An alternative to creating parcels is using individual items as separate indicators of the latent variables (i.e., perceived behavioral control and intentions). Yet, this procedure is considered undesirable in structural equation modeling for three reasons.

First, models become too complex when a scale contains many items (Russell, Kahn, Spoth, & Altmaier, 1998). Some fit indices, such as root mean square error of approximation (RMSEA), are designed to favor a model with fewer parameters that can be nested within a more complex model (see Kline, 2005). Thus, a complex model containing individual items is penalized, making it harder to obtain good model fit. Second, the reliability of each item is expected to be lower than the reliability of the total scale, making it uncertain whether true variance or error is contributing most to the findings. Last, the assumption of multivariate normality in structural equation modeling is likely to be violated with individual items. In contrast, parceling increases score distributions making it more probable that this assumption will be met (Russell et al., 1998). Therefore, a parceling procedure outlined by Russell et al. (1998) was used. This procedure has been used in prior PHS research because it permits an increase in the number of indicators for a latent construct when only one scale is available (e.g., Vogel, Gentile, & Kaplan, 2008; Vogel, Wade, & Hackler, 2007; Vogel, Wade, & Hackler, 2008; Vogel, Wester, Wei, & Boysen, 2005). It also remains faithful to the latent construct the scale was created to measure.

Table 4.2

*Scale Reliability and Correlations*

Scale	1	2	3	4	5	6
1. Expertness						
Control	-					
Treatment	-					
2. Stigma Tolerance						
Control	.54*	-				
Treatment	.54*	-				
3. Intention						
Control	.60*	.53*	-			
Treatment	.67*	.58*	-			
4. EPO						
Control	.51*	.50*	.45*	-		
Treatment	.66*	.46*	.67*	-		
5. EPN						
Control	.45*	.55*	.40*	.54*	-	
Treatment	.56*	.59*	.56*	.63*	-	
6. HSP						
Control	.53*	.57*	.68*	.42*	.43*	-
Treatment	.50*	.52*	.70*	.55*	.51*	-
<b>Cronbach's <math>\alpha</math></b>						
Control	.77	.82	.82	.94	.92	.77
Treatment	.77	.81	.81	.93	.91	.76

*Note.* EPO = Expectancy for Positive Outcome; EPN = Expectancy for Positive Norm; HSP = Help Seeking Propensity.

\* $p < .01$

The method described by Russell et al. (1998) balances item loadings between each parcel. First, a single factor extraction using the maximum-likelihood estimation method in exploratory factor analysis was conducted on items from each scale (e.g., Vogel et al., 2005). Next, items were rank-ordered from highest to lowest by factor loadings. Based on this method, two parcels were formed for Expectancy for Positive

Outcome and Stigma Tolerance, and three parcels were formed for Intention. As suggested by Russell et al. (1998), item loadings were balanced between each parcel such that the items with the highest and lowest loadings were used for parcel 1, the items with the second highest and second lowest loading were used for parcel 2 and so on until all items of the subscales were associated with a parcel.

Three indicators were desired for the perceived behavioral control latent variable, but Help Seeking Propensity consists of eight items. Parceling three ways would not balance item loadings unless one parcel contained more items than the others. Therefore, two parcels containing two items were created by assigning the highest and lowest loading items to parcel 1 and the second highest and second lowest loading items to parcel 2. The four remaining items, which loadings fell in the middle range, were assigned to parcel 3.

### **Results of Manipulation Check**

Responses from 390 participants (control group:  $n = 239$ , treatment group:  $n = 151$ ) were submitted for an analysis of the adequacy of the video manipulation in this study. Thus, 93.7% of those originally assigned to the control group, and 91.5% of participants originally assigned to the treatment group submitted responses to the manipulation check. The results are found in Table 4.3 below. Questions on the manipulation check assessed participants' knowledge of content contained in the video. The expectation of this check was for those who watched the video to have greater awareness of various facts about and characteristics of PHS. A lack of group differences on this check would imply that the study was poorly manipulated.

Greater number of participants was available for this analysis compared to the number of completed responses from undergraduate students ( $N = 340$ ) for the main analyses because the manipulation check was administered after participants completed the main study. Thus, some participants may have been graduate students and some participants from the entire sample ( $N = 420$ ) seemed to have skipped the manipulation check. Participants' responses to the main study could not be tied to responses on the manipulation check because data were gathered in separate modules..

Table 4.3

*Percent of Participants Answering Incorrectly on the Manipulation Check*

Item	Control	Treatment
1. A majority of university counseling centers offer free services to students*	16%	4%
2. Counselors are of various races/ethnicities	15%	6%
3. Research has shown that most people get worse after seeing a counselor.	18%	7%
4. Individuals in counseling typically experience improvement during the first 3-4 sessions.*	58%	24%
5. Scheduling counseling appointments every two weeks or a month apart is discouraged at counseling centers.*	55%	22%
6. There is a university counseling center on my school's campus.	6%	1%
7. One purpose of a university counseling center is to act as a replacement for friends and family.	11%	10%
8. I have a good understanding of the purpose of university counseling centers.	21%	8%

*Note:* Percentages are rounded to the nearest percent. \* indicates items difficult to deduce without having seen the video.

Results of an independent-samples t test revealed a significant difference ( $p < .001$ ) between the treatment ( $M = 7.19$ ,  $SD = 1.30$ ) and the control group (mean = 6.00,

SD = 1.54) such that individuals in the treatment group answered more items correctly on the manipulation check. In fact, on average the treatment group missed less than one question while the control group averaged two errors. These findings supported the expectation that participants who saw the video should know more about PHS than persons who did not watch the video. Individuals in the control group had to rely solely on prior knowledge about PHS.

Frequency analysis of item responses suggested the video was effective as a means of dispensing PHS related information. Specifically, an examination of frequency of incorrect responses for items that would be difficult to deduce without having seen the video (e.g., A majority of counseling centers offer free services to students) revealed that members of the treatment group responded more accurately than those in the control group. Difficult items are marked in Table 4.3 for further scrutiny. Overall, results from the manipulation check support the video as effective in educating participants about PHS.

### **Primary Analysis I**

An SEM analysis was first performed to determine whether data from the control and treatment groups fit the model as described by the TPB (Ajzen, 1985; 1991) and to identify any modifications to the measurement model that may be appropriate to improve fit. Assessment of modifications to the measurement model was important given the numerous scales used to measure indicators of latent variables in this study. The two-step rule outlined in Kline (2005) for assessing model fit was employed. Results are reported in line with guidelines provided by McDonald and Ho (2002).

**Model identification.** Identification of the measurement model was met by setting one of the indicator loadings for each latent variable to one and by ensuring each factor had three indicators. The structural model was assessed by examining paths from one latent factor to another. No feedback loops were present nor was there mutual causation between latent factors. Thus, the structural model is recursive and identified (Kline, 2005). Finally, because there were more observations than free parameters (degrees of freedom = 48) in the full model, the model was identified.

Statistics used to assess model fit followed Kline's (2005) recommendations for SEM investigations. First, the  $\chi^2$  model statistic tests the null hypothesis that the proposed model fits perfectly in the population. Additionally, normed Chi-square ( $\chi^2 / DF$ ) values ranging from two to five have been recommended as indicative of adequate fit (Kline, 2005). The next fit statistic used, RMSEA, is considered to be a parsimony-adjusted index (Kline, 2005). This means it gives preference to simple models over more complex models with the same explanatory power. Browne and Cudeck (1993) suggested RMSEA values less than .05 indicate good approximate fit, .05 to .08 indicate reasonable fit, and values greater than .10 indicate poor model fit (see Kline, 2005). RMSEA also generates a 90% confidence interval. If the lower bound of the confidence interval includes .05 then model fit is said to be good. If the upper bound of the confidence interval crosses above .10 then model fit is believed to be poor. Finally, the Comparative Fit Index (CFI) was utilized. The CFI assesses the improved fit that is achieved with the proposed model in comparison to a baseline model (Kline, 2005). Values greater than .90 are desired.

Model fit statistics for the control and treatment groups are presented in Table 4.4. The adequacy of model fit was mixed for both groups, with  $\chi^2$  and RMSEA suggesting poor model fit and the normed Chi-square and CFI suggesting adequate fit.

Table 4.4

*TPB model fit statistics*

Fit statistic	Control	Treatment
$\chi^2$	155.7*	119.2*
$\chi^2/DF$	3.24	2.48
RMSEA (confidence interval)	.11 (.09 - .12)	.11 (.08 - .13)
CFI	.92	.93

\* =  $p < .05$

Figure 4.1 shows the TPB with standardized parameter estimates from the control and treatment groups respectively. The parameter estimates for the paths from the latent variables attitudes toward PHS and subjective norms associated with PHS to PHS intentions were not significantly different from zero in the control group. However, the path from attitudes toward PHS to PHS intentions was significant in the treatment group, but was not significant for the path from subjective norms to PHS intentions. All other parameter estimates for both groups were significant. Table 4.5 contains standardized factor loadings, most of which seem to be of appropriate size. Some concern is raised by the very high loadings of both parcels of expectancy for positive outcome and one parcel of stigma tolerance in each group. Such high loadings suggest these parcels may be

providing redundant information or may measure too narrow of a piece of the latent construct to which they are assigned.

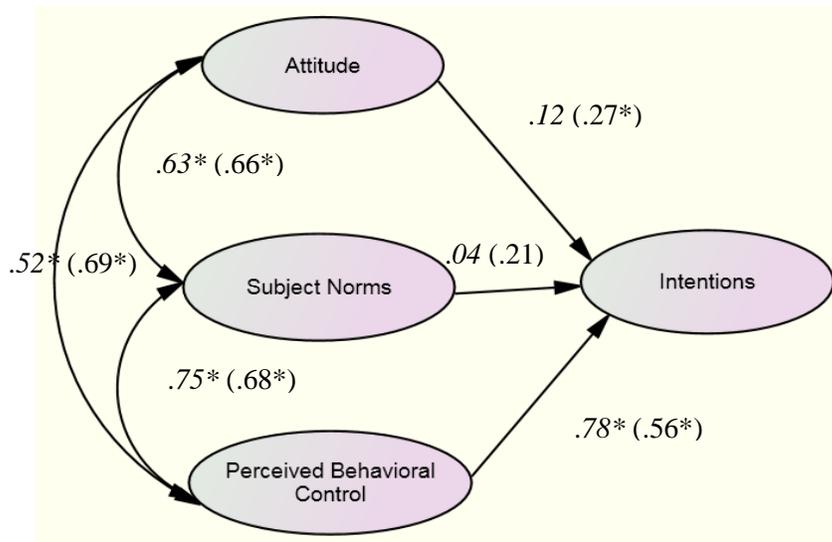


Figure 4.1. Parameter estimates for TPB. Values in italics are from the control group. Values in parentheses are from the treatment group. \* = significant path at .05 alpha level.

**Measurement model modification.** Initial results of model testing were not strongly favorable toward the TPB. Upon further examination of the measurement model, attitudes and subjective norms may not have been adequately measured in the initial analysis. Inspection of the means for subscales of the BEACS in Table 4.1 (i.e., EPO and EPN) revealed results contrary to the hypothesis that individuals in the treatment group would report more positive attitudes and subjective norms associated with PHS compared to the control group. Specifically, mean scores for the treatment group were lower than mean scores for the control group on both BEACS subscales, whereas mean score differences on all other scales used in the study were in the expected direction.

Table 4.5

*TPB Factor Loadings*

Indicator	Control	Treatment
Expertness	.55	.72
EPO1	.91	.93
EPO2	.94	.92
Stigma Tolerance1	.91	.89
Stigma Tolerance2	.77	.66
Expectancy for Positive Norm	.61	.71
Help Seeking Propensity1	.68	.71
Help Seeking Propensity2	.66	.65
Help Seeking Propensity3	.78	.81
Intent1	.76	.73
Intent2	.67	.76
Intent3	.67	.63

*Note.* Numbered indicators represent parcels. EPO = Expectancy for Positive Norm.

While negative attitude change is not a unique finding (see Sturmer & Gerstein, 1999), there are other reasons to suspect that the BEACS may not have been an appropriate instrument for use in this study. For instance, the unexpected results for the BEACS subscales in this study, the very high factor loadings of EPO parcels and high Cronbach's alpha for both EPO and EPN (suggesting redundant/narrow measurement of their respective constructs), and Choi's (2008) report of mixed support for known groups validity of EPO and EPN (e.g., failed to differentiate between males and females), unclear support for convergent validity (e.g., low correlations with similar scales), and questionable construct validity (e.g., low correlations between subscales) raises enough concern about the adequacy of the BEACS for assessing variables of the TPB that

removing it from the measurement model was important. In order to compensate for the loss of indicators for latent variables, the four items of the Expertness subscale of the BAPS were used as indicators of the latent variable attitudes toward PHS. Stigma Tolerance was parceled again to obtain three indicators for the latent variable subjective norms associated with PHS. Parceling for Stigma Tolerance was conducted in the same manner as it was for Help Seeking Propensity.

Analysis of the TPB with the modified measurement model showed vast improvement in model fit statistics, as can be seen in Table 4.6. Specifically, normed Chi-square, RMSEA, and CFI all suggested good fit of the model for both the control and treatment groups. Additionally, parameter estimates presented in Figure 4.2 show that in both experimental groups, attitudes toward PHS and perceived behavioral control over PHS were significantly associated with PHS intentions. Subjective norms were still not associated with PHS intentions. Significant positive relationships were also found among the predictor variables of PHS intentions in the TPB.

Table 4.6

*Modified TPB model fit statistics*

Fit statistic	Control	Treatment
$\chi^2$	116.43*	86.55*
$\chi^2/DF$	1.97	1.47
RMSEA (confidence interval)	.07 (.05 - .09)	.06 (.03 - .08)
CFI	.95	.96

\* =  $p < .05$

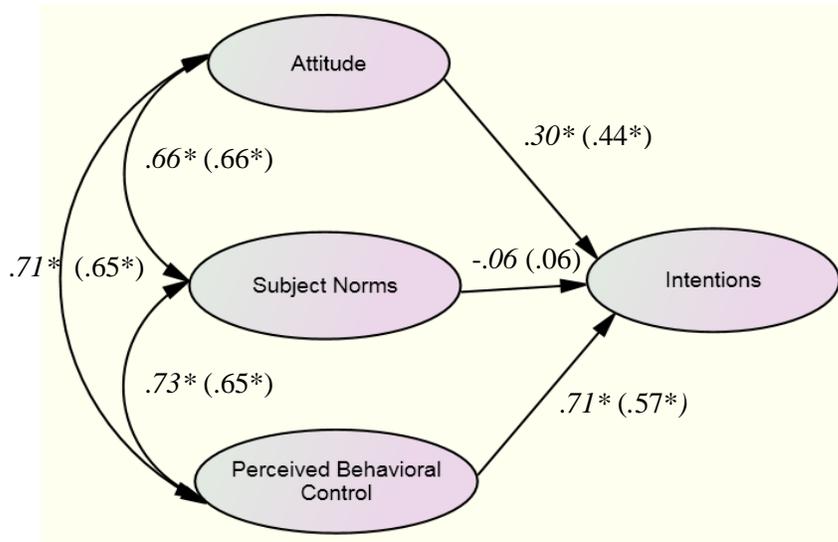


Figure 4.2. Parameter estimates for modified TPB. Values in italics are from the control group. Values in parentheses are from the treatment group.  
\* = significant path at .05 alpha level.

### Primary Analysis II

Hypotheses that variables from the TPB would be positively impacted by the video were tested using Multiple Indicators, Multiple Causes (MIMIC) modeling, a type of SEM. MIMIC modeling allows mean score comparisons of latent variables within SEM by placing a dichotomous cause indicator in a position to predict the latent factors of a model (Hancock, Lawrence, Nevitt, 2000; Kline, 2005). The dichotomous cause indicator is a variable representing the two groups being tested (e.g., treatment and control, male and female). In the current study a value of 0 was assigned to the control group and a value of 1 was assigned to the treatment group (Hancock et al., 2000). Figure 4.3 contains the MIMIC model that was tested.

**Model identification.** Before running this analysis the TPB model was assessed according to SEM identification requirements. Kline (2005) indicated that identification of a MIMIC model is affected when normally exogenous factors are forced to become

endogenous. When this is the case, a path to one of the factor’s indicators must be scaled to 1 because the factor itself no longer has a variance. Because each latent factor has a path that is scaled and there are three indicators per factor, the measurement model for this analysis is identified (Kline, 2005). The structural model was assessed by examining paths from one latent factor to another. No feedback loops were present, nor was there mutual causation between latent factors. Therefore, the model is recursive and identified (Kline, 2005).

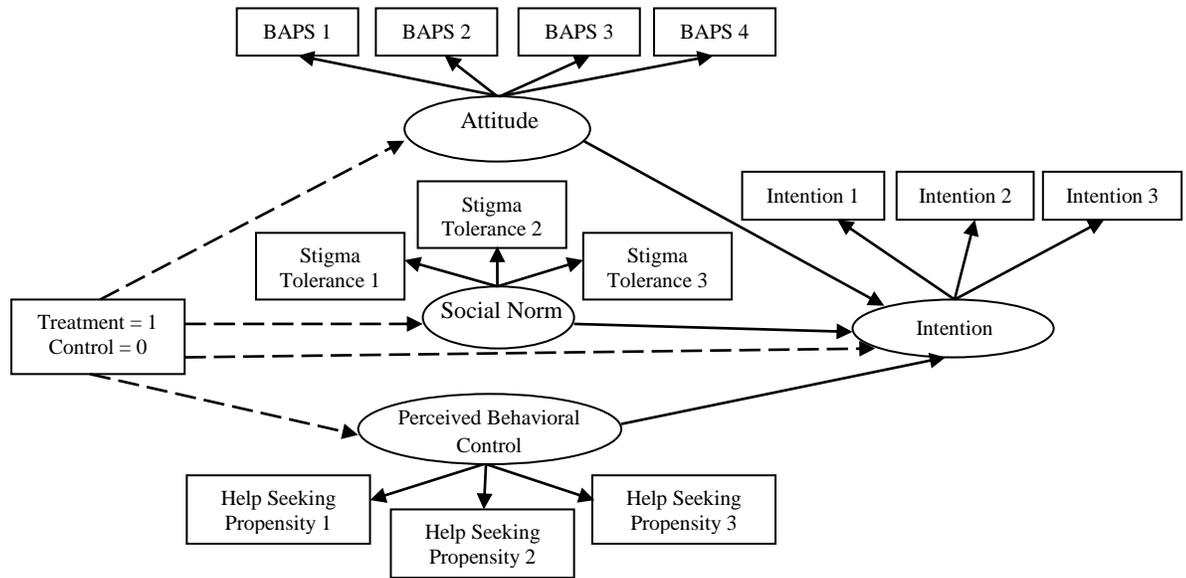


Figure 4.3. MIMIC model from the TPB. Dashed lines indicate paths used to assess latent mean differences. Solid lines are theorized relationships per the TPB. BAPS = Beliefs About Psychological Services. Except for the BAPS, numbered indicators denote parcels.

**MIMIC results.** Analysis of the MIMIC model produced an unstandardized path coefficient ( $B$ ) from the dichotomous cause indicator to each of the dependent variables, representing the difference between latent mean scores of the treatment and control groups (Hancock et al., 2000). A positive  $B$  indicates that the treatment group’s latent mean score on a factor is higher than the control group’s latent mean score. A negative

value has the opposite interpretation. Test for significance are automatically reported by AMOS.

Results from the MIMIC analysis are shown in Table 4.7. Compared to the control group, individuals in the treatment group reported more positive attitudes toward PHS ( $B = .23, p < .05$ , Cohen's  $d = .27$ ), more positive subjective norms associated with PHS ( $B = .21, p < .05$ , Cohen's  $d = .23$ ), and greater perceived behavioral control over PHS ( $B = .19, p < .01$ , Cohen's  $d = .26$ ). The effect sizes for each of these findings were small to medium (Cohen, 1992). Thus, hypotheses 2a, 2b, and 2c that individuals in the treatment group would have more positive attitudes toward PHS, more positive subjective norms associated with PHS, and greater perceived behavioral control over PHS compared to individuals in the control group were supported. However, hypothesis 1d that individuals in the treatment group would have greater PHS intentions compared to those in the control group was not supported due to a nonsignificant group difference ( $B = -.05, p = .50$ , Cohen's  $d = .08$ ).

### **Supplemental Analyses**

A series of MIMIC analyses were run to investigate gender differences on the dependent variables (latent variable mean scores) from the primary analysis within the control group and the treatment group separately. Latent mean score differences by prior counseling experience were examined as well. These analyses were performed to see if results from the current study corresponded to those frequently reported in the PHS literature that PHS varies by gender and prior counseling experience. In addition, between group differences were assessed based on gender such that latent mean scores of men in the control - and treatment groups were compared to one another as were latent

scores of women from both groups. For this test, women were coded 0 and men were coded 1 so that a positive  $B$  indicates higher scores for men compared to women.

Negative scores are interpreted in the opposite manner. In order to correct for Type-I Error a Bonferroni correction of the .05 alpha level was performed for these four analyses. This resulted in a more conservative significance test of  $p < .0125$ . Each analysis was conducted in the same manner as the primary analysis. Table 4.8 contains the results.

Table 4.7

*Results of Primary MIMIC testing*

Comparisons	$B$	$d$
Control versus Treatment		
Attitudes	.23*	.27
Subjective Norms	.21*	.23
Perceived Behavioral Control	.19**	.26
Intentions	-.05	.08

*Note.*  $B$  = unstandardized path coefficient,  $d$  = Cohen's  $d$

\*  $p < .05$ , \*\*  $p < .01$

A comparison of men and women in the control group revealed no significant group differences, likely due to the conservative adjustment in p-value: attitudes toward PHS ( $B = -.27$ ,  $p = .03$ , Cohen's  $d = .32$ ), subjective norms associated with PHS ( $B = -.37$ ,  $p = .02$ , Cohen's  $d = .39$ ), perceived behavioral control over PHS ( $B = -.25$ ,  $p = .05$ , Cohen's  $d = .30$ ), and PHS intentions ( $B = -.07$ ,  $p = .59$ , Cohen's  $d = .11$ ). Effect sizes for gender differences in the control group on attitudes, subjective norms, and perceived

behavioral control were small to moderate, indicating higher scores for women. The effect size for gender differences on PHS intentions was negligible.

Table 4.8

*Results of Supplemental MIMIC Testing*

Comparisons	<i>B</i>	<i>d</i>
Control – Gender Differences		
Attitudes	-.27	.32
Subjective Norms	.37	.39
Perceived Behavioral Control	-.25	.30
Intentions	-.07	.11
Treatment – Gender Differences		
Attitudes	-.21	.24
Subjective Norms	-.05	.05
Perceived Behavioral Control	-.06	.08
Intentions	.12	.27
Control versus Treatment - Men		
Attitudes	.34	.43
Subjective Norms	.53	.56
Perceived Behavioral Control	.34	.41
Intentions	.11	.26
Control versus Treatment - Women		
Attitudes	.20	.23
Subjective Norms	.10	.11
Perceived Behavioral Control	.17	.21
Intentions	-.07	.11
No Prior Help Seeking		
Attitudes	.18	.23
Subjective Norms	.31	.33
Perceived Behavioral Control	.38*	.49
Intentions	-.04	.06
Prior Help Seeking		
Attitudes	.28	.31
Subjective Norms	.15	.16
Perceived Behavioral Control	.05	.06
Intentions	-.04	.07

*Note.* *B* = unstandardized path coefficient, *d* = Cohen's *d*

\*  $p < .0125$ .

A comparison of latent mean scores between men and women in the treatment group revealed no statistically significant differences on attitudes toward PHS ( $B = -.21, p = .24$ , Cohen's  $d = .24$ ), subjective norms associated with PHS ( $B = -.05, p = .81$ , Cohen's  $d = .05$ ), perceived behavioral control over PHS ( $B = -.06, p = .67$ , Cohen's  $d = .08$ ), and PHS intentions ( $B = .12, p = .30$ , Cohen's  $d = .27$ ). The effect sizes for attitudes and intentions were small to moderate with attitudes favoring women and men showing greater PHS intentions. Effect sizes for gender differences on subjective norms and perceived behavioral control in the treatment group were negligible.

Results of the comparison of latent scores of men in the control group with men in the treatment group revealed no difference on attitudes toward PHS ( $B = .34, p = .04$ , Cohen's  $d = .43$ ), subjective norms associated with PHS ( $B = .53, p = .01$ , Cohen's  $d = .56$ ), perceived behavioral control over PHS ( $B = .34, p = .05$ , Cohen's  $d = .41$ ), and PHS intentions ( $B = .11, p = .43$ , Cohen's  $d = .26$ ). Of note is that small and medium effect sizes on all variables favored men in the treatment condition. Regardless, the latent mean scores were not significantly different due to the conservative alpha level used for this analysis.

A comparison between women in the control group and treatment group revealed no significant differences: attitudes toward PHS ( $B = .20, p = .06$ , Cohen's  $d = .23$ ), subjective norms associated with PHS ( $B = .10, p = .42$ , Cohen's  $d = .11$ ), perceived behavioral control over PHS ( $B = .17, p = .07$ , Cohen's  $d = .21$ ), and PHS intentions ( $B = -.07, p = .43$ , Cohen's  $d = .11$ ). All effect sizes were small or negligible.

Two MIMIC analyses were run to assess the impact the video had on individuals with experience seeking help from a mental health professional and those without this

experience. Looking at those without previous counseling experience, students in the treatment group had higher latent mean scores on perceived behavioral control over PHS compared to those in the control group, with a nearly medium effect size ( $B = .38, p < .001, d = .49$ ). Although a small to medium effect size was found for subjective norms associated with PHS ( $d = .33$ ), this difference was not statistically significant ( $B = .31, p = .03$ ). No significant differences were found between the control and treatment groups on attitudes toward PHS ( $B = -.18, p = .12, d = .23$ ) and PHS intentions ( $B = -.04, p = .74, d = .06$ ).

No latent mean score differences were found between the control and treatment groups on the variables from the TPB for persons with prior counseling experience: attitudes toward PHS ( $B = .28, p = .05, d = .31$ ), subjective norms associated with PHS ( $B = .15, p = .35, d = .16$ ), perceived behavioral control over PHS ( $B = .05, p = .70, d = .06$ ), and PHS intentions ( $B = -.04, p = .68, d = .07$ ).

One final analysis was conducted to clarify the video's impact on PHS intentions in the treatment group. The analysis of group differences on PHS intentions using a MIMIC model may have been limited because the path from the dichotomous cause indicator to PHS intentions has to this point been partially mediated by other variables from the TPB. This can result in a decrease in the path coefficient used to test the hypothesis that individuals in the treatment group would have greater PHS intentions in comparison to the control group. Therefore, a significant difference in PHS intentions may have been masked. In order to investigate this possibility, group differences were assessed using the measurement model format depicted in Figure 4.4.

Results revealed significant group differences favoring the treatment group on all latent variables from the TPB: attitudes toward PHS ( $B = .22, p < .05$ , Cohen's  $d = .26$ ), subjective norms ( $B = .21, p < .05$ , Cohen's  $d = .23$ ), perceived behavioral control ( $B = .19, p < .01$ , Cohen's  $d = .26$ ), and PHS intentions ( $B = .26, p < .05$ , Cohen's  $d = .27$ ).

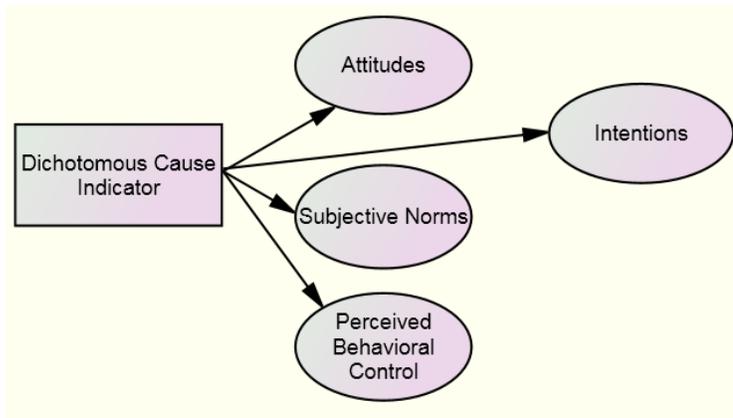


Figure 4.4. Measurement model without partial mediation of PHS intentions.

## **Chapter 5**

### **Discussion**

This investigation had two primary objectives. First, aptness of the TPB for explaining PHS in college students was tested using structural equation modeling (SEM) procedures. Second, a video was created in line with the Theory of Planned Behavior (TPB; Ajzen, 1985, 1991) that was expected to positively influence attitudes, subjective norms, perceived behavioral control and behavioral intentions associated with psychological help seeking (PHS) among college students. To test this prediction, a posttest only experimental design was employed in which the experimental group watched the video before responding to PHS measures whereas the control group only responded to the PHS measures. A Multiple Indicators, Multiple Causes (MIMIC) modeling procedure was used to test mean score differences on latent variables representing the TPB constructs. An examination of college students' PHS by assessing and manipulating *all* constructs of the TPB using SEM procedures has not been previously reported in the PHS literature.

#### **TPB Model Fit**

One purpose of this study was to assess the adequacy of the TPB for explaining PHS among college students. Therefore, the first hypothesis was that the TPB described by Ajzen (1985; 1991) would demonstrate good fit with data collected during the

experiment. Data from the treatment and control groups were analyzed separately, as is typical when experimental designs are employed in SEM (Ullman, 2007). Fit statistics for each group initially revealed some support for the model, but results were mixed, making it unclear how well this model suits a college sample in the context of PHS.

Parameter estimates were not strongly favorable toward variables from the TPB either. For example, the relationship between attitudes toward PHS and PHS intentions was much smaller (not even significant in the control group) than would be expected given past research showing a strong relationship between these variables (Ægisdóttir & Gerstein, 2009; Allen, Walker, Shergill, D'Ath, & Katona, 1998; Bathje & Pryor, 2011; Bayer & Peay, 1997; Choi, 2008; Kleinman, Millery, Scimeca, & Polissar, 2002; Leaf, Livingston, & Tischler, 1986; Segal, Coolidge, Mincic, & O'Riley, 2005; Vogel & Wester, 2003; Vogel et al., 2005). In addition, subjective norms were not related to PHS intentions. Perceived behavioral control, on the other hand, was strongly related to PHS intentions for both the treatment and control groups. The sum of these findings lead to questions about the adequacy of the model used in the current study. Thus, modifications were made to address these questions.

The current study was the first test of the full TPB in a sample of college students and there was a reliance on several measures to capture latent constructs of the model. Further examination of the scales used as indicators of latent constructs was warranted because there is no other literature base to reference that has used these scales to assess this theory with a sample from the college student population. Upon further review, it appeared refinement of the measurement model was needed. Refinement of a model is a normal process in SEM and greater support for the first hypothesis may be found as a

result. Evidence to support this decision came from statistics associated with subscales from the Beliefs and Evaluations About Counseling Scale (BEACS; Choi, 2008).

In the current study, the factor loadings and Cronbach's alphas for each subscale of the BEACS were high enough (i.e.,  $> .90$ ) to suggest that these subscales captured very little breadth of the constructs to which they were assigned. In addition, subscales from the BEACS were the only measures with mean scores in the opposite direction of what was proposed by the hypotheses on the video's effectiveness. Of the scales used in this study, subscales from the BEACS measure attitudes and subjective norms most closely to the method espoused by Ajzen (1985; 1991). Specifically, for attitudes one's beliefs about the outcome of a behavior are multiplied by one's evaluation of each outcome and the product is one's attitude toward a behavior. A central concern with use of the BEACS in this study is that this is its first experimental application and only the second known application of the scale in general. Additionally, the measure has not been utilized in any published, peer-reviewed studies. Choi's (2008) report of mixed support for the instrument's known groups validity (e.g., failure to differentiate well between males and females), unclear support for convergent validity (e.g., low correlations with similar scales), and questionable construct validity (e.g., low correlations between subscales) supports concerns about the adequacy of the BEACS for assessing variables of the TPB.

A refined measurement model was tested in which subscales from the BEACS were removed from their role as indicators of latent variables of the TPB model. The fit statistics were vastly improved such that strong support was found for the TPB in both the treatment and control groups. In addition, examination of parameter estimates revealed that the relationship between attitudes toward PHS and PHS intentions was

greatly improved and more in line with previous research. There was still no significant relationship between subjective norms associated with PHS and PHS intentions even after subscales from the BEACS had been removed. Lastly, perceived behavioral control strongly associated with PHS intentions. In sum, after making modifications to the measurement model greater support was found for the first hypothesis.

An important component of these findings is the strong relationship consistently found between perceived behavioral control over PHS and PHS intentions in both the treatment and control groups. This sheds light on the gaping hole that exists in much of the PHS literature, which has primarily been focused on measuring PHS attitudes. Perceived behavioral control over PHS was related to both attitudes toward PHS and subjective norms associated with PHS, and it now seems clear that assessing the influence of just one or two variables on PHS intentions in isolation disregards the complex reality that social science research attempts to explain (Romano & Netland, 2008).

Unlike perceived behavioral control, subjective norms were not significantly associated with PHS intentions. This is not a unique finding, as some authors have noted similar results when measuring participants' PHS intentions (Clansy, 1998; Jarvis, 2002; Westerhof, Maessen, de Bruijn, & Smets, 2008). Yet, other scholars have reported support for a relationship between these variables of the TPB when assessing intentions to seek help for a psychological problem (Bayer & Peay, 1997; Bringle & Byers, 1997; Christian & Abrams, 2003, 2004; Christopher et al., 2006; Codd & Cohen, 2003; Howland, 1997; Kleinman et al., 2002; MacKenzie et al., 2004; Miller, 2005; Mo & Mak, 2009).

Ajzen (1985; 1991) wrote that each variable of the TPB is expected to influence persons' intentions to perform a behavior to varying degrees depending on person and context. It could be that for college students this variable is not particularly crucial for determining PHS intentions, especially when other variables from the TPB are taken into account. It could also be the case that the stigma tolerance scale used in the current analysis is not best conceptualized as a measure of subjective norms. Indeed, Bathje and Pryor (2011) have reported that the relationship between the stigma associated with seeking mental health services and one's PHS intentions is fully mediated by attitudes toward PHS. Thus, using a measure of stigma to gather information on subjective norms may have been less than desirable.

### **Video Effectiveness**

The second hypothesis in the current study consisted of four parts: in comparison to participants in the no-intervention control group, participants in the treatment group were expected to have a) more positive attitudes towards seeking help for a psychological problem, b) more positive subjective norms associated with seeking help for a psychological problem, c) greater perceived behavioral control over seeking help for a psychological problem, and d) greater PHS intentions. Results from the experiment designed to test the pieces of this hypothesis were supportive of the video as effective at impacting PHS variables. Specifically, a, b, and c were supported such that individuals who viewed the video prior to completing measures of the dependent variables reported more positive attitudes toward PHS, more positive subjective norms associated with PHS, and greater perceived behavioral control over PHS than individuals in the control group. No between group difference was found on PHS intentions.

The change in attitudes falls in line with findings reported by previous researchers who effectively employed interventions to improve participants' attitudes toward PHS (e.g., Ægisdóttir, et al., 2011; Christopher, Skillman, Kirkhart, & D'Souza, 2006; Hammer & Vogel, 2010; Heesacker, 1986). Indeed, the small to medium effect sizes for attitude change found across these studies are similar to results of the current study. The approach taken when designing the video for this study, was heavily influenced by the elaboration likelihood model for attitude change (ELM; Petty & Cacioppo, 1986). Given the significant results, it appears that the steps taken based on this guiding framework (e.g., extensive pilot testing to minimize peripheral cues) were appropriate. However, as is true of the findings related to all the TPB variables, the small to medium effect sizes suggest something must be done to create an even more powerful intervention. This same concern has been expressed by the other researchers who have worked to modify attitudes toward PHS.

The expectation that the video would improve subjective norms associated with PHS in the treatment group (hypothesis 2b) was supported, albeit with an effect size that was small to medium. This supports the investigator's use of social marketing theory (Rochlen and Hoyer, 2005) as a framework from which to work when tailoring components of the video to target subjective norms associated with PHS. In the current study statements hinting that one's subjective norms associated with PHS are positive were presented to participants by noting that friends and family are most often those who recommend one for psychological treatment. Additionally, other statements informed viewers that they are the first line of defense for getting their friends the help they need.

This too suggests that they, as an important other, have a subjective norm favorable toward PHS.

Perceived behavioral control over PHS was also found to increase after watching the video, as hypothesized. This is an important findings because the limited research on this construct in the context of PHS has shown a positive association between perceived behavioral control and persons' PHS intentions (Christian & Abrams, 2004; Jarvis, 2002; Kleinman et al., 2002; Mackenzie et al. 2004; Miller, 2005; Mo & Mak, 2009; Westerhof et al, 2008). Until now, however, research on the link between these components of the TPB has been correlational in nature. Therefore, the current investigation provides the first evidence that college students' perceived behavioral control over obtaining psychological treatment can be increased. This is a significant step toward improving knowledge about what areas university counseling center (UCC) can address when seeking to market their services to students.

Social learning theory (Bandura, 1977; 1978) provided useful guidance on how to influence perceived behavioral control over PHS in this study. In accordance with research on this theory, the video intervention showed images of college students succeeding at obtaining psychological treatment. In addition, information geared toward decreasing perceptions of barriers to accessing services (e.g., free psychological services to college students at college counseling centers) was provided. Given the impact of the intervention on perceived behavioral control and its strong relationship with PHS intentions that was uncovered through model testing, future studies should not ignore this important component when examining PHS.

Contrary to what was expected the video did not affect participants' PHS intentions directly. This is a perplexing result given the positive change on all the predictors of intentions from the TPB that was found in this study. Fife-Schaw, Sheeran, and Norman (2007) showed that change in just one predictor produces change in intentions, and changes in all three predictors produces the greatest change for intentions. Thus, the failure of the video to increase PHS intentions of college students in the treatment group may be due to reasons other than the lack of a powerful intervention.

One reason for the video not affecting PHS intentions could be due to the multivariate nature of the analyses used to assess latent mean score differences between the treatment and the control groups. That is, performing a MIMIC analysis in the full TPB model may have actually contributed to the lack of differences on PHS intentions. In this analysis the path between the dichotomous cause indicator (treatment vs. no treatment) and PHS intentions is partially mediated by three other variables (subjective norms, perceived behavioral control & attitudes). This could result in a decrease in the path coefficient between PHS intentions and the dichotomous cause indicator. That is, although PHS intentions were not directly affected by the intervention, as measured by the MIMIC model, PHS intentions might be indirectly affected through the mediating variables in the model. In order to investigate this possibility, another MIMIC model was tested in a supplemental analysis with paths from the dichotomous cause indicator to each latent variable. However, this time the paths between each latent variable were removed, much like confirmatory factor analysis.

As anticipated, college students in the treatment group had significantly greater PHS intentions compared to those in the control group, and the effect size for this

difference was small to medium (Cohen, 1992). Therefore, the video may actually have been effective at increasing PHS intentions, but difference between groups was masked by mediation. More research is needed to verify these findings, and to examine further the relative importance of targeting PHS intentions directly or through PHS attitudes, subjective norms, and perceived behavioral control. In addition research is needed on the moderating effects of gender and prior PHS experience on interventions targeting PHS intentions.

### **Gender and Prior Help Seeking**

Supplemental analyses revealed no significant gender differences within the treatment and control groups. However, examination of effect sizes favored women over men in the control group, with magnitudes of difference ranging between small and medium effects on all variables from the TPB except for PHS intentions. These findings correspond with Mackenzie, Knox, Gekoski, and Macaulay (2004) who found that women were more indifferent to stigma than men and Ægisdóttir and Gerstein (2009) who found that female college students had greater stigma tolerance than male college students. Yet, results differ from the findings of Choi, (2008), Christopher et al. (2006), and Mo and Mak (2009), who did not find a gender difference on variables related to PHS (e.g., attitudes, subjective norms). A potential reason for this discrepancy might be due to the latter studies employing unpublished measures that had yet to be cross-validated. In the current study and in those of Ægisdóttir and Gerstein (2009), and Mackenzie et al. (2004) the scales used were more extensively researched and validated.

Of importance was that men and women in the treatment group did not differ with regard to subjective norms and perceived behavioral control. This suggests that any

previous gender differences, in which men had more negative subjective norms and less perceived behavioral control over obtaining psychological help compared to women, disappeared by watching the video. That is, observing the video depicting a positive view of PHS may have led to an increased expectation that important others would want one to obtain professional help when faced with a psychological problem and a greater perception by men that they could obtain psychological help despite known barriers. This is an important testament to the video's utility at exacting change on variables related to PHS.

When men were compared between groups, a pattern of nearly medium effect sizes emerged on attitudes, subjective norms, and perceived behavioral control favoring men in the treatment group. These differences were not statistically significant, but the results suggest that men were responsive to the video. In fact, they may have been more responsive than women given that no differences were found between women in the two groups and the effect sizes were small to negligible. The reaction of men to the video used in the current study is similar to reports by Ægisdóttir et al. (2011) and Hammer and Vogel (2010) in their experiments within the context of PHS.

Another supplementary analysis examined previous experience with psychological treatment. Results showed students in the treatment group with no prior psychotherapy reported significantly greater perceived behavioral control over obtaining psychological treatment than students in the control group. The magnitude of this difference was nearly a medium effect (i.e., .49). Although nonsignificant, those from the treatment group with no prior PHS experience had more positive attitudes and subjective norms than their counterparts in the control group. For those with prior PHS experience

only attitudes toward PHS showed improvement, but this difference was not significant. It appears, therefore that the video effectively targeted students' who had not previously sought the services of a mental health provider. This is an important demographic to reach because they may lack awareness of the psychological resources available to them on campus.

Thus, results from supplementary analyses suggest that the effect of the video in changing persons attitudes, subjective norms, and perceived behavioral control over PHS was moderated by students' gender and previous PHS history. Specifically, men were more greatly affected by the video than women. This was indicated by differences on these TPB variables between men in the treatment group and men in the control group. Scores for women in these groups did not show the same pattern. Similarly, when looking at perceived behavioral control over PHS, students with no previous PHS history were more affected by the video compared to students who had sought psychological services in the past. Taken together these results suggest that it may be important to specifically target men and those without previous PHS history to seek psychological help when it may benefit them. This may be especially important given that men are less likely to seek help for psychological problems than women (see Addis & Mahalick, 2003), which has led authors to suggest that special interventions are needed to target men and those without a history of PHS (e.g., Hammer & Vogel, 2010; Ægisdóttir et al., 2001). Current results show that variables from the TPB can be changed using a multimedia presentation and that male college students and those who have never sought counseling services in the past are especially susceptible to such an intervention.

In sum, results of the current investigation reflected findings from previous experiments directed at increasing persons PHS. The small to moderate effects of the video are consistent with effect sizes reported in experiments conducted by Ægisdóttir et al. (2011) and Hammer and Vogel (2010). Yet, it was anticipated that a video would be more powerful at delivering a message favoring psychological treatment compared to vignettes (Ægisdóttir et al., 2011) and brochures (Hammer and Vogel, 2010). It could be that relying on one method for delivering a persuasive message is not adequate for inducing large changes on PHS variables. For instance, Nelson and Barbaro (1985) used billboards, television commercials, and print materials to convey their message to adults that psychological treatment was worthwhile. They reported an improvement in their target group's impressions of psychological services.

### **Limitations**

The small sample size of the current study made it difficult to draw firm conclusions from results and also decreased statistical power in each analysis. Perhaps the most glaring example of this is in the follow up comparison of men from the treatment group with men in the control group. Only 103 men took part in this study. As indicated earlier, this number of participants is likely too low for adequate latent means comparisons in SEM. What must be kept in mind, however, is that a target sample size for any SEM procedure is not easy to identify (Kline, 2005; Ullman, 2007). There are rules of thumb available, but even these can vary to a wide degree. MacCallum, Browne, & Sugawara (1996) stated that at least 243 participants were needed for a power of .80 for exact fit statistics of models with 50 degrees of freedom. The current sample size was near to or exceeded this minimum number with 48 degrees of freedom and 340

participants. Too large of a sample could artificially lead to significant group differences. Thus, in the future careful consideration must be given to what constitutes an appropriate sample size.

Certain group differences failed to emerge as expected (e.g., women in either the treatment or control groups) and effect sizes were only small to medium in size. This could stem from the limitations inherent in how the stimulus (i.e., video) was delivered to the treatment group. Participants were able to watch the video and respond to measures of dependent variables from any location. Although they were encouraged to use headphones or speakers in order to hear the audio from the video there was no check in place to ensure these instructions were followed. Thus, the delivery of the stimulus may have been more passive than intended. Some support for this conclusion can be drawn from results of the manipulation check. Two of the difficult items that would have required participants to focus on the video's content were missed by 22% and 24% of individuals in the treatment group. This is nearly a quarter of the sample for that group and could be indicative of lack of attention.

A drawback to the approach used for stimulus delivery in this study is that participants could have been distracted by other stimuli in their environments (e.g., television, music). Perhaps, then, individuals in the treatment group did not receive equal doses of the manipulation. Despite the lack of strict controls on environmental variables significant group differences were found and the small to moderate effects sizes were similar to what can be expected in this type of social science research (Tabachnick & Fidell, 2007). In fact, by delivering the video via the internet and allowing college

students to see it at their leisure the current study has greater external validity than one would obtain in a highly controlled setting.

Perhaps limitations of the delivery of the video were not as important to this study as limits to the content it contained. Extensive pilot testing of images, script statements, and voices was conducted prior to making the video. However, the range of image quality may have been too restricted even with the large number of clips that were generated. Specifically, most of the images were captured in the same settings. While this decreased the variability in each shot rated by pilot study participants it could have also led to a level of uniformity that was displeasing to viewers in the main study. For instance, the backdrop of each mock counseling session was essentially the same: cinder block walls, table, chairs, and a lamp. It is possible that on the range of possible therapeutic environments this backdrop would be rated toward the lower end of the spectrum, but since a wider variety of backdrops were not filmed it was guaranteed that these images would be included in the final video. The only way to assess this perspective would be to obtain ratings of viewers' affective reactions to the video. It is also possible that participants in the pilot study (mostly undergraduate psychology majors) were not representative of the population from which the main study's sample was drawn. This too could lead to inclusion of stimuli in the video that was not well-received by the treatment group. On the other hand, a positive finding is that the video did not make college students' perspectives of psychological treatment more negative.

Alternative means of structuring the model (e.g., to reduce the influence of partial mediation) were shown to reveal group differences on PHS intentions that had not appeared during the main analyses. This reveals a limitation to the design of this study

that should be considered in future research. For example, assessing mean differences without the structural paths of the model appears to be the best method for assessing the effectiveness of an intervention on intentions to seek psychological help without interference from partial mediation of other TPB constructs on PHS intentions.

Internal validity of this study was threatened by a complete reliance on self-report measures. Although responses were anonymous, data was not collected in a controlled environment and it is possible that participants were interrupted by others while they participated. This may have increased demand characteristics and decreased the accuracy of responding. Demand characteristics may also have been heightened by measuring dependent variables so close to the presentation of the video. Participants may have readily inferred the purpose of the study and modified their responses in a socially desirable way.

There are also concerns that measures of dependent variables were not adequate for assessing the latent variable to which they were assigned. For instance, does Stigma Tolerance accurately reflect participants' subjective norms associated with PHS? If not, it may be more appropriate to model attitudes toward PHS as mediating Stigma Tolerance's relationship with PHS intentions, as Bathje and Pryor (2011) have shown with other measures of stigma related to PHS. Indeed, perhaps the reason so few authors have assessed the full TPB model in relationship to PHS among college students is because of the difficulty of finding appropriate measures of the theory's constructs.

Additionally, use of a mono-method approach to obtaining data via self-report questionnaires was limiting. Kline (2005) has suggested that a multimethod approach to data collection is the optimal strategy for SEM procedures. However, due to the large

sample sizes that are needed for SEM, multimethod assessment would likely present significant challenges for any researcher who is model testing. For instance, obtaining information from alternative sources such as family members would not only be time consuming, but would likely significantly limit the number of individuals willing to participate in the study. To decrease sample size requirements, fewer parameters must be estimated and the result would be very simple models. Although simplicity is not always a downside, using more complex models like the TPB permits researchers to evaluate relationships among multiple variables. This characteristic of complex models helps researchers more accurately reflect a simplified reality (Rodgers, 2010).

Another challenge faced in multimethod assessment is that variables from the TPB are operationalized in language that reflects individual cognitive appraisal. Thus, subjective norms are one's *perception* of what important others think one should do, as well as how one *evaluates* these opinions. According to this definition, even surveying a participant's important others to gauge these individuals' opinions about performance of a behavior would not help with the assessment of subjective norms. Only the participant's perception of normative data matters. In order to better explain behavior from the TPB it may be useful to reassess how constructs are operationalized.

From an external validity standpoint, there was a large discrepancy in sample size between the treatment and control groups. This suggests a greater attrition rate from the treatment than the control group as equal number of participants was randomly assigned to each group. Thus, group comparisons reflect only those individuals who were invested enough to proceed through a lengthy study. Also threatening the study's external validity is that the sample was drawn from two universities: a large Midwestern public university

and a small private liberal arts university. Therefore, participants cannot be assumed to be representative of the United States college student population. Participants were recruited via campus-wide email listservs in order to expand the participant pool beyond the few students taking undergraduate psychology courses. However, given the nature of the study and its focus on PHS it may have attracted individuals with a prior interest in psychology.

### **Theoretical Implications**

Support was found for the TPB model in understanding PHS among college students, but only after adjustments were made to the model, such that subscales of the BEACS were removed. Even after this modification, questions abound with regard to what role subjective norms associated with PHS plays in predicting PHS intentions. Some previous research has found the subjective norms component of the TPB to be unrelated to PHS intentions (Clansy, 1998; Jarvis, 2002; Westerhof, Maessen, de Bruijn, & Smets, 2008), whereas a majority has supported this link (Bayer & Peay, 1997; Bringle & Byers, 1997; Christian & Abrams, 2003, 2004; Christopher et al., 2006; Codd & Cohen, 2003; Howland, 1997; Kleinman et al., 2002; MacKenzie et al., 2004; Miller, 2005; Mo & Mak, 2009). Mo and Mak (2009) are the only other authors to use SEM procedures to assess the full TPB in relation to PHS, with their sample of Hong Kong residents. In this case, subjective norms not only predicted intentions to seek treatment directly, but it was also predictive of PHS intentions indirectly through attitudes and perceived behavioral control.

The results reported by Mo and Mak (2009) support Ajzen's (1985; 1991) claim that attitudes, subjective norms, and perceived behavioral control will vary in their

contributions to the prediction of behavioral intentions depending on context. For Mo and Mak's (2009) participants the context was a collectivist society that places higher esteem on the perspectives of important others than might be expected in a more individualistic society such as the United States. At the same time, Mo and Mak (2009) showed that a variation of the TPB in which subjective norms directly and indirectly influenced behavioral intentions was a better fit for their sample than the standard model. Thus, it could be that an alternative model to the one proposed by Ajzen better explains PHS intentions among college students in the United States.

For instance, if important others for college students consist of family and friends back home then when assessed in a context absent of these influences (e.g., while at college) the influence of subjective norms may be significantly reduced. Thus, the variable does not lose its theoretical importance, but its utility for explaining PHS intentions in college students may be reduced when they are not in close proximity to their important others. This could have implications for the variables that are important to target when educating students about the mental health services available at their UCC.

Because the video created for the current study identified and targeted important variables using existing theory and research on the TPB there can be some speculation about its active ingredients. For instance, The ELM (Petty & Cacioppo, 1986) was employed to conceptualize how college students' attitudes could be impacted. A large focus of the pilot studies was on maximizing central route processing of script statements such that the peripheral cues of attractiveness, affective reactions, and favorableness of images and voices were minimized. Yet, some authors have argued that greater, more lasting attitude change might occur if both the peripheral and central routes are activated

during the presentation of a message (SanJosé-Cabezudo, Gutiérrez-Arranz, & Gutiérrez-Cilián, 2009, Liu & Shrum, 2009). Perhaps, then, the extensive pilot testing prior to creating the video resulted in a less powerful stimulus. This theoretical perspective is worth evaluating in future experiments on PHS in which both the peripheral and the central routes are targeted simultaneously.

Subjective norms associated with PHS were targeted via social marketing theory as described by Rochlen and Hoyer (2005) via script statements (e.g., friends and family are often the ones to refer persons for psychological treatment) and images of students seeking help. These were intended to communicate to students the idea that their subjective norms associated with PHS are likely to be positive. As indicated earlier, the subjective norms of men in the treatment group were more positive than those of men in the control group. It could be that social marketing theory helped create a message strong enough to overcome the significant social pressures to avoid PHS that many men face (see Addis & Mahalick, 2003). If so, then this study may be a significant step in the direction of decreasing the trend of treatment underutilization for groups of persons that do not believe in psychological treatment as a viable avenue for help (Vogel et al., 2007).

Perceived behavioral control over PHS was shown in multiple analyses to be responsive to the intervention. Research from social learning theory (Bandura, 1977; 1978) was used to identify ways to influence college students' perceived behavioral control over PHS. The inclusion of testimonials, images of college students accessing mental health services, and images of college students in distress reflected the emphasis placed on watching similar others perform a behavior (e.g., Schunk, 1999; Schunk & Hanson, 1985). In addition, because potential barriers can influence one's perceived

behavioral control, statements directed at decreasing obstacles to treatment were generated (e.g., no cost, flexible scheduling). In sum, the various theories employed to produce change in the predictors of one's intention to perform a behavior were utilized effectively.

### **Counseling and Outreach Implications**

The lack of knowledge about the benefits of a university counseling center (UCC) among college students (Benedict, Aspler, & Morrison, 1977; Fouad et al., 2006; Henggeler, Harbin, & Sallis, 1982; Kahn, Wood, & Wiesen, 1999; Yorgason, Linville, & Zitzman, 2008) was a driving force for the current study. A video similar to the one created for this study can be used by practitioners at UCCs to educate students about their services. In addition, a video such as this one can be used for outreach efforts during new student orientation, it can be hosted at a university server and a link to it can be sent along with informational packets to prospective students, it can be used in classroom presentations made by UCC outreach teams, and it can be posted on UCC websites for students to view as they explore their options for treatment. While UCCs may choose not to utilize the video created in this study to reach students, the support found in this study for the TPB suggests that attention must be paid to all its concepts when designing interventions to enhance students PHS intentions and behavior.

Previous research has shown brochures (e.g. Hammer & Vogel, 2010) and vignettes (e.g. Ægisdóttir et al., 2011) to be somewhat effective for increasing PHS intentions in participants. Thus, a multi-pronged attack on treatment underutilization, similar to one described by Nelson and Barbaro (1985), may involve a UCC outreach team showing the video created in this study to a group of college students, providing

vignettes of hypothetical cases and having students apply their decision making process for whether or not to seek mental health services, and distributing brochures at the end of the outreach presentation that address variables from the TPB at a written level. This multi-pronged approach may be a more effective means for increasing intentions of college students to seek mental health treatment when faced with a psychological problem. As previously noted, the effect sizes found during attempts to influence PHS in college students have been small to moderate and, although consistent with what is expected from social science research (Tabachnick & Fidell, 2007), small to medium effect sizes suggests a need for a more powerful intervention. A multi-pronged approach in which videos, vignettes, and pamphlets are employed might result in larger effects. Future research should investigate this possibility.

An additional, albeit untested, use for the video could be for inducting new clients to the therapeutic process. More specifically, as the video contains statements about what is expected of the counselor and the client in addition to statistics about the effectiveness of psychotherapy viewing a video such as this one during the intake session may help establish appropriate expectations for treatment. In fact, this type of utilization of the video warrants investigation given that the mismatch between therapist and client expectations for treatment has been hypothesized to contribute to a high premature termination rate from psychotherapy (Reis & Brown, 1999; Reis & Brown, 2006; Walitzer, Dermen, & Connors, 1999).

### **Research Implications**

In future research geared at enhancing persons PHS intentions and behavior, multiple forms of measurement should be identified and employed. This could include

self-report on standard Likert-type measures, measures of implicit attitudes that are calculated based on reaction times to various word pairs (e.g., Brendl, Markman, & Messner, 2001; Conrey, Sherman, Gawronski, & Groom, 2005) and reports from significant others or other third-party sources. Multimethod assessment would be ideal for capturing latent constructs in SEM (Kline, 2005).

In addition to multimethod measurement, the timing of measurement following presentation of an intervention should be varied. In the current study, participants completed measures of dependent variables immediately following the video. Perhaps a longer delay would have given participants time to reflect on the content of the video, which may have resulted in greater latent mean differences than was found when assessment occurred so close to the intervention.

Finally, a larger sample size should be employed in future assessments of the TPB's adequacy for explaining PHS among college students. This will be particularly important if the researcher intends to make group comparisons. The likely outcome of a larger sample size would be increased confidence that results are stable, especially with regard to model fit (Kline, 2005; Ullman, 2007). It is difficult to determine exactly what would constitute a large enough sample size. Too large of a sample can be problematic as well. For instance, the  $\chi^2$  statistic, which assesses whether the sample covariance matrix from the proposed model differs significantly from the population covariance matrix, is likely to be significant any time a very large sample size is used, regardless of the true magnitude of this difference (Ullman, 2007). Model fit will appear to be poor unless multiple fit statistics are taken into account. It is also unclear how to determine the appropriate sample size for each method when multiple approaches to measurement are

used. Thus, sample size determinations can be complicated and a generally agreed upon rule of thumb for simplifying this decision is not readily available.

### **Conclusions**

Five hypotheses were tested in the current study. One proposed that the TPB would be adequate in explaining PHS among college students. The remaining four hypotheses suggested that a video designed with the constructs of the TPB in mind would have a positive impact on the four constructs of the TPB. Specifically, positive changes were expected in college students' attitudes towards PHS, subjective norms associated with PHS, perceived behavioral control over PHS, and PHS intentions. A posttest only experimental design was employed to examine the effect of the video on each of the four TPB variables.

Results showed some support for the TPB model when the context is PHS. Some support was found for the model in both the treatment and control groups; however, subjective norms did not play a role in predicting PHS intentions. In terms of the video's effectiveness it was found that it did enhance the various predictors of PHS intentions, but initial analyses of the experiment's success did not show changes in intention to seek help for a psychological problem. The video was only found to impact students' PHS intentions after modifications were made to the structural components of the model. These findings indicate that not only does the TPB hold promise for explaining PHS in college students, but may also serve as a valuable tool for identifying important areas to target when designing outreach materials to enhance college students PHS tendencies.

As in every investigation, this study has limitations that were explicated previously. Despite the limitations, this study offers significant contribution to the PHS

literature. It is the first study to examine psychological help seeking among college students employing all constructs of the TPB simultaneously with SEM procedures. In addition, the detailed planning, theoretical input, and extensive pilot testing that preceded the creation of the video tested in this study resulted in the development of an outreach tool that practitioners within UCCs can add to their arsenal for combating treatment underutilization of distressed college students. The effect sizes found in this study speak to the need for an even more powerful stimulus.

More investigations are needed to build upon the groundwork laid by this study. This includes employing large sample studies for investigating the TPB model within a college student population in addition to conducting experiments in which exposure to a video is varied in order to gauge its effect in different doses. Finally, a means for assessing an actual help seeking behavior must be identified. Conclusions about the effectiveness of all interventions developed to enhance PHS will continue to be limited until the measurement of PHS intentions is combined with an assessment of real behavior change. In the same way, efforts to use the TPB for explaining PHS in any population will be hampered until researchers incorporate measures of behavior.

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## Appendix A

### Statement and Testimonial Ratings

Instructions: Please read each statement carefully. Then, use the items provided below each statement to offer your perception it.

1. How strong of a case does this statement make in favor of seeking counseling?

Weak \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Strong

2. How would you describe your feelings toward this statement?

Negative\_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Positive

3. How favorable is this statement toward counseling?

Unfavorable\_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Favorable

4. This statement is...

Passive\_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Active

### Video ratings

Instructions: The video you will watch does not have audio. Please rate each of the following video clips using the items provided. Most clips will last approximately 15 seconds followed by a blank screen for 10 seconds. This 10 second period is provided to allow you to rate each clip. The items will change in wording when the video clip is not of a counselor and client speaking, so please be aware when this change occurs.

To begin, click on the camera icon. A video window will open and a series of 15 second clips will play. A number will be visible in the bottom left hand corner of each video clip. This will allow you to double check to ensure that the clip number you are rating matches the clip number in the video. Before starting it may be helpful to familiarize yourself with the items.

#### Counseling sessions.

1. How would you describe your feelings toward this clip?

Negative    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_ Positive

2. How attractive was this clip?

Unattractive \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_ Attractive

3. How favorable is this clip to you?

Unfavorable \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_ Favorable

4. How relevant is this clip to counseling?

Irrelevant    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_ Relevant

5. How appropriately does this clip demonstrate counseling?

Inappropriate \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_

Appropriate

**Pickup shots.**

1. How would you describe your feelings toward this clip?

Negative    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_ Positive

2. How attractive was this clip?

Unattractive    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_ Attractive

3. How favorable is this clip to you?

Unfavorable    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_ Favorable

4. How relevant is this clip to psychological help seeking?

Irrelevant    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_ Relevant

5. How well does this clip demonstrate someone needing counseling?

Bad    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_ Good



## Appendix B

### Pilot Tested Statements

1. Do you avoid your school's counseling center? There is a good chance you feel that counseling won't be helpful for you. If so, you are not alone. Many people avoid the counseling center because they believe the services offered there will not make them better.
2. Did you know research has found that counseling does work? Researchers have carefully studied the effects of talking to a mental health professional. In fact, compared to those who do not seek help from a counselor, 75% of the people who DO get better.
3. Statistics like this do not matter to you unless you believe that it is a good thing to be less distressed. If you like the idea of becoming less distressed then it is good for you to know that receiving counseling can improve your well-being.
4. You might question the effectiveness of counseling. Researchers have focused hard on this issue since 1952 when British psychologist Hans Eysenck stated that therapy was not helpful. Since then, decades of research has been conducted on the effectiveness of counseling. Studies have been conducted on individuals and large groups of people with results showing over and over that counseling does, in fact, work.
5. In 1980, two researchers named Smith and Glass analyzed data available from numerous studies on the helpfulness of counseling. Results showed that 75% of individuals who received treatment from a mental health professional were better off than the average person experiencing significant distress but not receiving professional psychological help.

6. Counseling is like working with a consultant. The main problem is identified, a plan is formed for how to decrease the effects of this problem, and the plan is executed. The counseling relationship is built on trust, not competitiveness so you will not be forced to do or say anything you don't want to.
7. Consulting with a professional at the counseling center has been described as being similar to getting treatment for a sports injury. If left untreated, an injury can prevent you from performing at your top level. By attacking the problem early you minimize its negative impact on your life.
8. We all experience personal problems differently, and we may think that our concerns are too unique for someone else to understand them. Professionals at the university counseling center know each person presents a distinct perspective. Their role is to help you navigate the complications of your situation by employing a range of effective counseling interventions for helping students function better. Your perspective is valued as an important piece of the partnership you form with a counseling professional.
9. Often times, students will wait to visit the counseling center until they are fed up with the stress from a semester and are barely able to manage their coursework. Counselors are in a position to help you learn to manage stress early on, as a preventative measure.
10. Soldiers can get depressed, CEO's can feel lost, teachers get overwhelmed, and students are certainly not immune to troubles. The difference is, most students can access the assistance offered by professionals at the counseling center without incurring the financial costs that others may experience.

11. Working collaboratively with a counselor at the counseling center means that you will not be coerced. It would be counterproductive for someone to force you to talk. The point of having counselors available to you is so that you can use their training and your experience to guide your work together.
12. It's possible for a counselor to have a negative reaction to a client. Counseling professionals are expected to offer support by maintaining respect for the people with whom they work, and when that requirement is not fulfilled a client has the right to see another counselor who can offer that kind of support. It's even okay for you to be angry or disagree with your counselor. YOU are considered to be the expert on your life.
13. Portrayals of counseling sessions through film and television shows are often misleading because the counselors can appear to hold special abilities that allow them to be all-knowing. In reality, a counselor utilizes research, training, and clinical experience to better understand your situation. There are no secret abilities that give a counselor the upper hand in a session.
14. The work accomplished in counseling relies heavily on the information you are willing to share. The information you share helps you and your counselor formulate ideas and a plan for how your goals can be achieved. Your counselor will ask questions and offer their perspective to ensure they have a clear understanding of what you are saying. This is why counseling is described as a partnership.
15. Apprehension over disclosing information about a problem can affect the attitudes we have toward counseling. These attitudes predict the likelihood that you will consult with a professional when you are overcome by life stressors. It is true that sharing

- something about yourself is an important part of the counseling process, and you might feel nervous knowing that counseling involves you describing the issue you want to work on. Without it, it would be difficult to form a plan for resolving issues.
16. It is good to talk with your friends and family. In fact, at counseling centers the importance of being supported by friends and family is recognized. Counselors don't try to replace these important people in your life. However, a time may come when you feel as though it would be helpful to consult with someone who may offer a different perspective, someone who doesn't already know everything about you. A professional at your university's counseling center is in a great position to be this person.
17. A major benefit of counseling services reported by many students is that whatever you talk about stays between you and the counselor. This means you can talk without your counselor sharing your issues with someone else. You may feel uncomfortable discussing some subjects with people we know and counseling provides us with an opportunity to discuss a problem with an objective listener. Plus, if there are any limitations to confidentiality then your counselor will discuss them with you prior to the start of your first meeting. That way you won't have to be worried about whether your story will get spread to others.
18. It's common to avoid seeking psychological help because you are afraid that others in your social network will look down on you. Do you wonder what friends or family will think if you go to a counseling professional for help? A lot of students who use counseling services attend after someone they know referred them.

19. No one will make you tell your friends and family that you spoke with someone at the counseling center. One person might take information gathered during a session with a counselor and share it with friends, family, or a significant other. Another person could choose not to discuss the content of his or her session with others. Every student can have a different point of view on this matter and can do what they want.
20. "People I know will think I am crazy." This is a common fear expressed by college students who have thought about going to counseling. They are also afraid that others may stop associating with them if they do seek such help. Yet, most people talk about their psychological problems with members of their social network long before seeking help from a counselor. Plus, many people wait to come to the counseling center until family or friends have told them to. It seems the people you think would be bothered by your choice to see a counselor would be the very ones to say it's OK.
21. Counselors are not a replacement for your friends and family. A counselor is like a contractor who uses your existing support system as a foundation on which to help you improve. Some foundations may not be as sturdy as others which means the counselor can play a more important role in strengthening your foundation. Counselors build on existing sources of social support because they understand the important impact friends and family have on your ability to cope with your problems.
22. Part of the fear of counseling stems from the stigma associated with getting a psychological diagnosis. Too many times people think, "I don't hear things or see things other people don't hear or see, but if I see a counselor people will think I am crazy anyway." The consequence of this fear is that many people will wait to get help until their distress has overwhelmed them. It's a reality that people unfamiliar with

- the counseling process have negative perceptions of seeking help from counselors. However, people with negative perceptions of seeking such help may be unaware of not only what happens in a counseling session, but also the benefits that can be accrued by consulting with someone at the counseling center.
23. It's true that many people look down on those who see counselors. In their view, only crazy people seek help from counselors.
24. As stress increases, our ability to manage problems can become more difficult. Having social support from friends and family is a great buffer for managing our problems in stressful times. Seeking support from a professional at the counseling center is a good way to add to this buffer because they will devote time to help you sort out your situation. In addition, a counseling professional can help you find and use existing resources.
25. Men are often afraid to consult with a counseling professional because they know some people might perceive them as weak or less masculine. This isn't an irrational fear. There are some people, probably even some that you know, who think it is a weakness to seek help from a counselor. Maybe because the people at the counseling center do such a good job keeping information confidential you don't recognize that there are a large numbers of students, men and women, who take advantage of its services.
26. A difficult part of consulting with a counseling professional is not knowing how family or friends would react if they knew. Many people choose to avoid using counseling services that could be helpful because they are afraid people they know

will be angry with them if they did. Others take advantage of the services offered and simply keep it to themselves.

27. Some of the most common fears associated with counseling are fear of embarrassment, fear of change, fear from past experience, fear of discussing topics or being exposed to situations that are too anxiety provoking, and fear of negative judgment passed by others. There is no magic eraser that dispels these fears. It is a positive counseling experience that will help decrease them.
28. Knowing that the counseling center is here to help you can have consequences for others as well. Most people speak with a friend or family member about their problems and this puts you in the position to tell them about the services that available when their concerns are overwhelming them.
29. Now that you know more about the services that the counseling center has to offer, you will be in a better position to recommend these services when you think they could help improve a friend's situation.
30. One of the reasons it is important to be aware of what kind of services are offered at your university's counseling center is that with such knowledge you can help your friends get the help they need. Think about it this way, the second leading cause of death for college students is suicide, and nearly 90% of individuals who die from suicide had a very treatable concern. You are the counseling center's first line of defense in getting people the help they need.
31. The financial cost of counseling is cited by the general public as a barrier to seeking counseling. This barrier does not look the same in a university setting. In fact, nearly 94% of college counseling centers surveyed in 2009 reported offering free services to

- students. This is a significant benefit that most people will not obtain again after college.
32. Finding the counseling center is usually pretty easy. The hardest part is actually deciding to seek counseling. The decision can be difficult and you may even change your mind a few times before finally going through with it.
33. University counseling centers are located on campus and are usually easy to access. In order to set up an appointment you can walk in, fill out a form, and give it back to the receptionist and then have an opportunity to set up an appointment that fits your needs.
34. There is no lifetime commitment to doing counseling. During the first few sessions you and your counselor can discuss the length of time you think is necessary for you to accomplish your goals. The professionals at the counseling center want to help you reach your objectives as quickly as possible. There is no incentive for a counselor to prevent you from getting what you need.
35. Accessing the counseling center may require you to climb stairs or take an elevator, but these things are manageable for most people. It should also be accessible to people with physical limitations.
36. You aren't expected to carry on a conversation with anyone in the waiting room of the counseling center. In fact, you can keep to yourself if you want. There is a wide range of reasons that bring people in, so it is not likely someone would try to figure out what brings you in.
37. "I would like to try couples work, but my partner does not want to come." You are certainly not prohibited from speaking to someone at the counseling center just

- because your partner does not wish to participate. The counseling session can be tailored to an individual's perspective.
38. Most people attend only one counseling session. Those who stay for just one session may experience relief, but research shows that those who continue past their first session experience improvement during the first three or four sessions. Coming back after the first appointment is important. You don't have to schedule for every week. You can come every other week or even once a month if you want. With this kind of flexibility, busy students like you find it easier to make time for reducing stress.
39. There are many topics that can be addressed in counseling: career concerns, relationship issues, premarital counseling, grief, depression, improving sports performance, anxiety, roommate problems, adjustment to college, academic issues, personal growth, time management, cultural adjustment, sexual identity, and many more. It should be obvious from this list that seeing a counselor does not mean you have to be sick or medicated.
40. Many people come in to the counseling center hoping for quick advice. At times, counselors might give you advice, but much of the time the goal is to collaborate with you to find out what will work for you in your situation so that your distress is decreased.
41. It's your choice to seek counseling which means you can stop at any time. The most important predictor of successful counseling is the quality of the relationship between you and your counselor. It is important that you feel comfortable with your counselor, and if you don't, you are free to stop seeing that person. It's your right.

42. Think of a time when you were able to handle a problem that created a lot of psychological distress. Most of us experience challenges that we are able to resolve quickly. Now think of a time when you had a psychologically distressing problem that was really hard to resolve. You may have thought no one could help or that you had to deal with it on your own. In a year, nearly one-half of all college students will experience a psychological problem that could be diagnosed, and 1/3 of them will choose to utilize the services of a counselor.
43. It's interesting that a positive resource like the counseling center is often invisible to students. Some researchers have reported that nearly 40% of students do not even know a counseling center existed on their campus, and 60% had no clue what services their counseling center had to offer.
44. I felt bad when my daughter told me she was going to counseling because it meant that I wasn't able to help her with her problems. I wasn't mad at her for going, I just wished I could do something to help. I guess it was good for her to go since she got better.
45. I kept putting counseling off even though the stress from school was really wearing me down, and I felt like I was neglecting the person I was dating. I had this fear that if I went he would think there was something wrong between us, even though the problem was just me. I was worried about what other people I know would think too, but finally decided it didn't matter. I didn't tell my counselor everything that was going on with me, but counseling helped me get back to a place where I was doing well at school and work, and I started to enjoy dating again.

46. My school was so small that I was sure someone would see me walk into the counseling center. I was afraid that eventually the whole campus would know. The first few times I was embarrassed when people saw me going in and I worried about what they might think, especially since I was a psychology major at the time. The counselor I saw helped me get over the loss of a relationship as well as my feelings of not belonging with the other students on campus. I learned that many others have the same feelings I was having, and I learned new ways of coping with future problems.
47. I had some fears about entering counseling. First, I did not want my parents to know that I was seeking counseling because I was worried that they might judge me. I was also worried that my parents might ask me personal questions about my sessions that I really did not want to tell her. Second, I was worried that my counselor might judge me or criticize me for making bad decisions. I had seen a counselor at an earlier point in college, and had a rather negative experience. Thus, I was afraid to reenter counseling for some time. Thankfully, my second counselor, a counseling psychology doctoral student, was very supportive and encouraging and I did not feel judged or criticized by him.
48. When I was in college, I entered counseling because I was very depressed after my fiancé and I broke up. My main goals were to decrease my feelings of depression and to eventually increase my confidence in dating again. It probably sounds strange, but my counselor focused quite a bit on the similarities between my current and past relationships. I realized that my relationships with the women I dated paralleled certain aspects of the relationship I had with my mother. Many of the women in my life were quite overbearing, and my counselor helped me see that my difficulty with

- assertiveness in relationships was making it hard for me to communicate my needs and to problem solve effectively during arguments. My counselor and I worked a lot on assertiveness training as a means to help me become more active and vocal in my relationships.
49. I went to the counseling center because they were offering premarital counseling services. Since my pastor required us to go to at least 4 sessions somewhere, we decided it would be easiest to go to the school's counseling center. It was actually kind of weird the first time because you don't know what to expect. Kind of like the first day of classes when the material is new and you don't know how the professor is going to be. It ended up being fine. We had discussed some of the topics already, but I was surprised at some of the things we had not talked about yet.
50. I've struggled with depression off and on my entire life. I first started seeing a counselor my senior year in high school and then continued with counseling while in college. Together, we identified "triggers," or things that happened just before I entered a depressive episode. We also found skills that helped pull me out of my depressive episodes. Knowing how to recognize my triggers and how to use skills to handle stress helped me cope immensely and helped me shorten my bouts of depression. I finally feel in control of my emotions.
51. My sophomore year in college I decided to go to counseling. I was very reluctant at first, but after three weeks of being seriously depressed a friend took action and went with me. I was diagnosed with bipolar II, which made sense to me after I researched it. I feel that regardless of whether you are given a diagnosis or not, counseling is a positive way to explore one's emotions in a safe environment. I didn't feel judged.

Sometimes you just need that neutral third party to help you work through your thoughts. That's mostly what counseling is for me. A safe environment in which I can work through, organize, and analyze my thoughts and problems.

*Statement Means and Standard Deviations*

Statement	M	SD
50*	24.47	3.739
51*	23.47	3.998
2*	23.33	2.992
24*	23.27	3.555
7	23.2	3.968
14	23.13	4.121
30*	23.13	3.701
20*	22.93	3.218
39	22.8	4.362
31*	22.8	3.668
5*	22.8	4.28
48*	22.6	4.102
16*	22.33	3.016
6*	22.33	3.848
38*	22.29	3.361
11*	22.27	3.081
17	22.13	4.549
9	22.13	4.764
21	22	4.721
41	21.73	4.317
10	21.33	5.912
8*	21.07	3.807
33	21	4.392
4	20.93	5.849
29	20.93	4.234
34*	20.67	3.395

\* Statement was used in the video.

**Appendix C***Mock Session Means and Standard Deviations*

Clip	<u>Representative Rating</u>		<u>Strength Rating</u>	
	M	SD	M	SD
107*	15.00	3.679	12.29	1.637
18*	15.38	3.015	12.23	1.691
62*	14.46	3.908	12.54	1.713
64*	14.62	3.228	12.46	1.761
16*	15.69	3.637	12.31	1.797
181	15.85	4.469	11.92	1.801
85*	15.54	3.865	12.62	1.850
90*	15.46	3.597	11.85	1.951
162	15.73	3.955	12.13	1.959
40*	15.85	3.158	12.23	1.964
51	15.42	3.554	12.25	2.006
4 *	15.64	3.835	11.79	2.007
94	15.08	4.291	12.15	2.115
84	15.23	4.935	12.08	2.139
24	15.54	4.719	12.38	2.181
83	14.62	5.516	12.00	2.198
41*	15.17	3.762	11.75	2.221
17	14.85	4.240	12.00	2.273
43	15.67	3.962	12.00	2.296
59*	15.77	2.862	12.08	2.326
175	15.46	4.054	12.08	2.326
71	14.69	3.924	12.23	2.351
160*	15.27	3.555	11.93	2.404
151	15.73	3.595	11.80	2.455
166	14.73	4.832	11.73	2.492
66	15.23	5.525	12.15	2.577

19	15.46	3.431	12.15	2.577
65	15.85	3.555	12.38	2.599
72	15.00	3.916	11.92	2.629
49	14.50	4.167	12.08	2.644
80	15.00	3.916	11.92	2.660
54	14.25	3.934	12.08	2.712
45	14.83	3.810	11.83	2.725
97	14.93	3.931	12.00	2.828
174	14.31	4.662	12.23	2.862
74	14.38	4.350	12.23	2.862
165	14.80	4.843	11.80	3.005
173	14.69	3.924	12.00	3.028

---

\* Clip was included in the video

*Pickup Shot Means and Standard Deviations*

Clip	<u>Representative Rating</u>		<u>Strength Rating</u>	
	M	SD	M	SD
193*	12.00	3.16	11.15	1.82
121*	12.29	3.10	11.57	2.24
127	13.71	4.07	11.86	2.32
188	13.23	3.72	11.08	2.60
118*	12.50	3.55	11.43	2.65
113*	12.93	4.01	10.86	2.66
209	13.08	2.63	11.15	2.94
129	13.50	2.62	10.07	2.97
134	13.71	3.83	10.43	3.13
133*	12.86	3.72	10.64	3.18
122	13.79	2.99	10.50	3.18
136	13.71	4.01	10.43	3.20
192	13.62	4.27	11.08	3.23
116	13.43	3.82	9.93	3.27
189*	12.77	3.98	10.15	3.41
32	12.08	4.17	10.08	3.86

\* Clip was included in the video

**Appendix D***Vocal Quality Means and Standard Deviations*

Voice	M	SD
12	29.17	3.746
5	29	4.015
19	28.78	6.093
4	28.06	5.62
20	27.5	5.102
29	27.44	6.176
21	27.28	4.638
8	27.17	4.328
1	26.72	8.223
32*	26.67	6.136
34	26.5	3.808
3	26.22	4.918
9	26.11	4.91
35	25	5.258
2	24.39	8.479
28	24.33	5.719
17	24.06	4.771
15*	23.94	4.671
25 <sup>a</sup>	23.83	5.079
22	23.78	6.264
30	23.72	6.201
33	23.39	6.07
27*	23.33	5.499
6	23.28	8.498
10	23.28	5.345
13	23.06	5.274
11	21.83	5.894

<i>18*</i>	<i>21.39</i>	<i>5.326</i>
24	21.11	6.876
7	20.67	3.97
31	20.67	5.456
16	19.67	6.068
26	18.61	5.124
36	17.56	5.893
14	17.28	5.696
37	14.67	7.079
23	13.17	8.706

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Note: italics indicate voices considered after quartile splits

<sup>a</sup> Median voice

\* Voice included in the video

## Appendix F

### Manipulation Check Questionnaire

1. A majority of university counseling centers offer free services to students.
2. Counselors are of various races/ethnicities.
3. Research has shown that most people get worse after seeing a counselor.
4. Individuals in counseling typically experience improvement during the first 3-4 sessions.
5. Scheduling counseling appointments every two weeks or a month apart is discouraged at counseling centers.
6. There is a university counseling center on my school's campus.
7. One purpose of a university counseling center is to act as a replacement for friends and family.
8. I have a good understanding of the purpose of university counseling centers.

**Appendix G***Reliability Coefficients of Dependent Variables*

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Scale	Cronbach's Alpha
<b>IASMHS</b>	
Help Seeking Propensity	.77
<b>BAPS</b>	
Intentions	.82
Stigma Tolerance	.82
Expertness	.75
<b>BEACS</b>	
Expectancy for Positive Outcome	.87
Expectancy for Positive Norm	.90

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## Appendix H

### Main Study Measures

#### Demographics

Instructions: Circle the response to each of the following questions that is most applicable to you. If you respond "other" please provide a answer in written form.

1. What race do you identify with?
  - a. African-American
  - b. Asian-Pacific Islander
  - c. Biracial
  - d. White
  - e. Hispanic
  - f. Native American
  - g. Other\_\_\_\_\_
2. What is your gender?
  - a. Female
  - b. Male
  - c. Transgender
3. Please select the most applicable answer. I am a college...
  - a. Freshman
  - b. Sophomore
  - c. Junior
  - d. Senior
  - e. Master's student
  - f. Doctoral student
  - g. Medical student
  - h. Other\_\_\_\_\_
4. How many years of education have you completed beyond high school?
5. Which of the following best captures your religious views?
  - a. Atheist
  - b. Agnostic
  - c. Buddhist
  - b. Hindu
  - c. Jewish
  - d. Muslim
  - e. Protestant Christian
  - f. Roman Catholic
  - g. Other\_\_\_\_\_
6. Have you ever sought help for a psychological problem from any of the following types of helpers? Select all that apply.
  - a. Psychologist/Social Worker/Counselor
  - b. Psychiatrist
  - c. Physician
  - d. Member of the clergy

- e. Other \_\_\_\_\_
- f. None

**Beliefs About Psychological Services (BAPS)**

Using the scale below, please check the circle that best represents your views on the following statements.

Strongly Disagree (1) (2) (3) (4) (5) (6) Strongly Agree

- 
- |  |                        |
|--|------------------------|
| 1. If a good friend asked my advice about a serious problem, I would recommend that he/she see a psychologist.     | (1) (2) (3) (4) (5)(6) |
| 2. I would be willing to confide my intimate concerns to a psychologist.   | (1) (2) (3) (4) (5)(6) |
| 3. Seeing a psychologist is helpful when you are going through a difficult time in your life.                      | (1) (2) (3) (4) (5)(6) |
| 4. At some future time, I might want to see a psychologist.  | (1) (2) (3) (4) (5)(6) |
| 5. I would feel uneasy going to a psychologist because of what some people might think.                            | (1) (2) (3) (4) (5)(6) |
| 6. If I believed I was having a serious problem, my first inclination would be to see a psychologist.              | (1) (2) (3) (4) (5)(6) |
| 7. Because of their training, psychologists can help you find solutions to your problems.                          | (1) (2) (3) (4) (5)(6) |
| 8. Going to a psychologist means that I am a weak person.  | (1) (2) (3) (4) (5)(6) |
| 9. Psychologists are good to talk to because they do not blame you for the mistakes you have made.                 | (1) (2) (3) (4) (5)(6) |
| 10. Having received help from a psychologist stigmatizes a person's life.  | (1) (2) (3) (4) (5)(6) |
| 11. There are certain problems that should not be discussed with a stranger such as a psychologist.                | (1) (2) (3) (4) (5)(6) |
| 12. I would see a psychologist if I was worried or upset for a long period of time.                                | (1) (2) (3) (4) (5)(6) |
| 13. Psychologists make people feel that they cannot deal with their problems.                                      | (1) (2) (3) (4) (5)(6) |
| 14. It is good to talk to someone like a psychologist because everything you say is confidential.                  | (1) (2) (3) (4) (5)(6) |
| 15. Talking about problems with a psychologist strikes me as a poor way to get rid of emotional conflicts.         | (1) (2) (3) (4) (5)(6) |
| 16. Psychologists provide valuable advice because of their knowledge about human behavior.                         | (1) (2) (3) (4) (5)(6) |
| 17. It is difficult to talk about personal issues with highly educated people such as psychologists.               | (1) (2) (3) (4) (5)(6) |
| 18. If I thought I needed psychological help, I would get this help no matter who knew I was receiving assistance. | (1) (2) (3) (4) (5)(6) |
-

### Inventory of Attitudes Towards Seeking Mental Health Services (IASMHS)

The term professional refers to individuals who have been trained to deal with mental health problems (e.g., psychologists, psychiatrists, social workers, and family physicians). The term psychological problems refers to reasons one might visit a professional. Similar terms include mental health concerns, emotional problems, mental troubles, and personal difficulties.

For each item, indicate whether you *disagree* (0), *somewhat disagree* (1), *are undecided* (2), *somewhat agree* (3), or *agree* (4):

---

	Disagree	Agree
1. There are certain problems which should not be discussed outside of one's immediate family.	[ 1 2 3 4 5 ]	
2. I would have a very good idea of what to do and who to talk to if I decided to seek professional help for psychological problems.	[ 1 2 3 4 5 ]	
3. I would not want my significant other (spouse, partner, etc.) to know if I were suffering from psychological problems.	[ 1 2 3 4 5 ]	
4. Keeping one's mind on a job is a good solution for avoiding personal worries and concerns.	[ 1 2 3 4 5 ]	
5. If good friends asked my advice about a psychological problem, I might recommend that they see a professional.	[ 1 2 3 4 5 ]	
6. Having been mentally ill carries with it a burden of shame.	[ 1 2 3 4 5 ]	
7. It is probably best not to know everything about oneself.	[ 1 2 3 4 5 ]	
8. If I were experiencing a serious psychological problem at this point in my life, I would be confident that I could find relief in psychotherapy.	[ 1 2 3 4 5 ]	
9. People should work out their own problems; getting professional help should be a last resort.	[ 1 2 3 4 5 ]	
10. If I were to experience psychological problems, I could get professional help if I wanted to.	[ 1 2 3 4 5 ]	
11. Important people in my life would think less of me if they were to find out that I was experiencing psychological problems.	[ 1 2 3 4 5 ]	
12. Psychological problems, like many things, tend to work out by themselves.	[ 1 2 3 4 5 ]	
13. It would be relatively easy for me to find the time to see a professional for psychological problems.	[ 1 2 3 4 5 ]	
14. There are experiences in my life I would not discuss with anyone.	[ 1 2 3 4 5 ]	
15. I would want to get professional help if I were worried or upset for a long period of time.	[ 1 2 3 4 5 ]	
16. I would be uncomfortable seeking professional help for psychological problems because people in my social or business circles might find out about it.	[ 1 2 3 4 5 ]	
17. Having been diagnosed with a mental disorder is a blot on a person's life.	[ 1 2 3 4 5 ]	
18. There is something admirable in the attitude of people who are willing to cope with their conflicts and fears without resorting to professional help.	[ 1 2 3 4 5 ]	
19. If I believed I were having a mental breakdown, my first inclination would be to get professional attention.	[ 1 2 3 4 5 ]	
20. I would feel uneasy going to a professional because of what some people would think.	[ 1 2 3 4 5 ]	
21. People with strong characters can get over psychological by themselves and would have little need for professional help.	[ 1 2 3 4 5 ]	
22. I would willingly confide intimate matters to an appropriate person if I thought it might help me or a member of my family.	[ 1 2 3 4 5 ]	
23. Had I received treatment for psychological problems, I would not feel that it ought to be "covered up".	[ 1 2 3 4 5 ]	

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17	Judgmental	<input type="radio"/>						
18	Interested in my money, but not concerned about my welfare	<input type="radio"/>						

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(BEACS continued)

*Social Norm References*

*Directions.* This Part of the survey will ask you to consider how other individuals might perceive you if you sought psychological services.

Imagine you have been experiencing a psychological concern and you are thinking about going to see a counselor to get help with this concern. Before you make a decision though you want to consider other people would think about your going to see a counselor. From the following list, indicate 3-5 people who you would consider as the most important to you in making a decision to seek or not seek psychological services.

- A. Father
- B. Mother
- C. Brother
- D. Sister
- E. Spouse (husband/wife)
- F. Partner (fiancé or boy/girlfriend)
- G. Children (daughter/son)
- H. Other relatives
- I. Best friend (very close friend)
- J. Friends (peers/classmates)
- K. Teacher (professor or academic advisor)
- L. Coach
- M. Religious leader
- N. Boss
- O. Acquaintances
- Other:





