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The Influence of Campus Culture on Mental Health Help-Seeking Intentions

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The Influence of Campus Culture on Mental Health Help-Seeking Intentions

by

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A thesis submitted in partial fulfillment
of the requirements for the degree of
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Abstract

Mental health issues are widespread on college campuses. However, the majority of these individuals do not seek help. Prior research suggests many factors which may be related to mental health help-seeking including age, gender, and prior treatment experience. There has however been little work considering the context of the college campus on mental health help-seeking, specifically the influence of campus culture. Accounting for the context of mental health help-seeking may help to determine which social groups have the greatest influence on mental health treatment processes.

The purpose of this study was to explore the relationship between perceived peer, student body, and faculty/administrator perspectives on different aspects influencing mental health help-seeking including attitudes towards treatment, stigma, and treatment barriers. Two hundred and twelve participants were recruited for the study. Data supported mediation for personal attitudes and barriers for the relationship between campus culture variables and mental health help-seeking. Implications for campus mental health policy efforts and directions for future studies are discussed.

Introduction

The focus of this project is to determine the relationship between campus culture and mental health help-seeking (MHHS) in college students. This is an important issue as approximately 75% of mental illnesses have their onset before age 24 (R. C. Kessler et al., 2005). Further, prior research suggests that although a sizeable proportion of college students suffer from mental health issues, the majority do not seek professional help (Blanco et al., 2008; Eisenberg, Golberstein, & Gollust, 2007; Oliver, Reed, Katz, & Haugh, 1999). Although there has been much research on factors such as stigma, race/ethnicity, and gender which may be associated with MHHS intentions, a relative paucity of information exists concerning the relationship between campus culture and MHHS (Komiya, Good, & Sherrod, 2000; Rosenthal & Wilson, 2008; Sheu & Sedlacek, 2004; Vogel, Shechtman, & Wade, 2010).

As college students have significant contact with different members of their campus, campus culture may be associated with MHHS. Prior research has found that student perspectives of campus culture are associated with health behaviors and their interaction with different social groups (Ashmore, Del Boca, & Beebe, 2002; Ashmore, Griffo, Green, & Moreno, 2007; King, Borsari, & Chen, 2010). For example, perceived campus alcohol culture measured via perceived prevalence of heavy drinking among friends was found to significantly influence personal drinking behavior. Also, specific social groups have been found to have higher prevalence of heavy drinking, suggesting

the influence of peer group cultural dynamics on drinking behavior (Franca, Dautzenberg, & Reynaud, 2010). A major criticism of campus culture research is that the majority has focused on measurement of single perspectives of campus culture and does not account for interactions with other on-campus groups such as the overall student body or administrators (Hart & Fellabaum, 2008). In light of the critical need for more research on campus culture, I propose to study the relationship between campus culture, as measured by perceived student body, peer, and administrative perspectives, and MHHS intentions via individual factors (see Figure 1). By measuring student perception of multiple perspectives, a sense of the institutional and interpersonal beliefs related to MHHS may provide a more comprehensive assessment of campus culture.

When considering MHHS, identifying campus culture factors linked to help-seeking may aid in the development of future interventions targeting campus cultural barriers. By examining student perception of multiple perspectives in campus culture, campus groups which have the greatest association with MHHS may be identified. Such influential groups may be candidate targets for campaigns focusing on campus-wide change. In order to understand how campus cultural variables may be associated with MHHS, an understanding of the specific developmental processes and vulnerabilities present in college populations may offer context for MHHS processes.

Emerging Adulthood

When considering MHHS, emerging adulthood is of particular interest, as it is a critical age period for the development of mental health issues. Emerging adulthood is defined as a phenomenon of industrial societies which occurs from ages 18 to 25 (Arnett, 2000). Arnett (2000) attributes the origin of this developmental period of delayed

adulthood to changes in educational and employment norms. Specific examples of delayed adulthood behaviors include lack of acceptance of personal responsibility, delayed financial independence, and developing a distinct identity (Arnett, 1997, 1998). Five specific characteristics distinguish emerging adulthood from other developmental stages. Specifically, emerging adulthood has been defined as a period of self-focus, identity exploration, instability, feeling stuck in-between life stages, and openness to possibilities (Arnett, 2004). In the context of mental health issues, several specific characteristics of emerging adulthood may contribute to increased mental health risk throughout the college years.

Emerging adulthood is a time of transition. As inherent in transitions, changes may occur that increase overall life stress. Although overall well-being increases throughout emerging adulthood, inter-individual variation exists. Individuals with decreasing or stably low ratings of well-being over time have been shown to have poorer educational and employment success, which are factors linked to successful transition to adulthood. These differences are thought to be related to differential adaptive and maladaptive coping strategies to life changes (Schulenberg, Bryant, & O'Malley, 2004). One specific change in emerging adulthood is the decrease in structure imposed by authority figures. Decreases in structure have been associated with feelings of being overwhelmed, as existing coping strategies may not be sufficient to adapt to discrepancies between individual needs for structure and resources available (Mortimer, Zimmer-Gembeck, Holmes, & Shanahan, 2002). Overall, the specific characteristics of instability and change associated with emerging adulthood can result in significant distress. Under certain conditions, such distress may manifest as mental health issues.

Mental health issues in emerging adulthood vary across types of psychopathology. This is especially true during the college years as risky behaviors, such as reckless driving and substance use, peak during the early years of emerging adulthood (Bachman, Johnston, O'Malley, & Schulenberg, 1996). Increases in substance use from late adolescence into emerging adulthood have been associated with transience and instability in societal roles (Schulenberg & Maggs, 2002). Risk for major depressive disorder, specific phobia, and post-traumatic stress disorder also increase during this time period (R. C. Kessler & Walters, 1998; Tanner et al., 2007). Specific factors which have been associated with mental health issues differ between disorder types. Internalizing disorders have been associated with increased difficulties with interpersonal functioning, whereas externalizing disorders have been associated with socioeconomic issues (Tanner et al., 2007).

In summary, prior findings suggest that emerging adulthood is a particularly sensitive period for the development of mental health issues and subsequently understanding help-seeking. Although the decrease in overall structure and increase in instability is associated with maladaptive coping behaviors, there is increased autonomy in help-seeking associated with changes in legal rights, as traditionally minors under the age of 18 have limited control over healthcare decisions (Scott, Reppucci, & Woolard, 1995). As individuals enter adulthood, they are legally empowered for the first time to make independent healthcare decisions including seeking mental health treatment. Consequently, when evaluating MHHS, emerging adults who are interested in treatment may be more likely than minors to have independently chosen to seek help as opposed to treatment dependent upon parent consent. In order to further explore MHHS and

emerging adulthood, a review of prior MHHS research may help identify the specific factors which predict MHHS.

Predictors of Help-seeking: A Brief Overview of Prior Research

In considering prior MHHS research, there has been much work exploring predictors of MHHS as low rates of MHHS are a critical barrier to treating mental health issues. Prior research suggests that MHHS rates for college students vary greatly by disorder type ranging from 37-84% of individuals not seeking help for mental health issues (Eisenberg et al., 2007). In addition, mental health issues have been associated with decreased academic performance suggesting that left untreated, significant levels of impairment may occur (Eisenberg, Golberstein, & Hunt, 2009). Overall, MHHS rates are fairly low when considering the level of impairment which may ensue. MHHS is however influenced by many different factors which critically affect the ultimate decision to seek help.

Some variables which have been thoroughly studied in relation to MHHS are demographics and mental health variables. Demographics and mental health variables, such mental health characteristics, prior treatment use, age, gender, ethnicity, and sexual identity, have been found to be associated with MHHS (Ayalon & Young, 2005; Biddle, Gunnell, Sharp, & Donovan, 2004; Eisenberg et al., 2007; Gonzalez, Alegria, & Prihoda, 2005; Rule & Gandy, 1994; Vogel, Wade, Wester, Larson, & Hackler, 2007; Yorgason, Linville, & Zitzman, 2008). Prior research has found that gender and age account for a significant proportion of the variance (25%) explaining MHHS intentions. Specifically, being female and older significantly predicts MHHS intentions but is unrelated to MHHS attitudes (Mackenzie, Gekoski, & Knox, 2006). Many studies have replicated the gender

difference finding showing that women are more likely to seek help than men (Biddle et al., 2004; Boldero & Fallon, 1995; Gasquet, Chavance, Ledoux, & Choquet, 1997). This generalizes to decreased male MHHS behavior for both current and past occurrences of distress (Biddle et al., 2004).

Gender differences in MHHS may be influenced by several factors including knowledge of mental illness and attitudes towards mental health services. Using a vignette study describing depressive symptoms, women were found to be more likely than men to recognize depressive symptoms and suggest seeing a doctor. Men were found to be more likely to blame the individual for his symptoms and suggest dealing with mental health issues by himself (Klineberg, Biddle, Donovan, & Gunnell, 2010). Overall, these findings suggest that gender plays a significant role in MHHS. In order to provide greater context for these findings, further demographic variables must be considered.

When considering ethnicity and sexual identity, ethnic and sexual minorities have shown different patterns of MHHS. LGBTQ individuals have been found to have higher MHHS rates, although this may be mediated by higher perceived need than the general population (Eisenberg et al., 2007). When considering ethnic minority populations, minority individuals have been found to be much less likely to seek professional mental health treatment (Wang et al., 2005). One factor of influence concerns culturally appropriate avenues for mental health treatment. For example, African Americans are more likely than Caucasian Americans to use religious services as opposed to mental health professionals when facing mental health concerns (Ayalon & Young, 2005). These findings suggest that the context of MHHS, as well as measuring a broad range of

MHHS avenues may help to capture additional factors which drive demographic differences.

In addition to demographic influences, various factors concerning mental illness such as symptom type and treatment history have been implicated in MHHS. Prior studies have found that past MHHS experience significantly predicts increased current MHHS intentions and behaviors (Biddle et al., 2004; Freyer et al., 2007). These results suggest that initial MHHS may play an important role on future MHHS.

Although there has been extensive research on demographic and mental health treatment predictors of MHHS, without an overarching model, it is difficult to elucidate how these predictors interact to influence the decision to seek help. By considering how various help-seeking theories organize these predictors, a better understanding of relationships between predictors may be gained.

Help-Seeking: Competing Theories

MHHS is a complex process. In order to help understand this process, several theoretical models have been proposed which describe predictors of help-seeking. Through development of accurate explanatory models of help-seeking, more comprehensive interventions and policy changes can be developed to maximize help-seeking potential. Current help-seeking models include the Behavioral Model of Health Service Use, the Health Belief Model, the Network-Episode Model, and the Theory of Planned Behavior (Ajzen, 1991; Andersen, 1995; Cramer, 1999; Pescosolido, 1992; Rosenstock, Strecher, & Becker, 1988). Each of these models describes specific constructs which have direct and indirect effects on help-seeking. Overall, each model presents specific predictors of help-seeking, such as demographics variables and

knowledge, but focuses on unique predictors depending on the theoretical approach (e. g. structural influences versus social influences). Through critical review of these help-seeking theories and associated evidence, a clear framework can be found for guiding current help-seeking research.

The behavioral model of health service use. The Behavioral Model of Health Service Use has undergone several revisions over time. Based in sociological theory, the most recent iteration of this model includes relationships between predictor variables ranging from more systems-level constructs to individual-level factors. On a systemic level, predictors of health service use include characteristics of the health care system, external environmental factors, such as political and economic factors, and enabling resources such as conveniently accessible healthcare providers. On an individual level, predictors include predisposing factors, such as demographic factors, personal health practices, and perceived need. Furthermore, reciprocal relationships are proposed within and between individual and systemic factors such that variables within each level (e. g. demographics factors and personal health practices) are in a feedback loop with systems-level factors (e. g. gender and health insurance properties) (Andersen, 1995).

Overall, the Behavioral Model of Health Service Use provides a comprehensive framework for understanding the influence of healthcare systems and individual factors on health service use. However, the specific mechanisms of action involved in help-seeking are unclear with relatively little focus on the individual factors associated with help-seeking. Although this model focuses on the importance of access and healthcare infrastructure in promoting health service use, such issues may have less influence in

college settings due to the presence of campus counseling services. Campus counseling services may limit the influence of cost and access barriers on help-seeking.

Prior research on MHHS in college students has found that knowledge of access predicted a sizeable proportion of the variance in MHHS in symptomatic individuals (Yorgason et al., 2008). Additional research has found that presence of insurance, a potential predisposing factor to healthcare use, did not significantly differentiate between college help seekers and non-help seekers (Eisenberg et al., 2007). These results suggest that the Behavioral Model of Health Service Use may be conceptually incompatible with college student populations, as the individual perception of access may have a greater influence than the actual presence of resources. Other healthcare use models incorporating further individual factors focusing on perceptions of healthcare systems may have a better fit.

The health belief model. In contrast with the Behavioral Model of Health Service Use, the Health Belief Model (HBM) has a stronger focus on behavioral factors instead of focusing predominantly on healthcare system characteristics. The HBM has been extensively studied and is widely used in understanding health behaviors. Specifically, the HBM focuses on three modules of constructs including individual perceptions, modifying factors, and likelihood of action factors. Individual perceptions include perceived susceptibility, severity, and self-efficacy concerning the health issue in question. In the context of mental health issues, examples of each construct may include the likelihood of developing depression, severity of current symptoms, and ability to seek help. Modifying factors include demographic differences, personality, knowledge, perceived threat of the health issue, and cues to action, such as attending lectures on a

health issue and other activities which enhance awareness and potentially modulate

perceived threat. Likelihood of action factors include actual likelihood of health care use

and are influenced by perceived benefits and barriers to treatment (Stretcher &

Rosenstock, 1997).

Overall, the HBM accounts for various individual factors and introduces the

influence of individual perceptions of barriers, threat, severity, and susceptibility as well

as knowledge addressing several weaknesses of the Behavioral Model of Health Service

Use. However, a recent meta-analysis suggests that the HBM's ability to predict help-

seeking may be limited to specific contexts. Carpenter (2010) found several different

patterns of relationships in reviewing prior research. Specifically, perceived

susceptibility and severity were weakly related to health behaviors. Instead, perceived

benefits and barriers had the strongest influence. For susceptibility and severity, the

method of assessment greatly modulated the effect of these variables on health behaviors.

Predictors and outcome variables were more strongly related to health behaviors if

predictors and outcome variables were measured relatively close in time. The

relationship between perceived benefits and barriers and health behaviors was not related

to proximity and measurement. When considering different study contexts, the HBM

was found to be a stronger predictor of health behavior in prevention and drug

compliance studies than treatment or behavior changes (Carpenter, 2010).

Considering the strength of the HBM in specific health care contexts and the

relatively weak relationship between perceived susceptibility and severity and health

behaviors, the HBM may have limited application to understanding MHHS in college

students. The HBM also does not account for other factors such as social norms and

stigma. Accounting for social factors may be important for understanding the context of MHHS.

  The network-episode model. Although the HBM provides for an elaborate framework of individual variables, there is a lack of evaluation of social context. The Network-Episode Model (NEM) addresses these concerns through revolutionizing modern sociological theory positing that a strict cost-benefit analysis is the main mechanism of help-seeking. Specifically, the NEM focuses on social aspects of health care within a dynamic society. Consequently decision making consists of interactions between society and the individual. Pescosolido (1992) proposes four main tenets to the NEM. The individual is seen as being embedded in society and having existing characteristics, such as previous knowledge and reasoning ability. Interactions between the individual and society are seen as a dynamic process instead of a progression of discrete events. In defining the unit of analysis, Pescosolido (1992) advocates the use of interactional events such that the individual is embedded in his or her social network, as opposed to evaluating the individual in isolation. Finally, other contextual factors such as time and place act as additional networks where the individual is entangled (Pescosolido, 1992).

  Although the NEM provides for an understanding of the individual as an integrated part of multiple contextual factors including social, temporal, and geographical influences, it lacks a description of specific mechanisms and associated predictors for help-seeking processes. The influence of contextual factors on individual mechanisms is clearly stated in this model, but it does not account for internal mechanisms of help-seeking. Much like the Behavioral Model of Health Care Use, the NEM does not account

for the individual's perceptions and predispositions independent of societal factors. In understanding the influence of campus culture on MHHS, a candidate model which accounts for both individual internal mechanisms and broader social influences may better explain interactions within college student contexts.

       The theory of planned behavior. Prior models have had significant issues in balancing the need to incorporate both individual and social context variables in predicting help-seeking. The Behavioral Model of Health Service Use lacked a clear description of individual level influences, whereas the NEM focused almost entirely on societal level constructs. The HBM, though promising in its balance of individual and societal level constructs, contains several variables which fail to predict health behaviors. Consequently, a model which integrates social and individual factors, clear mechanisms of action, and empirical support is needed. One such potential model is the Theory of Planned Behavior (TPB) (Ajzen, 1991). The Theory of Planned Behavior focuses on predicting behavior and behavioral intentions using three main, inter-related factors of perceived behavioral control (PBC), attitudes, and subjective norms (SN). Each of these factors is associated with their own respective beliefs such as control beliefs, behavioral beliefs, and normative beliefs. Each of these factors (e. g. behavioral beliefs and attitudes), in turn predict behavior via behavioral intentions.

       PBC is the perceived ability to perform a behavior. Relatedly, control beliefs involve beliefs about factors which may influence performing a particular behavior. For example, control beliefs concerning MHHS may include beliefs concerning the availability of mental health services. In contrast, PBC would consist of one's perceived ability to seek help based on overall control beliefs. Attitudes consist of the evaluation of

the importance of a behavior. Behavioral beliefs are beliefs concerning the relationship between a behavior and a desired outcome. Example behavioral beliefs include believing that mental health treatment is not effective. An example of attitudes would be whether participating in mental health treatment is important based on overall behavioral beliefs. Social norms consist of perceived societal influence on performing a particular behavior. Normative beliefs describe the expectations of an individual's social circle. For example normative beliefs may include a personal belief that their social group would disapprove of medication use. An example of a social norm would be the perceived pressure of his or her social group to not utilize mental health treatment based on normative beliefs (Ajzen, 1991).

Prior research has found that TPB variables consistently predict intentions and behavior accounting for 27 percent of variance in actual behavior with a stronger relationship with self-reported behavior and 49 percent of the variance in behavioral intentions. When considering specific components of TPB, attitudes accounted for 24 percent of behavioral intentions, and SN accounted for 12 percent. PBC accounted for approximately 18 percent of the variance associated with behavioral intentions. Each of these factors was correlated with their respective, associated beliefs which accounted for 25 to 27 percent of the variance for each associated construct. When considering prior research studies, the influence of attitudes and social norms may be dependent on the method of evaluation. Specifically, more extensive assessment of these constructs were associated with increased predictive ability (Armitage & Conner, 2001).

When considering different help-seeking theories, TPB provides for the best balance of perceived individual and social factors with consistent relationships with

behavioral intentions and behaviors. Unlike the Behavioral Model of Health Service Use and the NEM, TPB accounts for individual factors and an individual's perception of external factors through measurement of behavioral, control, and normative beliefs and associated constructs. In addition, TPB has evidence of strong relationships between its subcomponents and behavior and has broad application to different contexts in contrast with the HBM. Considering its versatility, balance in assessing individual and social factors, and prior research support, TPB provides an ideal framework in understanding the influence of campus culture on MHHS. In order to understand potential constructs of interest to be explored within the framework of TPB, a review of prior research predictors associated with mental health treatment, such as barriers to treatment, may aid in building a framework of investigation.

Barriers to Treatment

Although there have been many theories and associated predictors proposed to explain help-seeking, logistical barriers, especially those which have a negative impact on perceived ability to seek help, may also play a role in help-seeking. Barriers to mental health treatment are various factors which impede MHHS. Within the context of TPB, barriers to mental health treatment may be seen as part of the control beliefs and perceived behavioral control constructs, as these barriers relate to an individual's beliefs and perceived ability to engage in mental health treatment (Ajzen, 1991). Such inhibiting factors may exist of various levels of mental health treatment systems.

In describing these levels, Giel, Koeter, and Ormel (1990) propose three levels of barriers to mental health treatment: individual factors, provider factors, and systemic factors. Individual factors include knowledge of treatment services and ability to identify

mental health issues. Provider factors instead focus more on provider skill and ability to accurately provide mental health treatment, assessment, and referral. Systemic factors consist of capacity issues such as limited access to mental health professionals and expense (Giel, Koeter, & Ormel, 1990). Through evaluating these different types of factors, there has been considerable research establishing relationships between barriers to treatment and MHHS (for review (Vanheusden et al., 2008; Yorgason et al., 2008)).

Prior research with general adult samples has found significant individual, provider, and systemic level barriers to mental health treatment. At the individual level, poor awareness of mental health benefits is prevalent with 25% of adult individuals being unaware of whether they carried mental health benefits (Mickus, Colenda, & Hogan, 2000). Being unaware of mental health benefits may discourage individuals from seeking help due to concerns about convenience and cost. At the provider level, further work is necessary to improve mental health treatment access. Specifically, family physicians have been found to have poor ability to identify common mental health issues such as anxiety and depression with only 36% of cases being accurately identified (D. Kessler, Lloyd, Lewis, Gray, & Heath, 1999). Consequently, if an individual were suffering from depression but did not get an appropriate referral due to misdiagnosis, he or she may not receive adequate mental health services.

When considering the provider-patient relationship, there is significant conflict between primary care referrals and patient preferences which may result in noncompliance with treatment recommendations. Specifically, prior research has found that individuals prefer psychotherapy when seeking mental health treatment (van Schaik et al., 2004). However, the majority of primary care physicians recommend

pharmacotherapy for treatment (Robinson, Geske, Prest, & Barnacle, 2005). At the systemic level, Mojtabai (2005) found that cost barriers, involving treatment costs and insurance coverage, have been increasing and greatly impede MHHS (Mojtabai, 2005). In evaluating current evidence, complex interactions exist between different barrier levels which impede MHHS. As these studies were conducted with the general adult population, there may be limited utility in understanding MHHS for college students and the specific individual, provider, and systemic barriers involved.

In considering mental health treatment in the context of college students, an understanding of analogous individual, provider, and systemic barriers to help-seeking is necessary. Many college campuses provide free counseling services to students, resulting in a different initial system from that of primary care referrals. Prior research suggests that lack of knowledge of services plays a significant role in college MHHS accounting for up to 15% of the variance in symptomatic, non-users (Yorgason et al., 2008). Overall, 58% of a college sample cited lack of knowledge and time as major barriers to MHHS with 25% of students being unaware of how to obtain mental health services (Vanheusden et al., 2008; Yorgason et al., 2008).

Within these issues concerning knowledge of how to seek help, there remain other misconceptions concerning college counseling services. In one study, only 49% of college students knew the location of the college counseling center, and almost 60% did not know services were free (Eisenberg et al., 2007). In contrast to the general population, insurance issues were not a major concern for most college students when considering mental health treatment (Eisenberg et al., 2007). Overall, these studies suggest that extensive barriers exist concerning the ability of college students to seek

mental health treatment. However the interpretation and beliefs associated with such

barriers remains unclear. In understanding how the appraisal of barriers and

environmental factors may influence MHHS, attitudes may also play a major role.

Attitudes

Although physical barriers to treatment may influence MHHS, attitudes

associated towards treatment may explain the evaluation of barriers and associated beliefs.

Attitudes influence a variety of behaviors in daily life and are defined as a mental process

that synthesized cognitive and emotional appraisals in a way which influences an

individual's experience of an object (Crano & Prislin, 2006). Attitudes have been found

to be related to a variety of issues including but not limited to prejudice, relationships,

and academic success (Credé & Kuncel, 2008; De Leeuw, Engels, Vermulst, & Scholte,

2008; Tynes & Markoe, 2010).   A recent meta-analysis found that attitudes explain

approximately 24% of the variance in measures of behavioral intentions (Armitage &

Conner, 2001). Within TPB, attitudes focus on positive and negative values associated

with a behavior (Ajzen, 1991). In the context of MHHS, positive attitudes towards

mental health treatment have been associated with increased MHHS intentions (Carlton

& Deane, 2000; Cellucci, Krogh, & Vik, 2006; P. Y. Kim & Park, 2009). In order to

better elucidate the relationship between attitudes and behavior, attitudes theory may help

explain attitude formation and potential mechanisms influencing behavior.

Prior research has proposed that attitudes can be understood as a multicomponent

construct with distinct parts. Breckler (1984) proposed a tripartite model describing

affective, behavioral, and cognitive subcomponents. The affective component can be

understood as the emotional response to a specific object. The cognitive component

focuses on the specific thoughts ranging from positive to negative associated with a particular object. The behavioral component focuses on both conscious and nonconscious behaviors associated with a particular object (Breckler, 1984). In the context of MHHS and associated negative attitudes, an affective component could be feeling fear towards mental health treatment. In contrast, a related cognitive component could be thinking that individuals with mental health issues are dangerous. A behavioral component of a negative attitude could be avoiding proximity with the student counseling center.

In addition to these components of attitudes, there are also different types of attitudes. One model describing types of attitudes focuses on dual attitudes, explicit and implicit, associated with a particular object. Within this model, explicit and implicit attitudes are stored together in memory. Implicit attitudes are thought to activate automatically. Explicit attitudes require conscious effort to engage. Overall, implicit attitudes are thought be more resistant to change than explicit attitudes (T. D. Wilson, Lindsey, & Schooler, 2000). For example, an explicit attitude concerning mental health issues would be an effortful statement about the importance of mental health treatment after awareness training. Instead, an implicit attitude would be an automatic thought on the dangers of psychotropic medication use.

In the context of MHHS, the necessity of cognitive effort for overriding negative implicit attitudes may be implicated when considering that greater symptom severity has been associated with stronger MHHS intentions and more positive MHHS attitudes (Komiya et al., 2000; Sherwood et al., 2007; Van Voorhees et al., 2006). Although attitudes explain a proportion of the variance in general behavior (Armitage & Conner,

2001), much variance remains unexplained. This may be especially true for factors such as stigma which may provide additional information concerning the influences of broader social norms.

Stigma

Mental health stigma is a major factor which may impede MHHS. Mental health stigma is especially widespread in college populations with approximately 70% endorsing that mental health treatment carries social stigma (Golberstein, Eisenberg, & Gollust, 2008). Stigma is defined as a multicomponent phenomenon which includes stereotypes, prejudice, and discrimination against members of a particular group (Crocker, Major, & Steele, 1998). Within TPB, stigma may be seen as an indicator for subjective norms which account for the perceived social pressure an individual feels to engage in a behavior (Ajzen, 1991). For example, perceived social disapproval through stigmatization of individuals with mental health issues may negatively influence an individual's likelihood of engaging in mental health treatment. In considering different subcomponents of stigma, stereotypes consist of overgeneralized descriptions. Prejudice describes negative attitudes and feelings against particular group members. Discrimination is the behavioral component of stigma, such that individuals act in a way which infringes upon the rights of stigmatized individuals (Crocker et al., 1998). In the context of mental health, a stereotype would be that all depressed individuals are bad party guests. An example of prejudice would be having negative feelings towards a depressed friend. Discrimination would be actively not inviting the depressed friend in question due to the associated prejudice and stereotypes.

Prior research has explored the interaction between several types of stigma with mental health issues. These include public stigma and self-stigma. Self-stigma behaviors such as concealment of mental health history have been associated with increased distress and anxiety as well as interpersonal difficulties (Smart & Wegner, 1999). Public stigma has been associated with higher burden of illness, increased impairment, and receiving poorer care (Hinshaw, 2005; Sartorius, 1998). Public perception of mental health issues is apparent in popular media presenting individuals suffering from mental health issues as violent and dangerous (Wahl, 1995). Mental health stigma is a pervasive societal issue with even adolescents and children associating mental health issues with violence, poorer academic performance, and other negative qualities (Adams, Lee, Pritchard, & White, 2010; Penn et al., 2005; Spitzer & Cameron, 1995).

Overall, there is substantial evidence that stigma has considerable negative effects on individuals with mental health issues. Although there has been some research looking at self and public mental health stigma, little research has been done exploring cultural and community contexts of mental health stigma. In interpreting these findings, an understanding of models concerning the mechanisms of stigma may provide some guidance.

Stigma is a complex process, the mechanisms of which are still being delineated and explored. Some specific models of stigma include Terror Management Theory and the Identity Threat Model (Major & O'Brien, 2005; Pyszczynski, Greenberg, & Solomon, 2005). Terror management theory conceptualizes stigma as a defensive response against things which remind individuals of the "terror" of death (Pyszczynski et al., 2005).

When considering MHHS specifically, acknowledging mental illness and consequently seeking treatment may be discouraged by fears of death associated with illness.

In contrast, the Identity Threat Model focuses on three mechanisms of stigma which include outgroup conceptualization, situational factors, and personal variables. Outgroup conceptualization describes whether an outgroup is popularly associated with ostracism. Situational factors describe group dynamics based upon the number of interactions with individuals of a majority group. Personal variables specifically focus on appraisal and dispositional characteristics such as resilience against discrimination and minimizing stigmatizing actions (Major & O'Brien, 2005). These factors may influence feelings of stigma in individuals interested in seeking mental health treatment in their perception of individuals with mental health issues as an ostracized outgroup. This outgroup determination is drawn from interactions with such individuals and associated negative appraisals. These theories provide a framework to understand the mechanisms of mental health stigma.

While stigma plays a clear role in mental health issues, further research is necessary to discern the underlying mechanisms which lead to stigmatization. Considering the mechanism of outgroup stigmatization, as described in the Identity Threat Model, attitudes may play a significant role in stigma and its precipitants (Major & O'Brien, 2005). For the purposes of understanding MHHS, the underlying bases of attitudes and how they interact with other factors, such as stigma, may provide additional context for personal MHHS. In incorporating various variables influencing MHHS, a clear description of the contextual influences on individual perception of attitudes, stigma, and barriers to treatment may help deconstruct specific areas for future intervention. In

the context of emerging adulthood and college populations, the college campus may be a potential source of influence.

Campus Culture

Although stigma plays a significant role in MHHS, stigma is a socially-driven phenomenon and is consequently an integrated part of the larger cultural environment. Campus culture is defined as a set of "deeply held meanings, beliefs, and values" by a given campus (Peterson & Spencer, 1990). In the context of mental health, campus culture issues concerning meaning may include interpretation of the lack of marketing of mental health services being suggestive of campus disapproval of mental health service use. Campus beliefs include believing that counseling services are unavailable. Values involve whether mental health treatment is seen as a priority in a student's daily life. Campus culture is dynamic and changes over time. Campus culture beliefs, meanings, and values interact with each other through the various groups that compose a college campus, such as students and faculty (Peterson & Spencer, 1990). In exploring the influence of campus culture on college life, prior research has focused on different areas including academic outcomes and substance use.

Concerning the interaction between faculty and student culture Tsui (2000) found that variables involving faculty and student attitudes such as belief in diverse pedagogical methods, preferring to treat students as responsible adults, and positive attitudes towards political activism among other factors predicted higher student critical thinking skills independent of institutional admissions selectivity. These findings suggest that campus culture, specifically student and faculty attitudes of a given campus, has some influence on the development of specific behaviors, such as critical thinking skills outside of initial

academic characteristics for admission (Tsui, 2000). Similar interactions between campus groups have been found concerning issues of substance abuse.

When considering mental health issues, previous studies on student culture have focused on how perceived cultural factors, specifically perceived campus beliefs and values, are associated with substance use. Students have been found to hold incorrect beliefs, such that they overestimate the amount of drinking occurring among other students. Such incorrect beliefs have been found to be associated with increased personal drinking (Bertholet, Gaume, Faouzi, Daeppen, & Gmel, 2011). Specific student culture groups such as athletes and religious students have also been associated with differential levels of drinking, such that students more interested and skilled in social endeavors are perceived as heavier drinkers than those student types associated with academics (Ashmore et al., 2002). As more socially skilled individuals are perceived as more heavy drinkers, students may feel that there is some social value to heavy drinking. These results suggest that campus beliefs delineate different drinking patterns associated with different social groups. As student-perceived campus beliefs are associated with specific behaviors, beliefs concerning mental health treatment may also influence the student perception of treatment acceptability and prevalence. However, evaluating only perceptions concerning student culture does not account for perceptions of other campus group's associated beliefs and values.

The majority of prior studies of campus culture have focused on only one viewpoint of campus culture via faculty perspectives or student perspectives in isolation (Ashmore et al., 2002; Bertholet et al., 2011; Hart & Fellabaum, 2008). By ignoring how these perspectives may interact as perceived by students, there may be substantial

information missing concerning different components of campus culture. Consequently,

efforts should be made to assess the multiple viewpoints that formulate campus culture

(Hart & Fellabaum, 2008). In understanding a complex process, such as MHHS, faculty

and student viewpoints in isolation may be unable to discern the underlying beliefs,

meanings, and values perceived by student considering mental health treatment. In

incorporating different aspects of campus culture, a clear theoretical model is necessary.

Considering specific factors of culture, Sue (2001) proposed a 5 X 4 X 3 model of

multicultural competence in counseling for clinicians. At the first level, five factors

focused on different racial/ethnic groups. At level two, Sue described the different levels

of interaction in counseling ranging from individual interactions to greater societal

influences. Level three is composed of components of cultural competence such as

awareness of beliefs and attitudes, knowledge, and skills. Each of these levels interacts

for the development of cultural competence in clinical practice. As this study focuses

specifically on campus culture within specific larger campus groups as opposed to

racial/ethnic groups, only interactions between different groups and components of

cultures were explored.

For the purposes of examining campus culture and MHHS, an exploration of

individual, group, and organizational interactive elements adapted from Sue's (2001)

model as well as components of campus culture (i.e. beliefs, meanings, and values) may

help to account for different variables which influence campus culture. Individual

variables include personal attitudes, beliefs, and behaviors. For example, on an

individual level, there may be positive or negative attitudes towards mental health

treatment. Group level variables include cultural differences associated with group

differences such as race, gender, and other factors associated with social groups (Sue, 2001). In the context of mental health treatment, group level variables include discrepant beliefs about accessibility of mental health services between peers and other members of the student body. Organizational variables include institutional policies, programs, practice, and structures. For example, organizational factors such as faculty and administrative endorsement of MHHS may create a supportive mental health environment. Each of these aspects of campus culture may play a distinct role in MHHS, as studies suggest that campus cultural factors may influence thoughts and behaviors.

When considering the influence of campus culture, the degree of influence may depend upon how strongly a student identifies with his or her campus. Prior research suggests that individuals report in-group attitudes and beliefs as being more similar to their own attitudes and beliefs and less similar to those of an out-group (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Thus, the degree to which an individual identifies with a group may affect how he or she reports perceived group beliefs. In the context of exploring campus culture, individuals may report campus beliefs and attitudes as being more or less similar to their own beliefs and attitudes depending on how strongly they identify as belonging to their campus. Including measures of campus belonging may help to control for the effect of group identification on perceived campus culture.

In summary, prior research on campus culture has found that perceived peer, institutional, and student body perspective influence a multitude of behaviors in emerging adults including mental health issues. This suggests that evaluation of multiple components of perceived culture as well as the level of campus belonging may be necessary to gain a more complete understanding of underlying interactions between peer,

institutional, and student body influences. Furthermore, campus culture variables such as student perceptions of attitudes and behaviors have been found to be associated with mental health issues such as substance use. In extending this research to MHHS, establishing current variables associated with MHHS may help guide the application of campus culture to specific constructs associated with health decision making.

Hypotheses

As prior research suggests a lack of knowledge concerning the influence of campus culture on MHHS in college students, the following framework will be used to study this relationship using the framework of the Theory of Planned Behavior (TPB) (Ajzen, 1991). Specifically, the perceived behavioral control, attitudes, and subjective norms components of TPB were studied through assessing perceived campus barriers to treatment, mental health treatment attitudes, and stigma. Evaluating campus culture from multiple perspectives remains rare in the literature, as most studies focus solely on faculty or student perspectives and have not focused on mental health issues (Hart & Fellabaum, 2008). Consequently, evaluating campus culture and its influence on MHHS may help to increase knowledge of campus culture interactions and lead to potential future targets for interventions facilitating college student MHHS. Through measurement of campus culture from multiple perceived perspectives, the contribution of perceived administrative/faculty, peer, and student body beliefs can be included for a better estimation of the overall campus culture of MHHS.

In considering different components of TPB and perceived perspectives, the following relationships are hypothesized (see Figure 1):

- Hypothesis 1: The relationship between perceived campus attitudes towards mental health treatment and MHHS will be significantly mediated by personal attitudes towards mental health treatment when controlling for demographic variables (Attitudes). Specifically, perceived campus attitudes and personal attitudes will be significantly positively associated with MHHS. The introduction of the indirect effect into the model will significantly attenuate the relationship between perceived campus attitudes and MHHS.

- Hypothesis 2: The relationship between perceived campus barriers to MHHS will be significantly mediated by personal perceived MHHS barriers when controlling for demographic variables (Perceived Behavioral Control). Specifically, perceived campus barriers and personal barriers will show a significant negative associated with MHHS. The introduction of the indirect effect into the model will significantly attenuate the relationship between perceived campus barriers and MHHS.

- Hypothesis 3: The relationship between perceived campus stigma and MHHS intentions will be significantly mediated by personal stigma when controlling for demographic variables (Subjective Norms). Specifically, perceived campus stigma and personal stigma will show a significant negative associated with MHHS. The introduction of the indirect effect into the model will significantly attenuate the relationship between perceived campus stigma and MHHS.

Method

Participants

Participants were undergraduate students recruited from the undergraduate psychology participant pool from the University of South Florida using the SONA participant management system. Only participants who were currently enrolled, 18+ years of age, as well as fluent and literate in English were included in the study. No other exclusion criteria were in place for the study. Participants were not provided any financial reimbursement but were remunerated with extra credit based upon each instructor's course policies.

In total, 212 participants met criteria for valid responses to the survey (See Data Screening section for a detailed description of procedures). The majority of participants were female (86. 3%), Caucasian (57. 5%), and exclusively heterosexual (80. 8%). (Participants were distributed relatively equally across class years with 75% of the sample in years 1-3 of college. There was also some diversity in living arrangements, but the majority of participants lived off-campus or at home with family (69. 8%). Of the total sample, a relatively smaller group of individuals reported experience with mental health treatment with more individuals reporting having a family member who received mental health treatment (44. 3%) than having personal treatment history (25. 9%). Please see Tables 1, 2, and 3 for additional details.

Measures

      Demographics assessment. Demographic variables were assessed using a demographics assessment form which contained questions concerning year in school, age, gender, sexual orientation, race/ethnicity, as well as personal and family history of mental health treatment based upon aforementioned research suggesting that demographic variables may influence MHHS intentions (Biddle et al., 2004; Eisenberg, Golberstein, et al., 2009; Freyer et al., 2007; Milner & De Leo, 2010; Vogel et al., 2007; Yorgason et al., 2008). To assess past mental health treatment, participants were asked the following question, "Have <you or a family member> ever received mental health treatment?" The perspective was changed to assess both personal and family mental health history. For living arrangement, living arrangement options were collapsed into on- and off-campus categories. To assist interpretation, off-campus was coded as zero and on-campus was coded as one.

      Campus belonging. Campus belonging was measured using an adapted, three-item scale which has been validated in prior research (Bollen & Hoyle, 1990; Hausmann, Schofield, & Woods, 2007). This scale evaluates campus belonging in terms of both emotional and cognitive links to a given campus asking participants to rate the degree to which they agree or disagree with each item on a 5-point Likert scale ranging from 1, "Strongly Disagree", to 5, "Strongly Agree". Prior studies found this scale to have high internal consistency (α= . 89-. 93) and it has been associated with several variables focused on campus involvement (Bollen & Hoyle, 1990; Hausmann et al., 2007). In order to standardize across scales to decrease participant burden and provide a clear mid-point for each scale in this study, the measure was restructured into a 7-point Likert scale

ranging from 1, "Strongly Disagree", to 7, "Strongly Agree". Prior research suggests that scales with 7-points or more are associated with higher reliability (Preston & Colman, 2000; Weng, 2004).

      Stigma. Personal and perceived campus stigmas were assessed using a version of the Discrimination-Devaluation scale (aD-D) adapted for college student populations by Eisenberg, Downs, Golberstein, and Zivin (2009). The aD-D is a 12-item, self-report, measure evaluating stigma against individuals who have undergone mental health treatment. The original aD-D is rated on a 6-point Likert scale ranging from 1, "Strongly Disagree", to 6, "Strongly Agree". Prior research has found this scale to have strong internal consistency (α= . 89) and predictive validity for MHHS intentions (Eisenberg, Downs, Golberstein, & Zivin, 2009). However, in order to standardize across scales to decrease participant burden and provide a clear mid-point for each scale in this study, the measure was restructured into a 7-point Likert scale ranging from 1, "Strongly Disagree", to 7, "Strongly Agree".

      In order to assess a broader sense of stigma against individuals with mental health issues, the aD-D was adapted to focus on individuals who have mental health issues, as opposed to Eisenberg et al.'s (2009) wording which focuses solely on individuals who have received mental health treatment. This may provide a more comprehensive understanding of stigma, as individuals who seek mental health treatment are a smaller subset of the greater population with mental health issues. In addition, this scale was adapted to assess both personal and perceived campus stigma. The original scale uses "Most people believe" as the point of reference for each statement. This was instead replaced with "I believe" for the personal stigma measure and changed for each of the

perceived perspectives being assessed substituting with peer, student body, and administrative/faculty perspectives. For peer perspectives, "I believe" would be replaced by, "Most people in my social group believe". For the student body perspective, "Most students believe", would be used. For administrative/faculty perspectives, "I believe", would be substituted with, "Most faculty/administrators believe". This adaptation to different perspectives was standardized throughout all campus culture measures in this study. Overall, this scale contained 12-items per perspective resulting in 48-items in total.

Attitudes. Personal and perceived campus attitudes was assessed using the Attitudes Towards Seeking Professional Psychological Help Scale- Short Form (ATTSPPH-SF) which has been found to have strong validity and internal consistency (α= . 77-. 78) in both clinical and college student samples (Elhai, Schweinle, & Anderson, 2008). The ATTSPPH-SF is a 10-item, self-report, Likert scale, ranging from one, "disagree", to four, "agree". Prior research has found that the ATTSPPH-SF has a two-factor structure focusing on a participant's openness to treatment and how much he or she values/needs treatment (Elhai et al., 2008). However, in order to standardize across scales to decrease participant burden and utilize measurement properties associated with optimal reliability, the measure was restructured into a 7-point Likert scale ranging from 1, "Strongly Disagree", to 7, "Strongly Agree".

As the ATTSPPH-SF was developed for measuring personal attitudes, some adaptation is necessary to evaluate perceived campus attitudes. Instead of asking from the point of view of the participant, peer, student body, and administrative/faculty, perspective was assessed by altering the wording in the previously described, standardized manner. Such adaptations were also modified in order to maintain proper

grammar. For peer perspectives, "I believe" would be replaced by, "Most people in my social group believe". For the student body perspective, "Most students believe", would be used. For administrative/faculty perspectives, "I believe", would be substituted with, "Most faculty/administrators believe". Overall, this scale contained 40 items with 10 items for each perspective.

   Barriers to treatment. Perceived personal and campus barriers to treatment were assessed using the Barriers to Treatment Participation Scale (BTPS) developed by Kazdin, Holland, Crowley, and Breton (1997) to measure barriers in two ways: "treatment expectations and experiences" and "external demands" (Kazdin, Holland, Crowley, & Breton, 1997). For the purposes of this study, only the "external demands" subscale was used, as the "treatment expectations and experiences" subscale items focus on variables that are only applicable to individuals currently in treatment, as the focus of this study is on the infrastructure barriers perceived by college populations. The "external demands" subscale of the BTPS consists of a 10-item measure of Likert scale ranging from one, "Never had a problem", to five, "Very often a problem". The BTPS has been found to have strong reliability (α= .80) and predictive validity (Colonna-Pydyn, Gjesfjeld, & Greeno, 2007; Kazdin et al., 1997). In order to standardize across scales to decrease participant burden and utilize measurement properties associated with optimal reliability, the measure was restructured into a 7-point Likert scale ranging from 1, "Never a problem", to 7, "Very often a problem".

   In order to contextualize the BTPS for measurement of perceived campus barriers to treatment, some adaptation of wording is necessary. The original "external demands" subscale was used to assess perceived personal barriers to treatment. Adaptation of

wording for the point of reference from the self to peer, student body, and administrative/faculty perspectives allowed for assessment of multiple campus perspectives in accordance with other adapted measures in this study. Such adaptations were modified in order to maintain proper grammar. For peer perspectives, "I believe" would be replaced by, "Most people in my social group believe". For the student body, "Most students believe", would be used. For administrative/faculty perspectives, "I believe", would be substituted with, "Most faculty/administrators believe". In addition, as the scale was originally developed for evaluating caregiver barriers, adjustments would be made concerning references to children and family obligations to things more in line with college culture such as obligations to friends and academic endeavors. Also, the current BTPS assumes current treatment. In order to adapt to the current study, verb tense was adjusted to reflect potential treatment. For example, "I was too tired after class to come to a session." would be changed to, "I would be too tired after class to go to a session." This scale contained 40 items in total with 10 items for each perspective.

MHHS intentions. Personal MHHS intentions were assessed using the General Help-Seeking Questionnaire (GHSQ), a 22-item scale ranging from one, "Extremely unlikely", to seven, "Extremely likely", for a variety of potential MHHS sources. The GHSQ has two subscales, 11 items each, focusing on personal-emotional problems (PEP) and suicidal problems (SP). This scale has been shown to have strong internal consistency and validity for the full scale ($\alpha = .85$) and subscales (PEP: $\alpha = .70$; SP: $\alpha = .83$). The GHSQ has also been found to have predictive, convergent, and divergent validity (C. J. Wilson, Deane, & Ciarrochi, 2005).

Procedure

Participants were recruited using the USF psychology department SONA participant management system. Participants who signed up for the study were directed towards an online informed consent form explaining the background, purpose, procedures, risks and benefits, participant rights, and confidentiality policies of the study. Once consented, participants were directed towards an online-based survey form to complete.

The full survey required approximately 40-60 minutes to complete. Participants were not required to complete the survey to receive extra credit and could stop at any time. Following completion of the survey, participants were directed to a debriefing form explaining the purposes of the study and providing contact information for the university counseling center, in case of distress from the measures enclosed within the survey. All data from the study were identified only by an anonymous code unconnected to any identifying information. Data were stored on a secured, password protected server with access granted only to authorized research personnel. All consent data were stored in locked filing cabinets separate from participant study data.

Data Analyses

Following data entry, each scale was scored according to scoring guidelines in the literature. Following scoring, descriptive statistics were used to calculate means, standard deviations and ranges of peer, student body, and administrative perspectives for the aD-D, ATSPPHS-SF, and BTPS. Data were examined to detect challenges to normality including skew, kurtosis, and limited variability as well as other out-of-range and missing values. Full scale and subscale reliability were assessed for all measures using Cronbach's alpha (Cronbach, 1951).

Once data processing had been completed, analyses using bootstrapping mediation procedures were used to determine whether personal stigma, attitudes, and barriers significantly mediated the relationship between campus culture and MHHS intentions when controlling for demographics and other variables previously shown to be associated with MHHS. Although there are many methods available for mediation analysis, bootstrapping provides for the greatest statistical power and allows for testing of all paths involved in a proposed mediation relationship. Using repeated, random sampling, bootstrapping allows for the calculation of a 95% confidence interval. If the confidence interval does not include zero, results would suggest that personal attitudes, barriers to treatment, and stigma significantly mediate the relationship between perceived campus culture predictors and MHHS intentions (Hayes, 2009).

Using this bootstrapping method, analyses evaluated whether personal attitudes mediated the relationship between campus culture attitudes and MHHS (Hypothesis 1). These same analysis methods were used to evaluate whether personal barriers to treatment mediated campus culture barriers to treatment variables (Hypothesis 2) and whether personal stigma mediated campus culture stigma variables (Hypothesis 3).

Results

Data Screening

Prior to data analyses, participants were screened using several different criteria to determine whether responses were valid. Specifically, percentage correct on validity scales, amount of time spent on the survey, and completion of all major scales on the survey were required for inclusion in analyses (see Table 4). A total of 63 participants were excluded for failing to meet validity criteria.

When considering potential differences between participants who did and did not meet data screening criteria, participants who were excluded had significantly higher scores for personal stigma and significantly lower scores on personal attitudes, social group barriers, student body barriers, and faculty barriers ($p < .05$). For demographic differences, participants who were excluded were more likely to be a member of any racial/minority group or male ($p < .05$). These differences between groups suggest that excluded participants were qualitatively different from the group retained for analyses.

In addition to these criteria, descriptive statistics were used to evaluate data normality of constructs. Data were screened for completeness, skewness, kurtosis, and internal consistency. Total scores for each subscale were considered normally distributed if skewness and kurtosis was between +2 and -2 (Cameron, 2004). Each given subscale was required to have at least 80% of the items complete to meet criteria for creating a valid total scale score. Each total scale score was created by averaging across item

responses. In order to facilitate interpretation, comparison values from other studies were converted as necessary to their equivalent value on a seven point scale. Furthermore, internal consistencies of total scores were evaluated using Cronbach's α with a criterion of less than 0.70 for exclusion.

Descriptive Statistics

     Stigma. All mental health stigma total scores had high internal consistency. Mental health stigma perspectives were significantly different (F (99. 80, 2. 62) = 99. 80, $p < .001$, $\eta\rho^2 = 0. 32$). Bonferroni-corrected post-hoc analyses showed that Personal mental health stigma was significantly lower than perceived stigma from one's social group ($p < .001$), student body, and faculty/administrators ($p < .001$; See Table 5). The mean for personal stigma in this sample was significantly higher than prior research ($M = 2.35$; t (211) = 5.17, $p < .001$) (Eisenberg, Downs, et al., 2009). Skewness and kurtosis for all total scores were within limits for normality criteria.

     Attitudes. Overall, total scores for attitudes scales met criteria for high internal consistency. Attitudes perspectives were significantly different (F (2.82, 595.06) = 56.77, $p < .001$, $\eta\rho^2 = 0.21$). Bonferroni-corrected post-hoc analyses showed that personal attitudes towards mental health treatment (were significantly more positive than perceived attitudes of one's social group ($p < .001$) and student body ($p < .001$) but not significantly different from faculty/administrators ($p > .05$; See Table 5). The mean for personal attitudes towards mental health treatment was significantly more positive than in the original validation sample ($M = 3. 3$; t (211) = 10. 90, $p < .001$) (Elhai et al., 2008). Skewness and kurtosis for total scale scores were within limits for normality criteria.

Barriers to treatment. Barriers to treatment total scores met criteria for high internal consistency. Barriers to treatment perspectives were significantly different (F (2.44, 513.80) = 51. 21, $p < .001$, $\eta\rho^2 = 0.20$). Bonferroni-corrected post-hoc analyses showed that personal barriers to treatment were significantly lower than perceived barriers to treatment of one's social group, student body, and faculty/administrators ($p < .001$; See Table 5). The mean for personal barriers to treatment was significantly higher than that found in prior research ($M = 2.10$, t (211) = 23.48, $p < .001$). However, prior research was based on parent samples involved in child mental health treatment, so it is difficult to interpret this difference (Kazdin et al., 1997). Skewness and kurtosis for all total scores were within limits for normality criteria.

Campus belonging. The campus belonging total score had high internal consistency. Campus belonging was overall positive but was significantly lower than past research ($M = 5.57$; t (209) = -3.55, $p < .001$; See Table 5). Skewness and kurtosis met criteria for data normality.

MHHS intentions. The MHHS intentions total score (i.e.mental health professional, doctor/GP, or phone helpline) had adequate internal consistency. This study's sample was significantly more likely to endorse positive intentions to seek mental health treatment if faced with mental health issues than prior research ($M = 2.64$; t (211) = 10.42, $p < .001$; See Table 5) (C. J. Wilson et al., 2005). Skewness and kurtosis were within range limits for normally distributed data.

Data Processing for Mediation Composites

In order to test the hypothesized mediation relationships, composites were created by averaging social group, student body, and faculty/administrator total scale scores for

each construct. When considering mental health stigma, perceived campus stigma was significantly higher than personal stigma (F (1, 211) = 175.95, p < .001, $\eta\rho^2$ = 0.46; See Table 5). The perceived campus stigma composite had high internal consistency comparable to its constituent subscales. Skewness and kurtosis were within criteria for data normality.

Perceived campus attitudes were significantly more negative than personal attitudes (F (1, 211) = 60.93, p < .001, $\eta\rho^2$ = 0.22; See Table 5). The perceived campus attitudes composite had high internal consistency comparable to its constituent subscales. Skewness and kurtosis were within criteria for data normality.

Perceived campus barriers were significantly higher than personal barriers (F (1, 211) = 95.91, p < .001, $\eta\rho^2$ = 0.31; See Table 5). The perceived campus barriers composite had high internal consistency comparable to its constituent. Skewness and kurtosis were within range for data normality.

Hypothesis Testing

Hypothesis 1: Campus attitudes mediation. The relationship between campus attitudes and MHHS intentions was hypothesized to be mediated by personal attitudes. That is, it was hypothesized that campus attitudes would be associated positively with personal attitudes, and that through this association, MHHS intentions would be predicted when controlling for demographics and other variables previously shown to be associated with MHHS.

Bootstrapping analysis showed that campus attitudes was not significantly associated with MHHS intentions (b = 0.29, SE = 0.15, p = .06; C Path). Campus attitudes however was significantly related to the mediating variable, personal attitudes (b

= 0.47, *SE* = 0.10, *p* < .0001; A Path). Personal attitudes was significantly associated

with MHHS intentions (b = 0.60, *SE* = 0.11, *p* < .0001; B Path). When testing the

indirect pathway of campus attitudes to MHHS intentions through personal attitudes,

bootstrapping analysis showed a significant indirect effect (b = 0.28, *SE* = 0.09, 95% CI =

0.14 – 0.49, *p* < .05). Thus, after accounting for the indirect path, the direct effect of

campus attitudes on MHHS intentions was attenuated from the C Path effect suggesting

that the relationship between campus attitudes and MHHS intentions was fully mediated

by personal attitudes (b = 0.01, *SE* = 0.15, *p* = .96; C' Path). Although the C path was

not significant, the significant indirect effect and attenuation in the C' path support a

significant mediation relationship for personal attitudes. Campus belonging (b = .12, *p*

< .01) and living arrangement (b = -.50, *p* < .05) were significant covariates for this

model. Overall, the total model including the mediation path accounted for

approximately 25% of the variance in MHHS intentions (R^2 = 0.25; See Figure 2).

 Hypothesis 2: Campus barriers mediation. Personal barriers to treatment were

hypothesized to mediate the relationship between campus barriers to treatment and

MHHS intentions. Bootstrapping analysis showed that campus barriers were

significantly associated with MHHS intentions (b = -0.29, *SE* = 0.10, *p* < .01; C Path).

Campus barriers were significantly related to the mediating variable, personal barriers (b

= 0.68, *SE* = 0.08, *p* < .001; A Path). Personal barriers were significantly associated with

MHHS intentions (b = -0.31, *SE* = 0.09, *p* < .001; B Path). When testing the indirect

pathway of campus barriers to MHHS intentions through personal barriers, bootstrapping

analysis showed a significant indirect effect (b = -0.21, *SE* = 0.07, 95% CI = -0.36 – -0.09,

p < .05). Thus after accounting for the indirect path, the direct effect of campus barriers

on MHHS intentions was not significant and attenuated from the C Path effect suggesting full mediation (b = -0.07, *SE* = 0.12, *p* = . 53; C' Path; See Figure 3). Campus belonging (b = .15, *p* < .01) and living arrangement (b = -. 56, *p* < .05) were significant covariates for this model.   Overall, the total model including the mediation path accounted for approximately 19% of the variance (R^2 = 0.19).

       Hypothesis 3: Campus stigma mediation. The relationship between perceived campus stigma and MHHS intentions was hypothesized to be mediated by personal stigma. Bootstrapping analysis showed that neither campus nor personal stigma were significantly associated with MHHS intentions (b = -0.08, *SE* = 0.10, *p* = .46; C Path; b = 0.14, *SE* = 0.13, *p* = .26; B Path). Campus stigma however was significantly associated with the mediating variable, personal stigma (b = 0.68, *SE* = 0.06, *p* < .001; A Path; See Figure 4). Campus belonging (b = .17, *p* < .01) and living arrangement (b = -.60, *p* < .05) were significant covariates for this model. As both the B and C paths were not significant, the criteria for statistical support of mediation were not met.

Discussion

The goal of this study was to explore the relationship between perceived campus stigma, attitudes towards mental health treatment, and barriers to treatment and MHHS intentions. In considering prior research, personal viewpoints of stigma, attitudes, and barriers have been shown to be associated with MHHS intentions. However, few studies have explored whether perceived aspects of these variables from different groups, such as from one's social group, student body, and faculty/administrative perspectives are associated with MHHS. In the current study, it was hypothesized that perceived campus culture variables would be significantly associated with MHHS intentions after controlling for demographic variables and that this relationship would be significantly mediated by personal stigma, attitudes, and barriers.

As expected, mediation analyses provided support for indirect relationships for some of the campus culture variables. In particular, the relationship between campus culture attitudes and MHHS was significantly and fully mediated by personal attitudes. These results provide evidence that the association between campus attitudes and MHHS may be better explained by an indirect rather than direct effect. Thus, personal attitude change may be an important mechanism through which campus attitudes are associated with MHHS. Prior research suggests that personal attitudes reflect attitudes from within a given individual's in-group (Turner et al., 1987). In considering in-group attitudes and their influence on personal attitudes, the current study replicated findings showing the

influence of differences between workplace cultures on attitudes towards success and subsequent business outcomes (Bartel, Freeman, Ichniowski, & Kleiner, 2011). Thus, culture, whether it be that of a workplace or university, may play an intricate role in personal attitude development.

In addition, attitudes theory suggests that explicit attitudes require more cognitive effort to engage than implicit or automatic attitudes (T. D. Wilson et al., 2000). Explicit attitudes are those which an individual endorses in public either in a conversation with friends or on a survey. In contrast, implicit attitudes are automatic and have more covert behavioral expression (T. D. Wilson et al., 2000). Prior research suggests that the relationship between attitudes and health behaviors may depend on whether the attitude is implicit versus explicit. In a recent study focused on psychiatric medication use, explicit attitudes were found be associated with self-reported medication use. Implicit attitudes were however associated with insight into mental health issues and need for treatment (Rüsch, Todd, Bodenhausen, Weiden, & Corrigan, 2009). In the context of the current study, personal and campus culture attitudes were measured using explicit measures and found similar findings concerning self-reported MHHS intentions. However the current study did not measure implicit attitudes, so it is uncertain how these may have played a role in the indirect effect between attitudes constructs and help-seeking intention. Future research which includes measures of implicit attitudes may improve understanding of intermediary steps to health behaviors, such as insight and perceived need.

When considering barriers to treatment, mediation analyses supported the hypothesis that the relationship between campus culture barriers and MHHS would be mediated by personal barriers. Specifically, the relationship between campus barriers and

MHHS was significantly and fully mediated by personal barriers. The association between personal barriers and MHHS replicated findings from the general adult literature which have shown that cost and other physical barriers may decrease the likelihood of seeking mental health treatment (Mojtabai, 2005; Vanheusden et al., 2008; Yorgason et al., 2008). These results also fit with prior theory on barriers to treatment concerning the negative influence of structural barriers on help-seeking (Giel et al., 1990).

While prior research has not examined the role of perceived campus barriers, research examining organizational factors and adopting health-related behaviors has shown similar patterns of relationships. Specifically, adoption of evidence-based treatments in certain settings has been associated with differences in the number of physical barriers, such as lack of staff and resources (Knudsen, Roman, & Oser, 2010). It is interesting to note that such research has also found that increased contact with pharmaceutical representatives is associated with increased adoption of evidence-based practices (Knudsen et al., 2010). When considering areas for future intervention, frequent engagement with university students concerning mental health treatment may help to decrease perceived campus and personal barriers as university students may then perceive that there are sufficient campus mental health staff and resources.

Another possibility is that the relationship between personal and campus barriers may be the result of confirmation bias. Confirmation bias is a phenomenon that involves individuals selectively attending to information which confirms their beliefs and disregarding competing information (Nickerson, 1998). In the case of campus barriers, participants may have responded based on selectively acquired information from campus life. For example, the presence of fliers, ads, and other media focused on promoting

awareness of free counseling services on-campus may be ignored or given less weight due to incongruence with one's own perceptions of barriers and result in a positive relationship between personal and perceived campus barriers to treatment. Therefore, the relationship between perceived campus barriers and personal barriers may be due to schemas based on biased information affirming one's beliefs. Future research should explore the directionality of the relationship between personal and perceived campus barriers to better control for confirmation bias.

Although the barriers mediation finding is in line with some prior research, other research suggests that the importance of physical barriers to treatment remains unclear. Recent research on mental health treatment and barriers has found that participants more highly rank stigma-related barriers, such as fear of discrimination, than physical barriers as factors which would preclude seeking mental health treatment (Clement et al., 2012). Future research should consider the relative perceived distress associated with experiencing physical barriers versus stigma in mental health treatment.

In considering the relationship between perceived campus and personal stigma variables on MHHS, perceived campus stigma was not significantly related to MHHS intentions in the context of the mediation model. In congruence with criteria for mediation, a significant, positive relationship was found between campus stigma and personal stigma. This supports prior research which has shown that perceived stigma is associated with personal stigma (Vogel, Bitman, Hammer, & Wade, 2013). Other research has also shown that variations in ratings of personal stigma may be dependent on group membership suggesting the potential influence of cultural differences (P. Kim, Thomas, Wilk, Castro, & Hoge, 2010). In their study, Kim, Thomas, Wilk, Castro, and

Hoge (2010) found significant differences in mental health stigma between different military branches. Similar processes may be present when considering the perception of different campus cultural perspectives on mental health stigma.

Although an association was found between perceived campus stigma and personal stigma, neither perceived campus stigma nor personal stigma were found to be associated with MHHS intentions. Thus, the data did not support direct or indirect relationships involving perceived campus stigma. It is possible that perceived campus stigma and personal stigma do not play a role in MHHS and that associated intentions are better explained by a direct relationship with perceived campus stigma. It is also possible that other aspects of stigma which may be more strongly associated with MHHS. This study measured personal stigma through items focused on a given individual's beliefs about individuals with mental health issues. Prior research has however shown that self-stigma, stigmatizing beliefs towards one's identity, may have significant influence on health-related behaviors. Specifically, some research shows that the degree of self-stigma predicts mental health treatment preferences and MHHS intentions (Rüsch, Corrigan, et al., 2009; Wade, Post, Cornish, Vogel, & Tucker, 2011).

In considering the negative finding involving personal stigma and MHHS intentions, another possible explanation is the activation of social comparison processes. Social comparison involves comparing one's self to a particular group. This can occur as either "upward" or "downward" social comparison. Thus, a group is seen as either possessing higher or lower levels of a particular trait. Prior research suggests that when participants are engaged in social comparison, negative effects associated with stigma become normalized (Johnson, Richeson, & Finkel, 2011). Consequently, it is possible

that rating perceived campus stigma may have encouraged social comparison processes that decreased the importance of personal stigma on MHHS intentions.

In considering other predictors found in the literature, this study supported evidence that campus belonging was positively associated with MHHS intentions. Prior research suggests that group identification is differentially associated with MHHS intentions towards different treatment types (Rüsch, Corrigan, et al., 2009). In addition, campus belonging has been associated with knowledge of campus services (Yorgason et al., 2008). Knowledge of campus services has been identified as a major barrier to MHHS on-campus (Yorgason et al., 2008). Thus, stronger campus belonging may increase knowledge of services and facilitate MHHS.

While several findings from the literature were replicated, this study failed to replicate prior relationships with demographics predictors (Biddle et al., 2004; Carlton & Deane, 2000; Eisenberg, Downs, et al., 2009; Eisenberg et al., 2007; Freyer et al., 2007; Milner & De Leo, 2010; Mojtabai, 2005; Vogel et al., 2010; Vogel et al., 2007). Specifically, age, gender, race, year in college, sexual orientation, and past mental health treatment experience were not associated with MHHS intentions. This study however found a significant effect of living arrangement on MHHS intentions. It is possible that within this sample, these variables did not play a major role in MHHS intentions. All of the participants in this sample were students taking psychology courses and therefore may have more homogenous perspectives on MHHS than other groups due to self-selection biases. Self-selection bias is a phenomenon that involves participants volitionally joining a group based on certain characteristics (Heckman, 1979). Thus, if a research sample is randomly selected from a self-selected group, a biased sample may be

drawn with non-representative characteristics. Prior research has shown that self-selection biases are present in a variety of forms of research including online surveys (Hudson, Seah, Hite, & Haab, 2004). Thus, self-selection bias may have attenuated the effect of demographics variables on MHHS by decreasing the variability in demographics characteristics.

In considering the lack of relationship between race, gender, and MHHS intentions, this study had a relatively racially diverse sample, but the majority of participants were female (86. 3%). Prior research suggests that the relationship between race and MHHS may be moderated by gender. Specifically, African American males have been found to be less open to counseling than African American females. However, the opposite pattern is seen for Latinos (Chiang, Hunter, & Yeh, 2004). Consequently, the limited variability of racial groups by gender may have made it difficult to detect race and gender effects on MHHS.

The effects of demographics factors, such as sexual orientation, living arrangement, year-in-college and age were also not found in this study. The majority of participants were 21 years old or younger (79%), exclusively heterosexual (> 80%) and lived off-campus (> 70%). Thus, limited variability in these variables may have made it difficult to detect these effects. Prior research suggests that individuals who are older (> = 22) are more likely to seek mental health treatment (Golberstein et al., 2008; Mackenzie et al., 2006). As the majority of participants were younger than 22, it is unsurprising that effects associated with the later years of emerging adulthood would not be found.

In considering the lack of finding for sexual orientation, prior research has found that individuals who identified with LGB status endorse higher MHHS (Eisenberg et al., 2007). Compared with other studies, the current study had a relatively lower percentage of participants endorsing exclusive heterosexuality but a relatively similar percentage endorsing exclusive homosexuality (Ellis, Robb, & Burke, 2005). It is possible that sexual orientation does not influence MHHS within this sample. LGBTQ individuals have been found to have high rates of mental health issues associated with experiences of stigma and victimization (Herek & Garnets, 2007). Stigma and victimization associated with sexual orientation were not measured in this study. Thus, it is uncertain whether a relationship with MHHS was not found due to the presence of an accepting and supportive campus environment for LGBTQ individuals. It is also possible that differences in measurement may have influenced results. Prior studies have found that different measures of sexual orientation (e.g. attraction versus behavior) may yield different prevalence rates (Ellis et al., 2005). Past research showing a relationship between MHHS and sexual orientation used a categorical measure as opposed to the dimensional measure used in this study (Eisenberg et al., 2007). Consequently, the data from this study may have allowed individuals to rate their sexuality in a dimensional manner that would have been categorized as a discrete sexual orientation in other studies.

Finally, living arrangement (i.e. on-campus or off-campus) had a negative association with MHHS across models. Thus, participants who lived off-campus reported lower MHHS intentions. This replicated past research suggested on-campus living may be associated with greater knowledge and use of university mental health services (Yorgason et al., 2008). It is possible that a supportive campus culture and

easier access to services may have been associated with higher MHHS intentions for on-campus dwellers.

Limitations

Although this research study was an initial step towards exploring the association between perceived campus culture, personal perspectives, and MHHS intentions, there are additional limitations to the current research to be considered outside of those limitations formerly discussed (e.g. limited variability, measurement error). Several limitations involving the methodology and overall design of the project were present and warrant further explanation. An understanding of these limitations may help to direct improvements for future research evaluating these relationships.

To begin, all constructs of interest were measured using self-report instruments. Self-report instruments are sensitive to distortion by social desirability. Thus, findings may be skewed, as participants may have responded in a way that they considered more socially acceptable than their actual beliefs. For example, participants may have rated their self-perspectives more positively and perceived campus culture more negatively to portray themselves in a more socially desirable way. This may be reflected in the significant differences that were found between rated perspectives. Specifically, peer, student body, and faculty/administrative perspectives were generally perceived as significantly more negative towards mental health issues than their own personal perspectives. This may also be reflected in their ratings of more positive personal attitudes towards mental health treatment than has been found previously. In addition, this sample showed more positive intentions towards seeking mental health treatment than prior research which may potentially be another marker of social desirability. It is

also possible that the current study's sample was drawn from a local population with more positive mental health attitudes and beliefs than prior studies, as perceived attitudes and beliefs with mental health have previously been associated with personal beliefs (Vogel et al., 2013).

Although social desirability may have played a role in participant response patterns, efforts were made in concordance with other studies to minimize such influences. Participants were administered the survey in an anonymous manner, online without explicit, active monitoring by researchers. In addition, consent forms and other study materials did not contain information on the hypotheses of the study, so that participants would have difficulty inferring the researcher's interests and intentions. Consequently, appropriate precautions were taken to limit the influence of social desirability. Although self-report methodologies have certain limitations, such methods are often necessary when measuring constructs focused on a participant's personal experience and perception, such as in the case of describing perceived campus attitudes, barriers, and stigma.

Another limitation of the current study was the issue of shared method variance. Shared method variance is the concept that certain measured constructs may be associated simply as a function of having a common measurement method such as self-report. Thus, it can be difficult to disentangle whether an effect is due to unique variance explained by a given construct versus the measurement method used. For example, relationships found in this study between campus attitudes, personal attitudes, and MHHS may have been an artifact of similarities in measurement method as opposed to a true association. However, prior literature suggests that the effect of shared method variance

remains controversial. Previous research has not been able to establish clear guidelines on the magnitude of the effect of shared method variance on statistical testing. Thus, careful statistical interpretation is suggested when a shared method is used across variables of interest. Specifically, small correlations across variables with a shared method should be interpreted cautiously. On the other hand, larger associations may represent some shared method variance but also some true association between constructs. This is especially important in research on challenging to access internal topics as just assuming any effect is shared method variance would eliminate the ability to understand the relationships between internal phenomena. Considering the potential limitations in making conclusions involving constructs that have shared method variance, future research may wish to introduce multiple measurement methods to limit spurious associations (Spector, 2006). However, introduction of other methods of measurement, such as observational coding and objective performance on experimental tasks, may not always be feasible due to increased investment necessary to ensure reliability and validity. While behavioral measures exist for assessing attitudes and beliefs, such as implicit association tasks, prior studies have focused on using such measures for decreasing self-report bias and social desirability for personal perspectives and have not thoroughly explored perceived group perspectives (Nosek, Greenwald, & Banaji, 2005).

In considering observational coding and related measures, prior research has found that objective measures of culture and climate variables, such as voting records or class composition, are predictive of mental health outcomes and behaviors (Hatzenbuehler, 2011; Hatzenbuehler, McLaughlin, Keyes, & Hasin, 2010; Vervoort, Scholte, & Overbeek, 2010). However, these objective ratings have focused on coding

existing information about the environment that act as proxies for stigma and other mental health barriers. This information is generally available at the county, state, and class level. However, for the purposes of exploring campus culture variables, such measures may be appropriate for between-campus comparison but would have conceptual and methodological barriers for understanding social or geographical clusters within campus. Data gathered on mental health issues at the state or county level would not be able to capture differences between colleges in the same state or county.

When considering classroom-level differences, college students tend to have larger class sizes and less frequency than those in high school settings and often have classes in a wide variety of departments. Thus, classroom-level variables may have less influence on college students' behavior. In addition, past studies looking at class-level objective measures have focused on issues such as racial/ethnic class composition which can be readily measured (Vervoort et al., 2010). Objective behaviors involving mental health treatment may be more difficult to measure, as individuals may be unlikely to discuss such issues in class. Prior research suggests that issues associated with stigma involving mental health treatment are some of the most frequently endorsed reasons to not seek treatment (Clement et al., 2012). As it seems unlikely that mental health issues would be discussed frequently in class, it would be difficult to measure frequency of mental health topics and stigmatizing comments in class.

Another limitation to consider is the overall reliability and validity of the measures in this study. Due to the lack of existing measures evaluating the campus culture variables involving mental health, it was necessary to develop measures specific to the conceptual framework of this study. Despite this, overall, the measures adapted for

different perceived campus variables displayed strong internal consistency and face validity. In addition, the adapted measures were created from measures that have been shown in prior studies to have reliability and validity. One limitation present in both past research and the current study is that invariance of factor structure across different samples has not been evaluated which allows for the possibility that measures may have functioned differently between certain demographic groups. As this was not the main goal of this study, the study was underpowered to evaluate the presence of invariance based upon demographic and other variables.

Another limitation of this project was that it utilized a cross-sectional, correlational design. This design prevents the inferring of directionality or conclusive support for mediation analysis results due to concurrent measurement of mediators and outcome variables. Also, the correlational nature of the design prevents causal inferences concerning data relationships.

One additional limitation is that the study utilized online data collection. Without study personnel present, it was not possible to ensure that participants were fully paying attention while completing the measures and not multitasking. Consistent with this possibility, data screening showed that approximately 22% of the sample failed to meet criteria for valid responses on the survey (e.g., amount of time spent on survey, passing validity questions). While the presence of study personnel may help to increase data quality, such procedures would raise critical challenges to the validity of the study due to the increased risk for the influence of social desirability and demand characteristics. The data available from those who were excluded suggested potentially different response patterns, so that these participants may have been qualitatively different from those who

completed the study. It is also possible that these participants failed to focus on the survey which led to invalid responses.

Finally, participants were sampled from a select portion of a university's student body recruited through SONA. Thus, all eligible participants had to be enrolled in psychology courses. Therefore, results from this study have limited external validity and may not be generalized to individuals taking other courses or those participating in different social groups. Due to the nature of campus culture, significant variations may occur depending on the sample and findings may have limited applicability to other campuses.   Future research is needed to determine if student views of campus culture vary based on area of study and campus.

Summary and Future Directions

Overall, there were several unique features of this study which have excellent potential to inform future research. Notably, this study was the first exploration of perceived campus culture perspectives on variables associated with mental health treatment. Although the importance of campus culture on mental health issues has been consistently mentioned as an area to consider for intervention, there has been a lack of guidance regarding the nature of campus culture and associated constructs of interest to target. The findings from this study may present some initial evidence to guide the development of targeted campus culture interventions with the goal of increasing MHHS, particularly by encouraging a focus on addressing perceived campus attitudes and barriers given their potential role in influencing personal attitudes and perceptions of barriers and help seeking. Further, the use of previously validated measures related to constructs in the empirically supported, theoretical framework of the Theory of Planned

Behavior, opens up a new area of exploration for research on college mental health service utilization and demonstrates that utilizing the Theory of Planned Behavior does not always require completely designing new instruments for every construct.

In addition, it is noteworthy that participants seemed able to differentiate between different perceived campus perspectives in a reliable manner.   Thus, this method of soliciting perceived perspectives may be considered for further exploration as well as application to other constructs of interest related to college health. For example, this framework may be used to evaluate perceived campus culture in relation to other behaviors related to student well-being such as procrastination, health center use, and STD testing.

In considering the study's main findings, there was initial support for mediation relationships among perceived campus culture variables, personal perspectives, and MHHS intentions. These results suggest that campus variables may influence help seeking first by influencing personal variables such as personal attitudes and personal perceptions of barriers to help seeking. Thus, this study provided initial support for prospective mechanisms involved in MHHS among college students. Future studies should build on this work to explore and expand upon other mechanisms that may be involved in the relationship between perceived campus culture and MHHS intentions.

Future studies also need to consider utilizing multiple methods of measuring campus culture to better describe this construct as it is known that different perspectives provide a richer view of all the contexts where a construct might occur. Utilizing multiple methods of measurement may also help to limit the influence of shared method variance and social desirability. Surveying specific groups of a campus (e.g.

administrators, health professionals) remains necessary to ascertain their influence on student-perceived campus culture and how well student perceptions of campus beliefs correspond with the beliefs of various campus groups. In considering alternative methods of measurement, objective measures based on recordings of campus events, e-mails, mental health treatment appointments, and other campus interactions involving mental health treatment and/or experience-based sampling methods may help to provide a more comprehensive, ecologically sound measurement of campus culture variables. In addition, use of implicit measures of mental health treatment beliefs, such as implicit association tests, may help to circumvent issues involving self-report/social desirability bias.

In order to obtain more comprehensive and accurate perspectives of a participant's interactions on-campus, peer nomination and social networks analysis methodologies may facilitate more complex understandings of campus culture. For example, using social networks methodologies can help to map the flow of peer influence across different groups. Through understanding these patterns of interaction, it may be possible to identify key groups to target for maximum dissemination of mental health resources information on-campus. Prior to further implementing systems of campus culture measurement, qualitative research, such as focus groups and interviews, are necessary to ensure appropriate sensitivity to student values, beliefs, and concerns. By using more ecologically valid, culturally sensitive, and objective measures, it may become easier to disentangle the relationships between perceived versus actual campus culture and self-perceived attitudes relative to MHHS beliefs and actions.

While improvements in measurement may help to improve validity and accuracy in measurement of campus culture, additional changes in study design will be necessary to evaluate directionality and causality comprehensively. In addition, there remain many unexplored variables that may be implicated in MHHS. Mental health literacy, reasons for MHHS, and treatment expectations remain necessary areas to consider. The role of informal sources of support and their associated attitudes, barriers, and stigma may play a role in driving the need to seek help but remain unexplored. Identifying relationships with such gaps may help to identify important constructs for larger scale studies. One potential innovation for larger scale studies would be the use of longitudinal approaches with larger samples utilizing frequent collection of predictors, mediators, and dependent variables to help establish directionality of effect and provide more conclusive evidence for mediation relationships. To maximize ability to understand the effect of campus culture on personal beliefs, measuring mental health values, beliefs, and behaviors prior to starting college is necessary to identify changes associated with campus culture. Without these additional time points, it would not be possible to determine whether changes in beliefs necessarily coincide with changes in culture.

In addition, larger, more diverse samples utilizing students studying vastly different topics (besides Psychology) is needed for exploration of participant characteristics which moderate relationships between campus culture, personal perspectives, and MHHS. Inclusion of participants from a range of age groups may also help to identify variables important to the development of mental health attitudes, beliefs, and service utilization. For example, a poor treatment experience at a younger age where the youth has not yet fully developed abstract thinking skills may result in more negative

attitudes and beliefs towards MHHS but does not account for potential growth in these skills. This information may help to inform future experimental research designs as well for evaluating interventions targeted at influencing campus culture to promote mental health awareness and MHHS. Ultimately, such research may help to increase service utilization which is a necessary first step to decreasing deleterious mental health outcomes and promoting academic and social functioning for positive future trajectories throughout and following emerging adulthood.

Tables and Figures

Table 1
Sample Demographics: Age and
Sexual Orientation

Variable	Mean	SD	Skewness	Kurtosis
Age	20.24	1.756	-2.18	2.78
Sexual Orientation	1.4322	1.16088	3.406	11.83

Table 2
Sample Demographics: Additional Variables

Variable	N (%)
Gender	183 (Female; 86.3%)
Race	
Caucasian	122 (57.5%)
African American/Black	12 (5.7%)
Asian	18 (8.5%)
Hispanic/Latino	38 (17.9%)
Arabic/Middle Eastern	5 (2.4%)
Bi/MultiRacial	16 (7.5%)
Other	1 (.5%)
Mental Health Treatment History	
Personal MH Treatment History	55 (Yes; 25.9%)
Family MH Treatment History	94 (Yes; 44.3%)

Table 3

College Characteristics

Year in College	N (%)
Year 1	53 (25%)
Year 2	54 (25.5%)
Year 3	56 (26.4%)
Year 4	32 (15.1%)
Year 5	11 (5.2%)
Year 6 or more	4 (1.9%)

Living Arrangement	
Off-campus	148 (70.5%)
On-Campus	62 (29.5%)

Table 4

Validity Measures

Measure	N	M	SD	Min	Max
Validity Total Score	261	0.84	0.21	0.2	1
Time Spent on Survey	275	58.03	266.1	0.78	4073.88

Table 5

Descriptive Statistics for Independent and Dependent Variables

Variable	N	Mean	SD	Min	Max	Skewness	Kurtosis	Cronbach's Alpha
Personal Stigma	212	2.69	0.97	1.00	5.73	0.45	-0.14	0.87
Social Group Stigma	212	3.16	1.12	1.00	7.00	0.23	0.19	0.93
Student Body Stigma	212	3.88	1.09	1.00	6.67	-0.37	0.14	0.93
Faculty/Admin Stigma	212	3.30	1.12	1.00	6.25	-0.06	-0.46	0.93
Campus Stigma Composite	212	3.44	0.94	1.00	6.08	-0.25	0.02	0.96
Personal Attitudes	212	4.59	0.89	1.90	6.80	-0.22	-0.10	0.72
Social Group Attitudes	212	3.95	0.91	1.00	6.40	-0.21	0.97	0.84
Student Body Attitudes	212	3.87	0.85	1.20	7.00	0.04	1.47	0.84
Faculty/Admin Attitudes	212	4.51	0.79	2.00	6.90	0.34	0.40	0.80
Campus Attitudes Composite	212	4.11	0.64	1.80	6.60	0.31	1.70	0.88
Personal Barriers	212	4.02	1.19	1.00	6.70	-0.36	0.00	0.90
Social Group Barriers	212	4.62	1.12	1.00	7.00	-0.31	0.55	0.93
Student Body Barriers	212	4.79	0.99	1.00	7.00	0.01	0.43	0.93
Faculty/Admin Barriers	212	4.83	1.02	1.80	7.00	0.10	-0.22	0.93
Campus Barriers Composite	212	4.74	0.90	2.00	7.00	0.02	0.05	0.96
Campus Belonging	210	5.18	1.59	1.00	7.00	-0.71	-0.48	0.93
MHHS Intentions	212	3.59	1.32	1.00	7.00	-0.01	-0.51	0.78
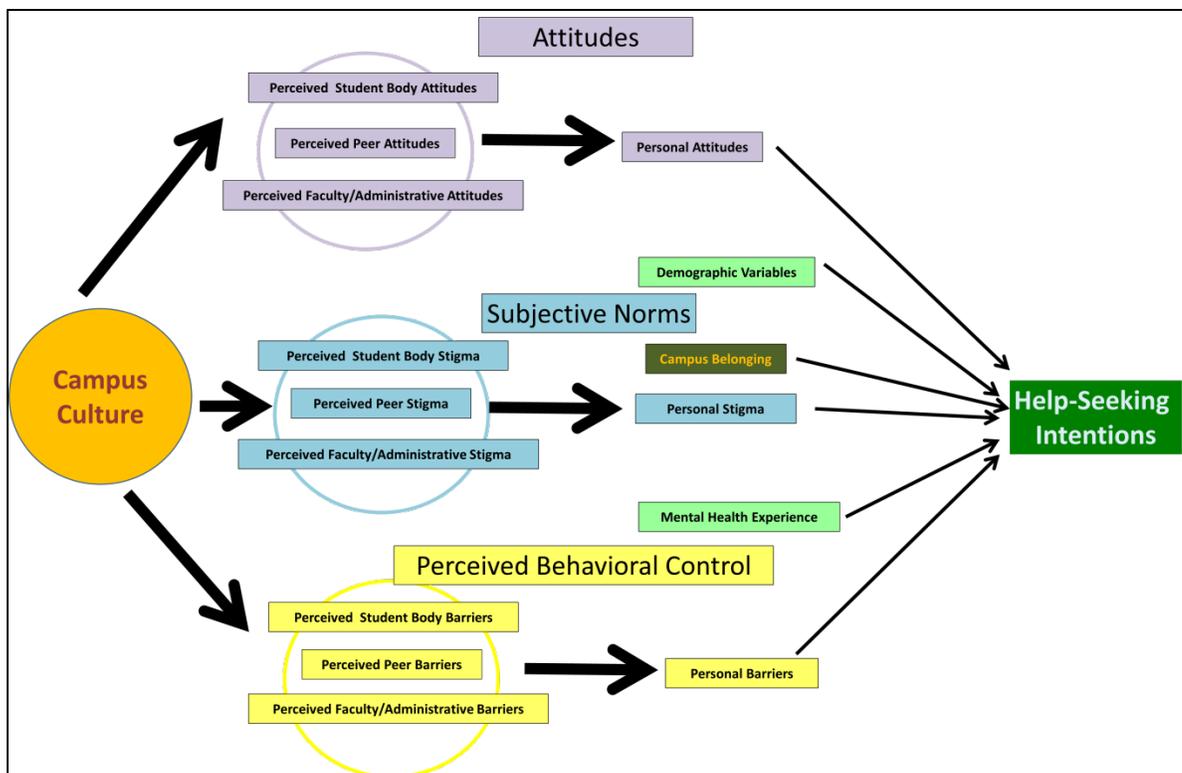
Figure 1. Conceptual model. This figure describes the relationship between campus culture, TPB constructs, and MHHS.
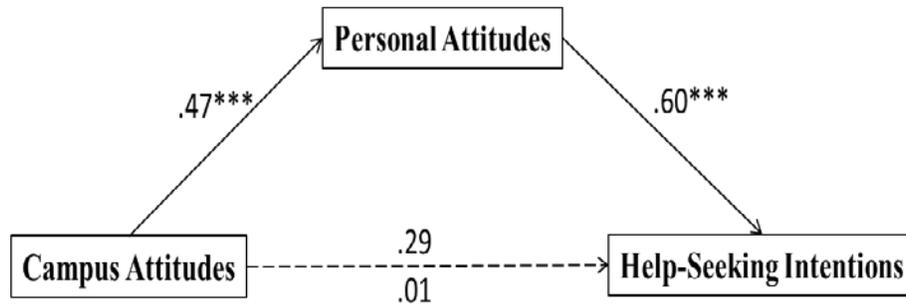
p < .05, **p < .01, ***p < .001

Figure 2. Campus attitudes mediation model. This figure illustrates significance levels and beta coefficients for the C, A, B, and C' paths of this model.
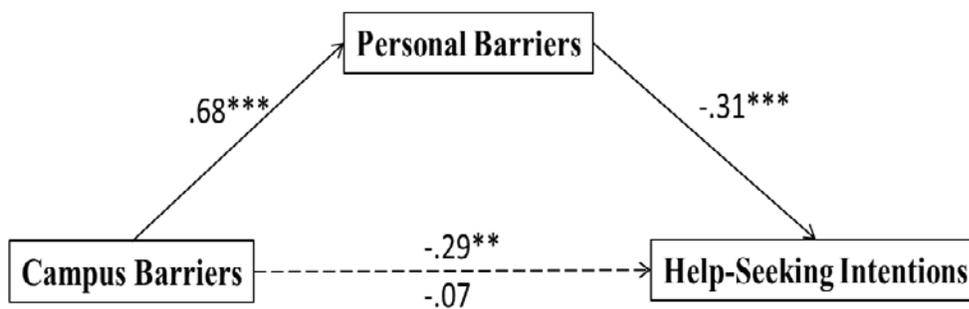
*p < .05, **p < .01, ***p < .001*

Figure 3. Campus barriers mediation model. This figure illustrates significance levels and beta coefficients for the C, A, B, and C' paths of this model.
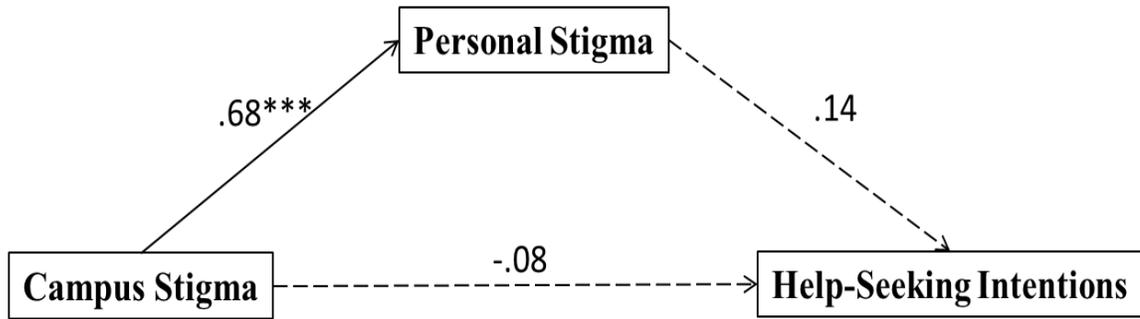
Figure 4. Campus stigma mediation model. This figure illustrates significance levels and beta coefficients for the C, A, and B paths of this model.

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