

Running header: EFFECT OF STIGMA ON HELP-SEEKING AND BELIEFS

THE EFFECT OF SELF-STIGMA ON MENTAL HEALTH HELP-SEEKING AND
THE MEDIATING ROLE OF HEALTH BELIEFS

A DISSERTATION

SUBMITTED TO THE GRADUATE SCHOOL

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE

DOCTOR OF PHILOSOPHY

BY

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When I came to Ball State University for undergraduate study in 2008, I started an incredible process that led me to where I am now. This undertaking involved sacrifices and challenges that I never could have anticipated, and none of it would have been possible without the caring support of so many mentors, colleagues, and loved ones. As this chapter in my life is coming to an end, there are more people that deserve my gratitude than I can enumerate, but I want to take a moment to recognize a few individuals who stand out.

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ABSTRACT

DISSERTATION: The Effect of Self-Stigma on Mental Health Help-Seeking and the Mediating Role of Health Beliefs.

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Mental health stigma is a widespread deterrent of decisions to seek treatment for mental illness, yet little is known about how its discouraging effects compare to other treatment obstacles (e.g., external barriers) or its relationship with other mental health-related beliefs and attitudes. The current study used a predictive model of health behavior, known as the Health Belief Model (HBM), to test the relationship between internalized stigma and psychological help-seeking intentions. Self-report measures of internalized stigma, counseling experience, help-seeking intentions, and HBM components (i.e., perceived severity of mental illness, self-efficacy for help-seeking, perceived external barriers, and perceived benefits) were completed by 465 U.S. adults. Of the three models compared, the model specifying a partially mediated relationship between internalized stigma and help-seeking intentions via the HBM components was the best fit. Counseling history and all HBM components except perceived severity were significantly related to help-seeking intentions. The researcher concluded the relationship between internalized stigma and help-seeking intentions is partially explained by beliefs about the availability and personal benefit of help-seeking.

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The Effect of Self-Stigma on Mental Health Help-Seeking and the Mediating Role of Health Beliefs

A significant discrepancy exists between the widespread prevalence of mental illness and low rates of mental health help-seeking. Although many systematic help-seeking barriers (e.g., lack of insurance) can explain low rates of help-seeking, researchers have also identified major attitudinal and social deterrents, such as negative beliefs and stereotypes (Clement et al., 2015). Of these latter barriers, stigmatizing beliefs about mental illness have been thoroughly studied for their role in discouraging help-seeking behavior. The deterring effect of stigma on mental health help-seeking has been well-established, but additional research is needed to understand whether or to what extent stigma influences help-seeking behavior by skewing individual beliefs about mental illness and mental health, such as the perceived benefits or accessibility of treatment. The current study aims to address this question by employing the Health Belief Model (HBM) to determine the extent that mental health-related beliefs mediate the relationship between internalized mental illness stigma and psychological help-seeking intentions.

Mental Health Help Seeking

Regarding physical illnesses, the prudence of early detection, prevention, and timely treatment is generally acknowledged and accepted (Jorm et al., 2000). For example, people are generally aware of the common signs of certain types of cancers, the importance of vaccines for protecting against various diseases, how to identify symptoms related to cardiovascular disease (e.g., heart attacks, strokes), as well as basic steps to manage these problems (e.g., emergency room, cardiopulmonary resuscitation). Concerning the treatment of physical disease, many people know about various means to acquire professional medical assistance (e.g., primary care, urgent care, emergency room), the types of treatments that might be administered, and the likely

outcomes of those treatments. This knowledge and associated health-related behavior promotes positive public attitudes about and support for services to address medical problems.

Unfortunately, these examples of common knowledge, attitudes, and help-seeking behavior do not generalize equally well to mental health problems (Mitchell & Selmes, 2007). Current rates of mental illness are a major problem in the U.S., one that continued to earn increased attention from researchers and laypersons (Schomerus et al., 2012). According to a meta-analysis of population-based studies, psychiatric disorders affect about 17% of people in the U.S. annually (i.e., over 55 million) and 30% over the course of a lifetime (Steel et al., 2015). Most affected people are unlikely to participate in appropriate treatment services (Clement et al., 2015), which exacerbates the pre-existing personal and public health problems related to mental illness, such as delayed treatment, increased severity of distress, and higher rates of disability from mental health issues (Boonstra et al., 2012).

Despite the prevalence of mental illness, 52% to 74% of people with a mental illness in the U.S. do not receive help (Clement et al., 2015). This range encompasses a variety of psychiatric disorders, such as depressive disorders, anxiety, and psychosis, but these estimates are somewhat lower for certain populations, including certain ethnic minorities, youth, men, military service members, health professionals (Clement et al., 2015), sexual minorities (Buchmueller & Carpenter, 2010), and individuals living in rural communities (Hoyt, Conger, Valde, & Weihs, 1997).

In situations where mental health treatment services are delayed or neglected altogether, multiple problems can occur. One of the most common consequences is worse outcomes (e.g., greater distress/dysfunction long-term) for mentally ill individuals, even if they decide to seek help at a later point (Dell'Osso, Glick, Baldwin, & Altamura, 2013; Boonstra et al., 2012).

Researchers have identified associations between delayed help-seeking and multiple negative outcomes, including greater severity of symptoms at intake, decreased responses to treatment, increased drop-out rates, and an increased risk of death from suicide (Reynders, Kerkhof, Molenberghs, & Van Audenhove, 2014).

The Health Belief Model

The HBM is the theoretical basis of the current study (Hochbaum, Rosenstock, & Kegels, 1952). It is a predictive model concerning the initiation and maintenance of health-related behaviors (Hochbaum, Rosenstock, & Kegels, 1952). While other theories, like the Theory of Planned Behavior (Ajzen, 1985), are useful for predicting a wide variety of intentional behaviors, the HBM is focused specifically on health-related beliefs. It has four components, including perceived severity of a specific health problem as well as perceived barriers, self-efficacy, and perceived benefits related to participation in a health-promoting behavior (Carpenter, 2010).

Perceived severity. The HBM perceived severity component indicates participation in health behavior will vary as a function of individual perceptions about negative experiences and outcomes of a particular illness (Carpenter, 2010). That is, the perception that a specific illness is associated with severe distress and/or dysfunction will increase the likelihood of relevant health-promoting behavior compared to milder problems. It is reasoned that individuals who perceive an illness as mild are more willing to endure or manage it on their own, while serious problems are more likely to require professional assistance. This HBM component is consistently the smallest predictor of physical health behavior (Carpenter, 2010; Orji et al., 2012) as well as psychological help-seeking intentions ($r = .32$; Kim & Zane, 2016).

Perceived barriers. The HBM claims individuals will be less likely to adopt a healthy behavior when they perceive significant barriers related to that behavior (Carpenter, 2010). An

individual may perceive the respective behavior as too time-consuming, costly, or embarrassing. In the case of psychological help-seeking, common perceived barriers include fear of discrimination, lack of insurance, or limitations related to availability of services. Researchers have shown effects of perceived barriers on various health behaviors ranging from small ($r = -.21$) to moderate ($r = -.42$; Carpenter, 2010; Orji et al., 2012). Similar effect sizes have been found for psychological help-seeking intentions ($r = -.21$ to $-.39$; O'Connor et al. 2014; Langley et al. 2018; Kim & Zane, 2016; Yap et al., 2011). Additionally, a quasi-experimental study found that high school students who participated in an educational intervention about pathways to care and the process of therapy showed a significant decrease in perceived barriers (e.g., time, transportation) compared to a control group (Wilson et al., 2008). Students in the intervention group showed a corresponding increase in help-seeking intention compared to students who did not participate in the intervention.

Self-Efficacy. The self-efficacy component refers to an individual's beliefs about their ability to effectively perform a behavior. Self-efficacy has been shown to be one the strongest HBM predictors of physical health help-seeking behavior ($\beta = .40$; Orji et al., 2012). Regarding mental health, limited evidence has suggested small to moderate effect sizes of self-efficacy and help-seeking intentions among children and adolescents, with larger effects observed among older youth ($\beta = .22$ to $.55$; Garland & Zigler, 1994). Among adult populations, at least one study noted a moderate effect between mental health stereotype awareness and general self-efficacy (i.e., self-beliefs related to general aptitude, functioning, or coping abilities; Corrigan, 2004), but no significant effects have been observed between self-efficacy and mental health help-seeking intentions (Langley et al. 2018).

Perceived benefits. The HBM benefits component maintains people need to perceive participation in a health behavior as having positive advantages (Carpenter, 2010). Individuals will be more likely to engage in a health behavior if they believe doing so has significant, personal benefits. For example, if a depressed individual does not believe talking to a therapist will alleviate depressive symptoms, then they will be less likely to pursue that form of treatment. Researchers have estimated small effects ($r = .08$ to $.13$) in the relationship between perceived benefits and a variety of health behaviors, such as smoking cessation and dieting (Carpenter, 2010; Orji et al., 2012). However, larger estimates have been found in studies of psychological help-seeking intentions ($r = .36$ to $.70$; Niegocki, & Ægisdóttir, 2019; Ægisdóttir & Einarsdóttir, 2012; Ægisdóttir & Gerstein, 2009; Ægisdóttir, O'Heron, Hartong, Haynes, & Linville, 2011).

Summary of HBM Research

The HBM is a relatively popular model used to guide health research. Most studies that use the HBM have focused on behaviors promoting physical health, with limited studies related to mental health (O'Connor et al. 2014; Langley et al. 2018; Kim & Zane, 2016). Therefore, it will be necessary to rely on the major findings for HBM studies of physical health behavior to understand and clarify the limited findings involving mental health.

One noteworthy characteristic of the HBM has been the interactive nature of its components and supporting variables (e.g., time, setting) when used to predict health-related behavior. For example, Carpenter (2010) conducted a meta-analysis of 19 longitudinal studies and found some HBM components varied in their ability to predict physical health-related behaviors depending on the type of health behavior (i.e., treatment versus prevention behavior) and the time between measures of HBM components and behaviors. Other interactions were identified by Orji, Vassileva, and Mandryk (2012) via their study of healthy eating behavior.

Researchers found interactions between several HBM components in their effects on healthy eating behavior, including a mediating effect of perceived barriers on perceived benefits and self-efficacy.

These findings support the importance of considering possible rules of combination for HBM variables used to predict physical health-related behavior. However, little research has been conducted that uses the HBM to predict mental health-related behaviors, especially psychological help-seeking behavior or intentions. A limited number of correlational studies have provided initial support the association between certain components of the HBM components and help seeking intentions (see “Health Belief Model” section above). Several of these studies have noteworthy limitations. The most prominent limitation is perhaps issues with multicollinearity between the measures of perceived benefits of help-seeking and help-seeking intentions. In two of these studies (O’Connor et al. 2014; Langley et al. 2018), the Attitudes Toward Seeking Professional Psychological Help (ATSPPH) was used as a measure of perceived benefits of help-seeking. The ATSPPH was originally developed as a measure of psychological help-seeking intentions (Fischer & Turner, 1970) and is commonly used for that purpose (Ramos-Sánchez & Atkinson, 2009). This consideration suggests multicollinearity in the relationships reported for the ATSPPH with measures of help-seeking intentions in those studies, which may explain the large effect sizes (e.g., $r = .70$).

Additionally, other problems were noted with the self-efficacy measures. Studies of psychological help-seeking intentions relied mainly on measures of general self-efficacy (i.e., the General Self-Efficacy Scale), while studies of physical health behavior tended to use self-efficacy scales specific to the behavior being studied (e.g., dieting self-efficacy, safe-sex self-efficacy; Orji et al., 2012; Ashoori et al., 2020). Use of a specific self-efficacy measure may

explain the difference in findings for self-efficacy when comparing HBM studies of physical health and mental health studies. Additionally, using a specific self-efficacy measures for health-promoting behavior or intentions has an advantage over general self-efficacy measures because they are more consistent with the theoretical basis of self-efficacy in the HBM. The rationale for including self-efficacy in the HBM is linked to the expectation that participation in a particular health-promoting behavior will vary as a function of an individual's perception of their ability to perform that behavior. That is, people are more likely to participate in a specific behavior when they are confident in their ability to perform that behavior and are less likely when their confidence is low. Therefore, specific self-efficacy measures are more consistent with this rationale because they target specific behaviors.

Mental Health Stigma

Mental health stigma is arguably the most pernicious deterrent of psychological help-seeking. It can be defined as “a process involving labelling, separation, stereotype awareness, stereotype endorsement, prejudice, and discrimination in a context in which social, economic, or political power is exercised to the detriment of members of a social group” (Clement et al., 2015, p. 3). Stigma involves processes of prejudice and discrimination related to mental illness or mental health help-seeking. The term self-stigma refers to the internalization or self-attribution of these prejudices and other negative beliefs. Self-stigma is associated with decreased self-efficacy/esteem, lower recovery orientation, elevated severity of psychiatric symptoms (Drapalski et al., 2013), increased perceptions of mental illness severity (Livingston and Boyd, 2010), poorer attitudes toward counseling services, and decreased willingness to seek psychological help (Vogel et al., 2007). Self-stigma plays a major role in deterring help-seeking behavior because it directly affects individuals experiencing mental illness.

Although the negative influence of self-stigma on help-seeking intentions and behavior has been consistently supported, little is known about whether or to what extent its effect is conveyed indirectly through mental-health related beliefs, such as the perceived benefits and obstacles of psychological help-seeking. Research is needed to further understand the role of health-related beliefs in the relationship between self-stigma and psychological help-seeking intentions. A more advanced understanding of this relationship may provide clues for subsequent research and institutions with an interest in stigma prevention and intervention.

Present Study

The HBM is one possible tool for gaining further insights into the problem of infrequent psychological help-seeking (Hochbaum et al., 1952). The current study has two purposes: 1) to address limitations in prior help-seeking research related to issues with the validity of measures used for HBM components and multicollinearity issues and 2) to expand the psychological help-seeking literature by testing whether the relationship between self-stigma and help seeking intentions is mediated by beliefs about mental illness and mental health services. There are no examples of this mediated relationship in prior research. However, direct relationships have been consistently supported between self-stigma and HBM components, self-stigma and help-seeking intentions, as well as HBM components and help-seeking intentions. Compared to self-stigma, the same patterns of relationships have been supported for prior counseling experience. These patterns of direct relationships may inhere an underlying mediational relationship.

The current study addresses the question of mediation and prior limitations of HBM studies of psychological help-seeking intentions by using the HBM and prior counseling experience to predict psychological help seeking intentions. The study has two purposes: 1) to test the utility of certain HBM components for predicting intentions to seek psychological help

and 2) to examine whether the relationship of self-stigma and help-seeking intentions is mediated by any HBM components. Three models were constructed to examine the relationship between prior help seeking, stigma and help-seeking intentions: partially mediated relationship via health beliefs (i.e., perceived severity, perceived barriers, self-efficacy, and perceived benefits), fully mediated relationship via health beliefs, and an unmediated model. These models are illustrated in Figures 1-3 below and in Appendix B. The partially mediated model is expected to be the best fit because it is the only model where all of the direct relationships between variables have received support from prior research.

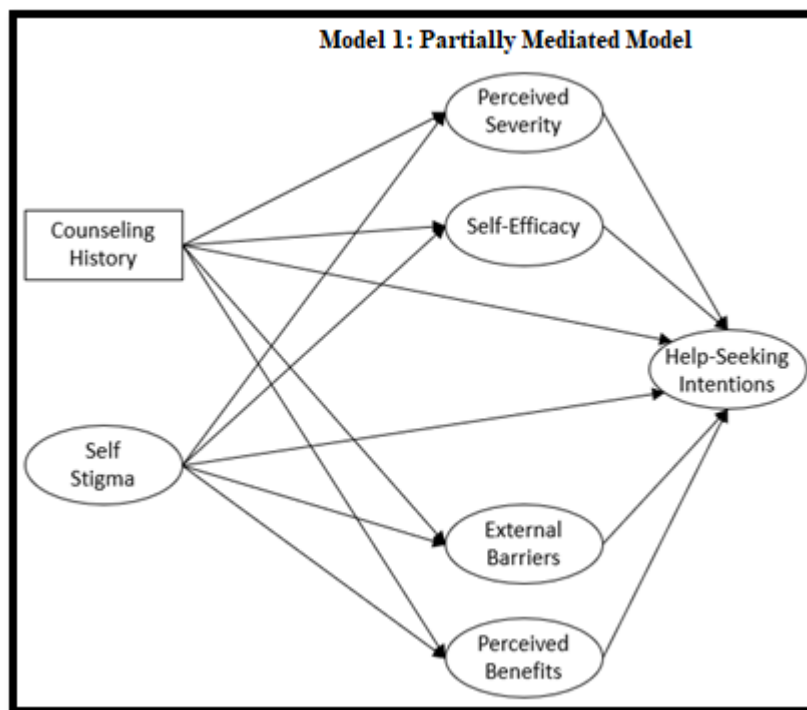


Figure 1. Partially model (Model 1).

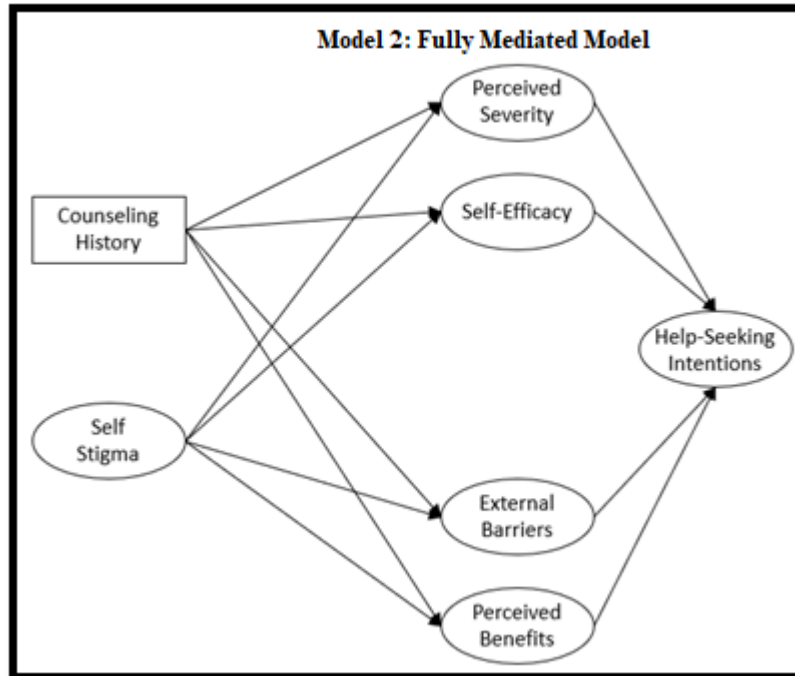


Figure 2. Fully mediated model (Model 2).

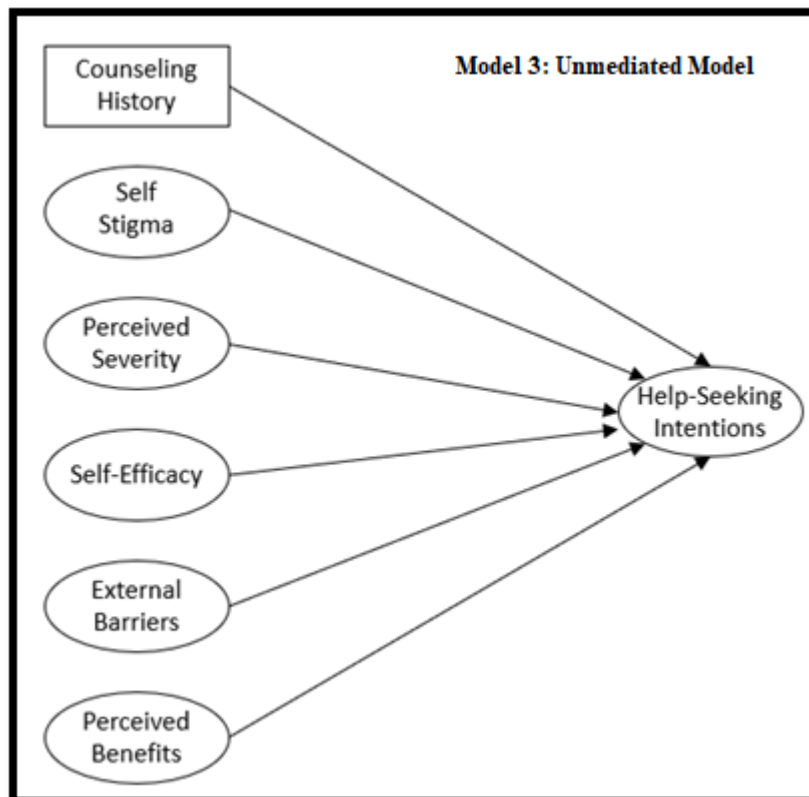


Figure 3. Unmediated model (Model 3).

The long-term aim and importance of understanding these relationships is tied to the potential benefits of canvassing the relationships between certain health beliefs and help-seeking behavior, such that outreach programs and other interventions with an interest in promoting psychological help-seeking can effectively target specific beliefs, or patterns of beliefs, to more effectively encourage mental health help-seeking behavior when it is needed.

Hypotheses

1. The partially mediated model will demonstrate a better fit to the data than the fully mediated and unmediated model.
2. Perceived severity, self-efficacy, and perceived benefits will be positively related to help-seeking intentions.
3. Perceived external barriers will be negatively related to help-seeking intentions.
4. Stigma will demonstrate a direct relationship with help-seeking intentions.
5. Prior counseling experience will demonstrate a direct, positive relationship with help-seeking intentions.
6. Self-stigma will demonstrate an indirect relationship with help-seeking intentions via perceived severity (positive), perceived external barriers (positive), self-efficacy (negative), and perceived benefits (negative).
7. Prior counseling will demonstrate an indirect relationship with help-seeking intentions via perceived severity (negative), perceived external barriers (negative), self-efficacy (positive), and perceived benefits (positive).

Method

Participants

Participants were recruited via convenience sampling using Amazon Mechanical Turk (M-Turk), social media, and a subject pool. The latter consisted of counseling psychology undergraduate students at Ball State University. The sample consisted of individuals residing in the U.S. of ages 18 and older. No other demographic restrictions were used. Participants were excluded if careless responding was indicated by their responses on any of the bogus items (see “Measures” section below) or if their total time completing the survey was less than three minutes. The initial sample included 483 individuals. Eleven were excluded due to careless responding and two for completing the survey in less than three minutes, leaving a final sample of 465 (24.1% male, 73.7% female, 2.2% other). Respondents who indicated their gender as “other” identified as either gender queer, non-binary, or agender. Those who indicated their race as “other” identified as either biracial or multiracial. Regarding survey access, 61 participants took the survey via M-Turk, 333 through the subject pool, and 71 via social media. Two hundred sixty-two respondents (56%) endorsed a history of mental health counseling experience and 174 (37%) participating in one or more career counseling sessions. Of those with prior counseling experience, their mean satisfaction rating (1 = *very satisfied*, 5 = *very unsatisfied*) was 2.20 ($SD = 1.06$) for mental health counseling and 2.43 ($SD = 0.75$) for career counseling. Sample demographic information can be found in Table 1.

Table 1

Sample Characteristics

Variable	Mean	SD
Age	26.59	9.75
	N = 465	%
Gender		
Female	343	73.7
Male	112	24.1
Other	10	2.2
Race		
Asian	12	2.6
Black	44	9.5
Caucasian	367	78.9
Hispanic	20	4.3
Native American	6	1.3
Pacific Islander	1	.2
Other	15	3.2
Marital status		
Married	78	16.6
Divorced	13	2.8
Never married	374	80.6
Education		
High school diploma	43	9.3
Some college	271	58.2
Professional certificate	2	.4
Associate's degree	31	6.7
Bachelor's degree	70	15.1
Master's degree	37	8
Doctoral degree	7	1.5
Other	4	.9
Current enrollment		
Any university	365	78.4
Ball State University	100	21.6

Variables

Demographic Characteristics. The demographic questionnaire measured the following demographic characteristics: gender, age, race/ethnicity, marital status, university enrollment status, enrollment status at Ball State University (BSU), prior career counseling experience, prior mental health counseling experience, satisfaction with prior counseling experience, annual

household income, number of household members, highest level of education, degrees earned, email address, and mailing address. Satisfaction with prior counseling experience was measured on a 5-point scale, with “1” indicating “very satisfied” and “5” indicating “very unsatisfied.”

Psychological help-seeking intentions. The Beliefs About Psychological Services (BAPS) intent subscale was used to measure the latent variable of help-seeking intentions. The BAPS an 18-item self-report scale developed and cross-validated using samples of university students in the Midwestern U.S (Ægisdóttir & Gerstein, 2009). The BAPS was found to have good internal reliability ($\alpha = .85$) as well as two-week test-retest reliability ($r = .87$). Convergent validity was supported by its association ($r = .83$; Ægisdóttir & Gerstein, 2009) with a previously established measure of help-seeking attitudes, the Attitudes Toward Seeking Professional Psychological Help Scale (Fischer & Turner, 1970). Support for divergent validity involves its small, insignificant relationship with the Marlowe-Crowne Social Desirability Scale (Ægisdóttir & Gerstein, 2009).

An underlying factor structure has been identified for the BAPS, consisting of three factors: Intent, Stigma Tolerance, and Expertness (Ægisdóttir & Gerstein, 2009). This factor structure was replicated in two subsequent studies, one involving another sample of university students in the Midwestern U.S. and an Icelandic translation of the BAPS (Ægisdóttir & Einarsdóttir, 2012; Ægisdóttir & Gerstein, 2009). The first factor, the intent factor reflects an individual’s openness to seek help from psychologists. Examples of items in the intent subscale include “I would be willing to confide my intimate concerns to a psychologist” and “At some future time, I might want to see a psychologist.” All items are rated on a 6-point Likert type scale ranging from 1 (*Strongly Disagree*) to 6 (*Strongly Agree*). Scoring consists of summing up items

and dividing by number of items. Higher scores reflect greater intention to seek psychological help.

The intent subscale of the BAPS has demonstrated good internal consistency ($\alpha = .83$ to $.90$) and test-retest reliability ($r = .88$; Ægisdóttir & Gerstein, 2009). Convergent validity for the intent subscale was supported by its association with the Attitudes Toward Seeking Professional Psychological Help Scale (ATSPPH; $r = .71$). Divergent validity was supported by the finding that the intent subscale is uncorrelated with the Marlowe–Crowne Social Desirability Scale. For the current sample Cronbach’s alpha internal reliability was $.76$.

Self-Stigma. To measure this latent construct, The Self-Stigma of Seeking Help Scale (SSOSH; Vogel et al., 2006) and the Stigma Tolerance subscale of the BAPS were used. The SSOSH is a 10-item self-report measure of stigma related to mental health help-seeking. Response options include a 5-point Likert-type format ranging from “*Strongly Disagree*” to “*Strongly Agree*.” Example items include “Seeking psychological help would make me feel less intelligent” and “It would make me feel inferior to ask a therapist for help.” The scale has been studied using multiple populations, such as undergraduate students, older adults, clinical populations in the U.S. (Vogel et al., 2006; Vogel, Wade, & Ascheman, 2009; Hackler, Vogel, & Wade, 2010; Owen, Thomas, & Rodolfa, 2013), as well as cross-validation samples from six nations (Vogel et al., 2013). Cronbach’s alpha reliability has been reported ranging from $.89$ to $.91$ and 2-month test-retest reliability as $.72$ (Vogel et al., 2006; Vogel et al., 2009).

Confirmatory factor analysis identified a two-factor structure as the best fit for the SSOSH, with moderate-high loadings for all 10 items (i.e., all $> .50$). SSOSH criterion validity has been supported by its ability to predict decreased frequency of mental health help-seeking behavior during a 2-month period following scale administration (Vogel et al., 2006) as well as

lower client ratings of therapy session outcomes and working alliance (Owen et al., 2013). Criterion validity was further supported by expected, negative correlations with related constructs, such as the prior help-seeking behavior, the Disclosure Expectations Scale ($r = -.30$ to $-.47$), Intentions to Seek Counseling Inventory ($r = -.32$ to $-.38$), the Attitudes Toward Seeking Professional Psychological Help Scale ($r = -.53$ to $-.63$), and a positive association with the Help-Seeking Social Stigma Scale ($r = .46$ -. 48). Discriminant validity was also supported by small or nonsignificant associations between the SSOSH and the Rosenberg Self-Esteem Scale and the Maslowe-Crowne Social Desirability Scale (Vogel et al., 2006; Vogel et al., 2009). For the current sample Cronbach's alpha was .83.

The Beliefs About Psychological Services (BAPS) Stigma Tolerance subscale was used as one of the indicators of self-stigma in the current study (Ægisdóttir & Gerstein, 2009). Examples of items in the Stigma Tolerance subscale include "I would feel uneasy going to a psychologist because of what some people might think" and "Going to a psychologist means that I am a weak person." It consists of seven items, and all items are rated on a 6-point Likert type scale ranging from 1 (*Strongly Disagree*) to 6 (*Strongly Agree*). Scoring consists of summing up items and dividing by number of items. Higher scores reflect lower tolerance for stigma regarding to psychological help-seeking.

Convergent validity of the BAPS Stigma Tolerance subscale was supported by its moderate association with a well-established measure of attitudes about mental health help-seeking, the ATSPPH (Ægisdóttir & Gerstein, 2009). It has a test-retest reliability of .79. Prior studies have indicated Cronbach's alpha coefficients between .59 and .81. For the current sample, Cronbach's alpha was .81.

Perceived Severity. The Mental Health Belief Model Assessment (MHBMA) Severity scale (SEV) was used to measure the latent variable of perceived severity of mental illness. The MHBMA SEV is a 22-item self-report measure of beliefs about the potential benefits of participating in mental health services (Greene, 2018). Response options include a 5-point Likert-type scale, ranging from “*Strongly Disagree*” to “*Strongly Agree*.” Example items include “Having a mental health problem would result in serious consequences” and “Having a mental health problem would negatively affect my work.” Cronbach’s alpha reliability for the MHBMA SEV has been reported as .93 and two-week test-retest reliability at .82 (Greene, 2018).

Concurrent validity was supported by its positive relationship with the Barriers to Help Seeking Scale ($r = .37$) and the Value and Need in Seeking Treatment subscale of the ATSPPH scale – short form ($r = .19$; Greene, 2018). Known groups validity has been supported by the scale’s ability to predict which respondents were currently participating in mental health treatment services as well as respondents scoring below WHO-5 scale threshold for significant depressive symptoms (Greene, 2018). For the current sample, Cronbach’s alpha was .88.

Perceived External Barriers. The Barriers to Access to Care Evaluation-Revised (BACE-R) scale was used to measure the latent variable of external mental health help-seeking barriers (Clement et al., 2012). The BACE-R consists of 14 items. Response options include a 5-point Likert-type scale used rate the extent certain circumstances would make it hard for the respondent to attend therapy/counseling, ranging from “*Strongly Disagree*” to “*Strongly Agree*.” Examples of items include “Not being able to afford the financial costs involved” and “Having problems with childcare while I receive professional care.” The external barriers factor of the BACE-R was used because the second factor in the full BACE (i.e., internal barriers), mostly contains items measuring mental health stigma. Excluding this latter factor mitigates the risk of

multicollinearity with the self-stigma variable in the study's analyses. The BACE-R has high internal consistency ($\alpha = .96$) and concurrent validity is supported by its relationships with the Stigma Scale ($r = .42$), Psychological Health Scale ($r = -.17$; Miranda, 2018; Silva et al., 2013). For the current sample Cronbach's alpha was .86.

Self-Efficacy. The Self-Efficacy in Seeking Mental Health Care Inventory (SEI) inventory was used to measure the latent variable, mental health help-seeking self-efficacy (Moore, Schofield, van Rooyen, & Andersson, 2015). The SEI is a nine-item self-report measure of participant's beliefs in their ability to obtain mental health services. Examples of item stems include "Find a place to get mental health treatment" and "Cope well with the attitudes that the staff may have towards me." Response options include a scale ranging from 1 (*no confidence*) to 10 (*complete confidence*). Its developers identified two underlying factors for the scale using exploratory factor analysis: confidence in knowledge and confidence in coping (Moore et al., 2015). The SEI has been shown to discriminate between individuals with and without a history of mental health help-seeking behavior, specifically including help-seeking from a mental health professional. Prior research has found high internal consistency for the SEI ($\alpha = .89$ to $.93$; Moore et al., 2015; Cannon, 2019). Cronbach's alpha for the current sample was .88.

Perceived Benefits. This latent construct was measured by The MHBMA Benefits Short Form (BEN-S) and the Expertness subscale of the BAPS. The MHBMA BEN-S is a 5-item self-report measure of attitudes and beliefs about the potential benefits of participating in mental health services (Greene, 2018). Response options include a 5-point Likert-type scale, ranging from "*Strongly Disagree*" to "*Strongly Agree*." Examples of items include "Going to therapy can keep a mental health problem from getting worse" and "Going to therapy can help me feel better emotionally."

During its development, it demonstrated good internal consistency reliability ($\alpha = .97$) and two-week test-retest reliability ($r = .84$; Green, 2018). Convergent validity for the MHBMA BEN-S scale was supported by its moderate association with a well-established measure of attitudes about mental health help-seeking, the ATSPPH – short form ($r = .48$; Green, 2018). Discriminant validity was supported by the finding that the MHBMA BEN-S scale was unrelated to the Barriers to Help Seeking Scale. The complete MHBMA BEN-S scale can be found in Appendix E. For the current sample, Cronbach's alpha was .91.

The BAPS Expertness subscale was used as one of the indicators of perceived benefits in the current study (Ægisdóttir & Gerstein, 2009). Examples of items in this subscale include “Because of their training, psychologists can help you find solutions to your problems” and “Seeing a psychologist is helpful when you are going through a difficult time in your life.” It consists of five items, and all items are rated on a 6-point Likert type scale ranging from 1 (*Strongly Disagree*) to 6 (*Strongly Agree*). Scoring consists of summing up items and dividing by number of items. Higher scores reflect greater beliefs in the expertness of psychologists and their services.

Convergent validity of the BAPS Expertness subscale was supported by its moderate association with a well-established measure of attitudes about mental health help-seeking, the ATSPPH (Ægisdóttir & Gerstein, 2009). Divergent validity was supported by the finding that it is unrelated to the Marlow-Crowne Social Desirability Scale. It has a test-retest reliability of .75. Prior studies have indicated Cronbach's alpha coefficients between .69 and .79. For the current sample, Cronbach's alpha was .79.

Careless responding. To account for the threat of careless or random responding to items on any of the current study's measures, four “bogus” self-report items from Meade and Craig

(2012) were used. These items have a binary response format (i.e., yes or no), with items one and three indicating careless responding from “yes” responses and items two and four from “no” responses. Examples of items include “I am using an electronic device to complete this survey” and “I have been to every country in the world.” Cases were excluded where one or more bogus items were endorsed in a direction indicating random responding.

Procedures

The study was approved by the BSU Institutional Review Board. Data were collected via an online survey using Qualtrics survey software. Participation in the survey was incentivized. M-Turk participants were given \$3 for completing the survey. Undergraduate subject pool participants were given research credit for study participation. Three social media participants were randomly selected to receive one Amazon gift card of varying value, \$100, \$50, or \$25.

All forms of dissemination included information about the study’s inclusion criteria, the purpose of the study (i.e., to better understand attitudes about mental health), the relevant incentive, the approximate time needed to complete the survey (10-20 minutes), the researcher’s email address, and a weblink to the anonymous survey. Qualtrics Software settings were used to counter-balance the order of administration for all measures (i.e., except for the demographics questionnaire presented last) across respondents. The informed consent agreement can be found in Appendix E.

Data Analysis

The design of the proposed study is non-experimental using a single time-point. Latent-variable structural equation modeling (SEM) was used to evaluate and compare three models via Analysis of Moment Structures (AMOS) statistical software. Maximum likelihood estimation (MLE) and bootstrapping on 1,000 random samples of the data with 95% bias-corrected

confidence intervals (CIs) was used to estimate the parameters for each model. Three parcels were created to represent the following latent variables: the BACE, SEI, SEV, and BAPS intent scale by using a principal component analysis and balancing the loading strength of items between each of the three parcels (Little, Rhemtulla, Gibson, & Schoemann, 2013). The self-stigma latent variable consisted of two parcels from the SSOSH scale and the BAPS Stigma Tolerance Scale. The indicators of the perceived benefits latent variable included two parcels of the MHBMA BEN-S scale and the BAPS Expertness scale. When testing the models, covariance paths were drawn between the error terms of each exogenous latent variable to control for shared variance. One-way analysis of variance (ANOVA) was used to determine if university enrollment status and mode of survey access (i.e., M-Turk, subject pool, or social media participants) were associated with differences in mean scores on any continuous scales. For non-continuous variables (i.e., prior counseling history), a chi-square difference test was used.

Results

Sample Descriptives

Means and standard deviations for all observed measures based on gender, university enrollment, and survey access are represented in Table 2. One-way ANOVA was used to compare mean scores for all continuous variables between participant characteristics, including gender, race, university enrollment status, and method of survey access (i.e., M-Turk, social media, subject pool).

Table 2

Means and Standard Deviations of Continuous Scales by Gender, Survey Access, and University Enrollment Status

Measures	Gender		Enrollment Status		Survey Access		
	Men	Women	Student	Non-Student	M-Turk	Social Media	Subject Pool
BAPS Intent							
\bar{x}	4.29	4.62	4.60	4.33	4.20	4.79	4.57
<i>SD</i>	.83	.87	.84	.95	1.00	.83	.83
SSOSH							
\bar{x}	2.34	2.21	2.21	2.34	2.46	2.10	2.23
<i>SD</i>	.79	.70	.70	.78	.83	.76	.68
BAPS Stigma Tol							
\bar{x}	2.50	2.17	2.21	2.39	2.80	1.84	2.23
<i>SD</i>	1.05	.88	.88	1.10	1.31	.76	.84
BAPS Expertness							
\bar{x}	4.76	5.14	5.09	4.92	4.85	5.13	5.07
<i>SD</i>	.80	.71	.75	.74	.81	.62	.76
SEV							
\bar{x}	2.26	2.34	2.35	2.18	2.15	2.23	2.36
<i>SD</i>	.65	.71	.70	.68	.72	.63	.71
SEI							
\bar{x}	7.40	7.50	7.63	7.52	7.46	8.10	7.53
<i>SD</i>	1.55	1.53	1.53	1.59	1.60	1.40	1.54
BACE-R							
\bar{x}	3.06	2.96	2.98	2.99	3.12	2.82	2.99
<i>SD</i>	.82	.85	.86	.80	.82	.80	.86
BEN-S							
\bar{x}	4.28	4.55	4.53	4.32	4.52	4.58	4.52
<i>SD</i>	.67	.67	.63	.63	.65	.46	.65
Prior Counseling							
%	47%	59%	42%	47%	57%	28%	44%
Total Responses	112	342	364	100	61	71	332

Note. SSOSH = Self Stigma of Seeking Help Scale; SEV = Perceived Severity Scale; SEI = Self-Efficacy in Seeking Mental Health Care Inventory; BACE-R = Barriers to Access to Care Evaluation-Revised; BEN-S = Perceived Benefits Scale – Short Form; BAPS Intent = Beliefs About Psychological Services Scale Intent Subscale; BAPS Stigma Tol = Beliefs About Psychological Services Scale Stigma Tolerance Subscale; BAPS Expertness = Beliefs About Psychological Services Scale Expertness Subscale.

As reported in past research (Ægisdóttir & Einarsdóttir, 2012; Ægisdóttir & Gerstein, 2009), women reported greater psychological help-seeking intentions [$F(1, 461) = 7.34, p = .000$] than men. Perceived benefits [$F(1, 459) = 7.63, p = .000$] of seeking help was also greater for women compared to men. A chi square difference test was used to determine if men and women differed in their endorsement of prior counseling history. In line with past research,

women (59% yes) were more likely to endorse a history of prior counseling experience than men (47% yes; $\chi^2 = 4.03$, $df=1$, $p = .045$). No gender differences were found for other observed variables. No significant differences were found for race/ethnicity on any observed variables.

As Table 2 reveals, participants currently enrolled at a university scored higher [$F(1, 462) = 2.29$, $p = .03$] on perceived severity of mental illness compared to those who were not enrolled. University students scored higher [$F(1, 460) = 3.43$, $p = .007$] on perceived benefits of seeking psychological help compared to non-students. Help-seeking intentions were also greater [$F(1, 462) = 7.43$, $p = .004$] among university students compared to those not enrolled in university classes. A Chi square test revealed no difference between college (42% yes) and non-college (47% yes) respondents regarding prior counseling experience. Although perceived severity of mental illness has not been previously compared between college and non-college populations, the findings regarding perceived benefits and help-seeking intentions are consistent with prior findings about mental health attitudes and willingness to seek help between college and non-college populations (Mackenzie, Gekoski, & Knox, 2006; Hunt & Eisenberg, 2010).

One-way ANOVA was used to determine whether mean scale scores varied as a function of the method of survey access (i.e., M-Turk, subject pool, and social media). Group differences were found for the BAPS Intent subscale [$F(2, 461) = 7.50$, $p = .0006$], SSOSH [$F(2, 461) = 4.41$, $p = .013$], and BEN-S [$F(2, 459) = 7.15$, $p = .0008$]. No other significant differences were found for other measures.

Bonferroni post-hoc tests were used to compare mean scores between specific groups. For the BAPS Intent subscale, M-Turk participants score lower than those who accessed the study via the subject pool ($p = .012$) and social media ($p = .004$). M-Turk participants had higher scores on the SSOSH compared to social media participants ($p = .011$). For the SEI,

social media participants scored higher than M-Turk ($p = .012$) and subject pool participants ($p = .047$). M-Turk participants scored lower on the BEN-S than subject pool ($p = .001$) and social media participants ($p = .002$).

A chi-square difference test indicated social media respondents were less likely to endorse a history of prior counseling experience compared to subject pool ($p = .012$) and M-Turk participants ($p = .000$). No significant differences for prior counseling experience were found between M-Turk and subject pool participants.

Participants were asked to rate the influence of the COVID-19 pandemic on their survey responses using a four-point scale ranging from “Not at all” influential to “Very much.” The majority of respondents (60.7%) indicated “Not at all,” 22.8% reported “slightly,” 10.8% indicated “Somewhat,” and 5.7% reported “Very much.” An open response item allowed participants to describe, in their own words, how the pandemic influenced their survey responses. 91 participants gave open-ended responses. These responses were categorized were grouped into two categories: 1) statements indicating safety concerns or restricted availability of mental health services and 2) statements expressing an increased need for mental health services. Examples of the first category include “Quarantine makes it harder to seek help” or “Seeing a counselor could spread the virus.” Examples of the second category include “The pandemic probably makes people more likely to need help” or “Quarantine makes my mental health problems worse.” Of the 91 responses, eight fell within the first category and 83 in the second category. These findings suggest a minority of respondents may have been more likely to endorse items related to the benefits and need for psychological help-seeking.

Preliminary Analyses

Before model testing, means, standard deviations, skewness, kurtosis, reliability, and multicollinearity indices were calculated for the measured indicators of each latent variable for the entire sample. This information can be found in Tables 3, 4 and 5. Multicollinearity tolerance was within the acceptable range (i.e., above .2) for all variables (Hair et al., 2010). With the exception of the BEN-S scale, all variables had skewness and kurtosis within an acceptable range (i.e., -2 to +2; Hair et al., 2010). The SEM assumption of continuous measures was violated by the binary prior counseling item. Preliminary analyses suggested the data met the assumptions of multivariate normality, with the exception of moderate skewness on the BEN-S scale and the limited range of the prior counseling experience variable (yes, no). A correlation matrix including all observed indicator/parcels can be found in Table 6.

Table 3

Means, Standard Deviations, Skewness, and Kurtosis of Observed Variables

Variable	Standard		Scale	Skewness	Kurtosis
	Mean	Deviation	Range		
SSOSH	3.76	.72	1-5	-.483	-.298
SEV	2.31	.70	1-5	.541	.380
SEI	7.60	1.54	1-10	-.744	.578
BACE-R	3.02	.85	1-5	-.114	-.658
BEN-S	1.51	.64	1-5	1.852	5.261
BAPS Intent	4.55	.87	1-5	-.599	.517
BAPS Stigma Tol	2.25	.94	1-5	.961	.725
BAPS Expertness	5.05	.75	1-5	-.901	.471

Note. SSOSH = Self Stigma of Seeking Help Scale; SEV = Perceived Severity Scale; SEI = Self-Efficacy in Seeking Mental Health Care Inventory; BACE-R = Barriers to Access to Care Evaluation-Revised; BEN-S = Perceived Benefits Scale – Short Form; BAPS Intent = Beliefs About Psychological Services Scale Intent Subscale; BAPS Stigma Tol = Beliefs About Psychological Services Scale Stigma Tolerance Subscale; BAPS Expertness = Beliefs About Psychological Services Scale Expertness Subscale.

Table 4

Multicollinearity Diagnostics

Variable	Tolerance	VIF
SSOSH	.477	2.097
BAPS Stigma Tolerance	.446	2.244
SEV	.896	1.116
SEI	.657	1.521
BACE-R	.864	1.158
BEN-S	.598	1.673
BAPS Expertness	.585	1.708
Mental Health History	.926	1.079

Note. SSOSH = Self Stigma of Seeking Help Scale; BAPS Stigma Tol = Beliefs About Psychological Services Scale; SEV = Perceived Severity Scale; SEI = Self-Efficacy in Seeking Mental Health Care Inventory; BACE-R = Barriers to Access to Care Evaluation-Revised; BEN-S = Perceived Benefits Scale – Short Form; BAPS Intent = Beliefs About Psychological Services Scale Intent Subscale; Stigma Tolerance Subscale; BAPS Expertness = Beliefs About Psychological Services Scale Expertness Subscale.

Table 5

Reliability Analysis of Scales and Indicators/Parcels

Scale/Indicator	Number of items	Cronbach's alpha
BAPS Intent Subscale	6	.76
Intent Parcel 1	2	.51
Intent Parcel 2	2	.53
Intent Parcel 3	2	.38
SSOSH	10	.83
SSOSH Parcel 1	5	.74
SSOSH Parcel 2	5	.68
BAPS Stigma Tolerance	7	.79
SEV	11	.88
SEV Parcel 1	4	.73
SEV Parcel 2	4	.70
SEV Parcel 3	3	.63
SEI	9	.88
SEI Parcel 1	3	.76
SEI Parcel 2	3	.74
SEI Parcel 3	3	.64
BACE	13	.86
BACE Parcel 1	5	.75
BACE Parcel 2	4	.63
BACE Parcel 3	4	.63
BEN-S	5	.91
BEN-S Parcel 1	3	.85
BEN-S Parcel 2	2	.82
BAPS Expertness	5	.76

Note. SSOSH = Self Stigma of Seeking Help Scale; SEV = Perceived Severity Scale; SEI = Self-Efficacy in Seeking Mental Health Care Inventory; BACE-R = Barriers to Access to Care Evaluation-Revised; BEN-S = Perceived Benefits Scale – Short Form; BAPS Intent = Beliefs About Psychological Services Scale Intent Subscale; BAPS Stigma Tol = Beliefs About Psychological Services Scale Stigma Tolerance Subscale; BAPS Expertness = Beliefs About Psychological Services Scale Expertness Subscale.

Table 6

Correlations Between Measured Indicators in Models

	1	2	3	4	5	6	7	8	9
1 Prior Counseling	1	.							
2 SSOSH	.18**	1							
3 SEV	-.1*	.19**	1						
4 BACE	-.06	.17**	.19**	1					
5 SEI	.14**	.52**	.16**	.24	1				
6 BEN	-.09*	-.43**	.04	-.06	-.38**	1			
7 BAPS Expertness	.13**	.44**	-.03	.115*	.38*	-.56**	1		
8 BAPS Stigma Tolerance	-.18**	-.66**	-.12*	-.27**	-.44**	.50**	-.53**	1	
9 BAPS Intent	.32**	.52**	.06	.03	.48*	-.49**	.64**	-.47**	1

Note. * < .05, ** < .01, *** < .001. SSOSH = Self Stigma of Seeking Help Scale; SEV = Perceived Severity Scale; SEI = Self-Efficacy in Seeking Mental Health Care Inventory; BACE-R = Barriers to Access to Care Evaluation-Revised; BEN-S = Perceived Benefits Scale – Short Form; BAPS Intent = Beliefs About Psychological Services Scale Intent Subscale; BAPS Stigma Tol = Beliefs About Psychological Services Scale Stigma Tolerance Subscale; BAPS Expertness = Beliefs About Psychological Services Scale Expertness Subscale.

Model Testing

Maximum likelihood estimation was used to test the fit of all three models. In the partially mediated model (Model 1), self-stigma and prior counseling experience were specified as having a direct relationship with psychological help-seeking intentions as well as indirect relationships via HBM variables (i.e., perceived severity, self-efficacy, external barriers, perceived benefits). The partially mediated model was hypothesized to be the best-fitting model. To test whether partial mediation best describes the relationships of self-stigma and prior counseling with help-seeking intentions, fully mediated and unmediated models were generated

and compared to the partially mediated model. The fully mediated model (Model 2) includes relationships between self- stigma and prior counseling experience with help-seeking intentions, mediated by all four of the HBM variables. In the unmediated model (Model 3), self-stigma, HBM variables (i.e., perceived severity, self-efficacy, external barriers, perceived benefits), and prior counseling experience are arranged in direct relationships with psychological help-seeking intentions (See Figures 1 – 3). Measured indicator loadings on their respective latent construct/variable is reported in Table 7. As the Table reveals, all indicators loaded highly on their respective latent construct, suggesting that the latent constructs/variables were well represented and appropriate for model testing. Fit indices for each model are summarized in Table 8.

Table 7

Measured Indicator's Loading on Latent Constructs

Constructs/Variables	Number of items	Loadings
HELP SEEKING INTENTIONS		
Intent Parcel 1	2	.85
Intent Parcel 2	2	.83
Intent Parcel 3	2	.84
SELF-STIGMA		
SSOSH Parcel 1	5	.91
SSOSH Parcel 2	5	.90
BAPS Stigma Tolerance	7	.84
PERCEIVED SEVERITY		
SEV Parcel 1	4	.91
SEV Parcel 2	4	.89
SEV Parcel 3	3	.93
SELF-EFFICACY		
SEI Parcel 1	3	.91
SEI Parcel 2	3	.90
SEI Parcel 3	3	.89
PERCEIVED BARRIERS		
BACE Parcel 1	5	.88
BACE Parcel 2	4	.89
BACE Parcel 3	4	.87
PERCEIVED BENEFITS		
BEN-S Parcel 1	3	.91
BEN-S Parcel 2	2	.91
BAPS Expertness	5	.77

Note. SSOSH = Self Stigma of Seeking Help Scale; SEV = Perceived Severity Scale; SEI = Self-Efficacy in Seeking Mental Health Care Inventory; BACE-R = Barriers to Access to Care Evaluation-Revised; BEN-S = Perceived Benefits Scale – Short Form; BAPS Intent = Beliefs About Psychological Services Scale Intent Subscale; BAPS Stigma Tol = Beliefs About Psychological Services Scale Stigma Tolerance Subscale; BAPS Expertness = Beliefs About Psychological Services Scale Expertness Subscale.

Model 1 – Partially Mediated Model. The partially mediated model demonstrated overall adequate fit to the data. Chi-Square and Chi-Square/*df* were significant ($\chi^2 = 486.53$, *df* = 130, $p = .000$; $\chi^2/\text{df} = 3.74$, $p = .000$), indicating the empirical model differs from the theoretical model. Due to Chi-Square's susceptibility to sample size, additional fit indices were examined. The goodness of fit index (GFI) and comparative fit index (CFI) vary from zero to

one, with values of .90 and above indicating adequate fit and .95 and above suggesting good fit (Hoyle, 2012). The GFI and CFI of Model 1 suggested adequate fit (GFI = .90; CFI = .93). A root mean square error of approximation (RMSEA) value less than .05 indicates good fit, .08 indicated barely-acceptable fit, and .10 and above indicates poor fit. RMSEA indicated acceptable fit (RMSEA = .08, 90% CI [.70 to .84]).

Model 2 – Fully Mediated Model. The fully mediated model demonstrated barely-adequate fit to the data overall. Chi-Square and Chi-Square/*df* were significant ($\chi^2 = 526.33$, $df = 130$, $p = .000$; $\chi^2/df = 4.05$, $p = .000$), indicating the empirical model differs from the theoretical model. GFI and CFI of Model 2 (GFI = .89; CFI = .92) suggested barely-acceptable fit. RMSEA also indicated barely-acceptable fit (RMSEA = .08, 90% CI [.74 to .88]).

Model 3 - Unmediated Model. Based on interpretations of MLE fit indices overall, the unmediated model demonstrated adequate fit to the data. Chi-square and chi-square/*df* were significant ($\chi^2 = 516.59$, $df = 134$, $p = .000$; $\chi^2/df = 3.86$, $p = .000$), indicating the empirical model differs from the theoretical model. Taken together, the GFI and CFI of Model 3 (GFI = .90; CFI = .92) suggested barely-acceptable fit. For the unmediated model, this index was just within the threshold of acceptable (RMSEA = .08, 90% CI [.71 to .86]).

Table 8

Maximum Likelihood Estimation Model Fit

Models	χ^2	χ^2/df	GFI	CFI	RMS EA	RMSEA Low	RMSEA High	AIC	BIC
1 - Partially mediated	486.53* <i>df</i> = 130	3.74*	.900	.930	.08	.07	.08	606.53	611.95
2 - Fully mediated	526.33* <i>df</i> = 130	4.05*	.890	.920	.08	.07	.09	646.33	651.75
3 - Unmediated	516.59* <i>df</i> = 134	3.86*	.892	.921	.08	.07	.09	628.59	633.65

Note. χ^2 = chi square; χ^2/df = chi square/degrees of freedom; GFI = goodness of fit index; CFI = comparative fit index; RMSEA = root mean square error analysis; AIC = Akaike's Information Criteria; BIC = Bayesian Information Criteria.

* = $p < .001$

Model Comparison

A chi-square difference test was used to compare the chi-square/degrees of freedom (*df*) indices for each model (Satorra & Bentler, 2001). Significant differences in chi-square/*df* values were indicated between the partially mediated model ($\chi^2 = 486.53$; *df* = 130) and unmediated model ($\chi^2 = 516.59$; *df* = 134; $p = .023$) as well as the partially mediated and fully mediated model ($\chi^2 = 526.33$; *df* = 130; $p = .004$). Thus, hypothesis 1 was supported, suggesting the hypothesized partially mediated model (Model 1) yielded the best fit to the data.

Direct Effects

Standardized path coefficients for the partially mediated model are represented in Figure 4. Table 9 lists the standardized regression coefficients for each relationship. Perceived benefits demonstrated a positive relationship with help seeking intentions. Self-efficacy was positively related to help seeking intentions. These findings partially support hypothesis 2. Contrary to expectations, perceived severity was not linked to help-seeking intentions. Inconsistent with hypothesis 3, external barriers had a positive relationship with help seeking intentions. A

negative relationship was observed between self-stigma and help-seeking intentions. This finding was consistent with hypothesis 4. Consistent with hypothesis 5, a positive relationship was observed between counseling history and help-seeking intentions.

Mediation

Indirect effects in the partially mediated model are represented in Table 10. Indirect effects were identified in the relationship between self-stigma and help-seeking intentions when mediated by self-efficacy and perceived benefits. That is, individuals who endorsed fewer stigmatized beliefs about mental health had stronger beliefs in the effectiveness of mental health services as well as their own self-efficacy, which was connected to greater help-seeking intentions. Perceived barriers also mediated the relationship between self-stigma and help-seeking intentions, such that individuals who endorsed more stigmatized attitudes were more likely to perceive external help-seeking barriers, which was linked to lower help-seeking intentions. Contrary to what was expected, perceived severity did not mediate the relationship between self-stigma and help seeking intentions. These findings are partially consistent with hypothesis 6.

As expected, external barriers mediated the relationship between prior counseling history and help seeking intentions. That is, individuals who previously participated in mental health services were less likely to perceive external barriers to seeking help, which was associated with greater intentions to seek help. In contrast to what was hypothesized, perceived severity, self-efficacy, and perceived benefits did not mediate the relationship between prior counseling experience and help-seeking intentions. Thus hypothesis 7, received only partial support. Refer to Appendix C for results involving the fully mediated and unmediated model.

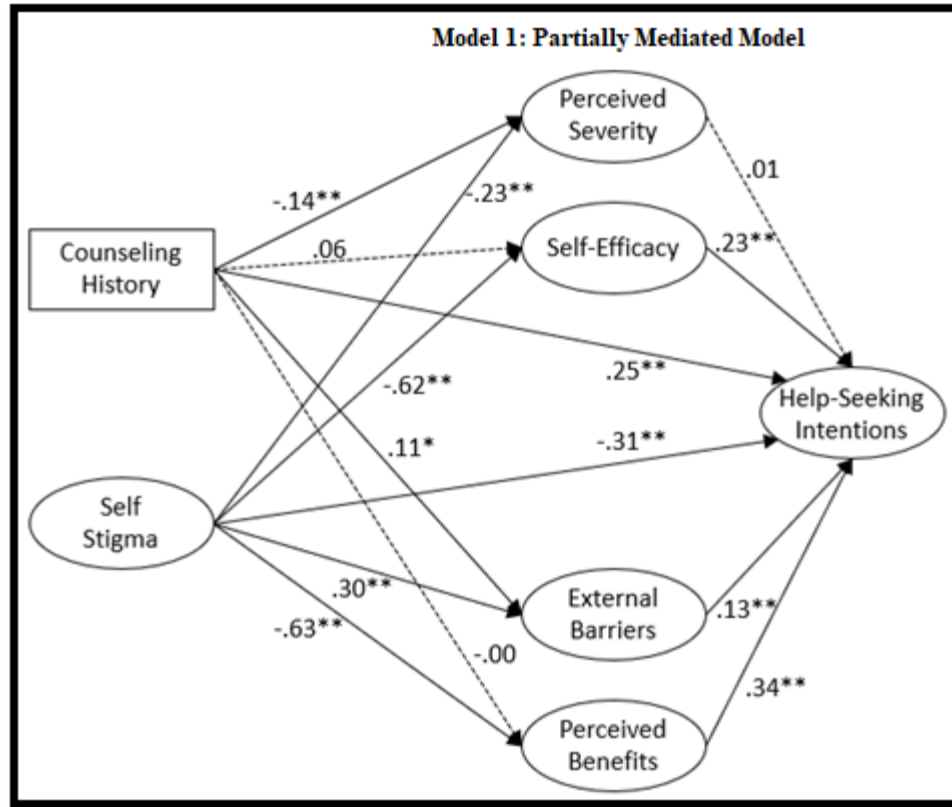


Figure 4. Partially mediated model (Model 1) with path coefficients. Dotted lines represent nonsignificant hypothesized paths. $*p < .05$. $**p < .01$.

Table 9

Partially Mediated Model Standardized Direct Effects, Total Effects, Total Indirect Effects, Correlations, 95% Bias-Corrected Confidence Interval, and Significance.

Relationships		Standardized path coefficients	95% CI (BC) IV→DV	P	
Self-Stigma	→	Perceived Severity	-.232	-.335, -.127	.000
Self-Stigma	→	Self Efficacy	-.615	-.698, -.514	.000
Self-Stigma	→	External Barriers	.300	.188, .410	.000
Self-Stigma	→	Perceived Benefits	-.627	-.737, -.505	.001
Counseling History	→	Self Efficacy	.055	-.036, .147	.252
Counseling History	→	Perceived Severity	-.135	-.226, -.038	.009
Counseling History	→	External Barriers	.111	.015, .198	.023
Counseling History	→	Perceived Benefits	-.002	-.087, .084	.956
Perceived Benefits	→	Help Seeking Intent	.340	.166, .580	.001
External Barriers	→	Help Seeking Intent	.133	.041, .225	.006
Self-Efficacy	→	Help Seeking Intent	.229	.091, .368	.001
Perceived Severity	→	Help Seeking Intent	.012	-.098, .116	.858
Self-Stigma	→	Help Seeking Intent	-.311	-.526, -.096	.008
Counseling History	→	Help Seeking Intent	.254	.172, .339	.000
<u>Total Effects</u>					
Self-Stigma	→	Help Seeking Intent	-.628	-.718, -.521	.000
Counseling History	→	Help Seeking Intent	.279	.188, .372	.000
<u>Total Indirect Effects</u>					
Self-Stigma	→	Help Seeking Intent	-.317	-.690, .193	.000
Counseling History	→	Help Seeking Intent	.025	-.034, .113	.315
<u>Correlations</u>					
Perceived Benefits	↔	External Barriers	.138	.019, .259	.025
Self Efficacy	↔	External Barriers	-.152	-.259, -.024	.023
Self Efficacy	↔	Perceived Benefits	.104	-.048, .241	.173
Perceived Severity	↔	Perceived Benefits	-.205	-.348, -.062	.004
Perceived Severity	↔	Self Efficacy	.085	-.038, .203	.182
Perceived Severity	↔	External Barriers	-.142	-.256, -.031	.015

Note. Estimates are based on a 95% bias-corrected confidence interval. CI = confidence interval; BC = bias corrected; IV = independent variable; DV = dependent variable.

Table 10

Assessment of the Indirect Effects (Mediation): 95% Bias-Corrected Confidence Interval, and Significance

Relationships			95% CI (BC) IV→M→DV	<i>p</i>
Counseling History	Perceived Severity →	Help Seeking Intent →	-.029, .020	.787
Counseling History	Self- efficacy →	Help Seeking Intent →	-.009, .065	.188
Counseling History	Perceived Barriers →	Help Seeking Intent →	.003, .058	.015
Counseling History	Perceived Benefits →	Help Seeking Intent →	-.048, .050	.947
Self- Stigma	Perceived Severity →	Help Seeking Intent →	-.036, .030	.828
Self- Stigma	Self- efficacy →	Help Seeking Intent →	-.297, -.072	.001
Self- Stigma	Perceived Barriers →	Help Seeking Intent →	.015, .106	.004
Self- Stigma	Perceived Benefits →	Help Seeking Intent →	-.537, -.119	.000

Note. Estimates are based on a 95% bias-corrected confidence interval. CI = confidence interval; BC = bias corrected; IV = independent variable; M = mediator; DV = dependent variable. A 95% CI that does not cross zero indicates a significant mediation (indirect effect of the IV on the DV via the mediator).

Discussion

The aim of the current study was to test if HBM components predict psychological help-seeking intentions as well as to examine whether the relationship between self-stigma and help-seeking intention was mediated by the HBM components. It was anticipated that this relationship be represented by a partially mediated model (Model 1). More specifically, self-stigma and prior

counseling experience were expected to demonstrate direct relationships with psychological help-seeking intentions as well as indirect relationships mediated by the HBM components. Two additional competing models were tested: a fully mediated model (Model 2) where self-stigma and prior counseling experience were indirectly related to help-seeking intentions via HBM variables, and an unmediated model where self-stigma, prior counseling experience, and HBM components were linked to help-seeking intentions.

The hypothesized model yielded the best fit to the data. However, while all three models demonstrated acceptable fit, several indices indicated the models fell just within the conventional threshold for adequate fit. This finding could be explained in multiple ways. It may be that the actual relationships between prior counseling experience, self-stigma, HBM components, and help-seeking intentions are not fully explained by the structure of models tested in this study. Although the current study supported the partially mediational relationship between self-stigma and help-seeking intentions, alternative relationship structures not specified in the current study may contribute to the adequacy of model fit, such as possible mediation between HBM variables and help-seeking intentions. For example, Orji et al. (2012) found the relationship between self-efficacy and healthy eating behavior was partially mediated by perceived external barriers. However, the current study did not test other possible mediation due to the limited empirical support for such mediations.

Relationships that were expected but not found in the current model may also impose limits on model fit. Unexpectedly, perceived severity of mental health difficulties was not related to help-seeking intentions in any of the models tested. It was hypothesized that perceived severity would exhibit a positive relationship with help-seeking intentions. Although a relationship was expected, perceived severity was perhaps the least likely HBM component to

demonstrate such a relationship. Prior research has shown perceived severity tends to have the weakest relationship with health-related behaviors, especially those related to mental health (O'Connor et al., 2014; Langley, Wootton, & Grieve, 2018), but these findings have been inconsistent (Kim & Zane, 2016; Kulesza, Pedersen, Corrigan, & Marshall, 2015; Vanheusden et al., 2009). The lack of a significant relationship for perceived severity is ostensibly surprising because it seems likely that individuals would be motivated to mitigate risks implicated by illnesses they perceive as linked to severe distress or dysfunction. One possible explanation for this finding may be related to the limited personal emphasis in the measure of perceived severity. That is, these measures, such as the MHBMA perceived severity scale, emphasize an individual's beliefs about the risks and outcomes of mental illness overall, instead of beliefs about personal vulnerability to mental illness. Future research on this topic should use measures that include first-person language to assess individuals' perceptions of their current distress or dysfunction caused by mental illness as well as future risks related to mental illness.

The other HBM components (i.e., perceived benefits, perceived external barriers, and help-seeking self-efficacy) were related to help-seeking intentions. Of these variables, the size of the relationship for self-efficacy is noteworthy. Compared to other HBM components, self-efficacy has been one of the strongest predictors of physical health behaviors. Previous investigations of the HBM and physical health behaviors have shown a moderate effect sizes ($r=.32$ to $.55$; Ashoori et al., 2020; Jose et al., 2021; Mattson, 1999; Orji et al., 2012). This finding has not been supported in prior HBM studies of mental-health intentions. Most studies of the HBM and mental health-help-seeking reported a non-significant relationship between self-efficacy and help-seeking intentions (O'Connor et al., 2014; Langley et al., 2018). It is surprising that the size of the path coefficient between help-seeking self-efficacy and intentions in the

current study was larger than those found in prior HBM studies of help-seeking intentions. This discrepancy may be partially explained by the type of measures used for self-efficacy. In HBM studies of psychological help-seeking intentions, researchers relied on a self-report measure of general self-efficacy (i.e., the General Self-Efficacy Scale), and studies of physical health behavior included self-efficacy scales that were specific to the behavior being studied (e.g., dieting self-efficacy, safe-sex self-efficacy; Orji et al., 2012; Ashoori et al., 2020). The current study used a measure of self-efficacy specific to mental health help-seeking (i.e., Self-Efficacy in Seeking Mental Health Care Inventory; Moore et al., 2015). Thus, future research may consider using measures of self-efficacy for specific behaviors compared to measures of general self-efficacy for predicting discrete health-promoting behaviors or intentions.

Use of the specific self-efficacy measures for health-promoting behavior or intentions also has an advantage over measures of general self-efficacy because it is more consistent with its theoretical basis in the HBM. The rationale for including self-efficacy in the HBM is linked to the expectation that participation in a particular health-promoting behavior will vary as a function of an individual's perception of their ability to perform that behavior. That is, people are more likely to participate in a specific behavior when they are confident in their ability to perform that behavior. On this basis, the current study's effect sizes for the relationships between self-efficacy and help-seeking intentions are likely more theoretically valid than those of prior HBM studies of help-seeking (O'Connor et al., 2014; Langley et al., 2018).

Compared to perceived severity and self-efficacy, findings involving the remaining HBM components (i.e., perceived benefits and perceived external barriers) were more consistent with prior HBM research. Perceived benefits demonstrated a modest effect on help-seeking intentions in the current study. This effect approximates the lower end of estimations reported for these

variables in prior HBM help-seeking studies ($r=.42$ to $.70$; O'Connor, Martin, Weeks, & Ong, 2014; Langley et al., 2018). However, when comparing the current findings for perceived benefits and help-seeking intentions to those of prior studies, it is important to consider the issues with multicollinearity between scores linked to these variables in prior research (Langley et al., 2018). It is highly conceivable, therefore, that for the current study, the effect size for the relationship between perceived benefits and help-seeking intentions may be less inflated.

Parallels with prior research are also evident for the effect of perceived external barriers on help-seeking intentions. Effect sizes estimates for this relationship in the current study were small across all three models. Slightly larger effect sizes for this relationship were found by prior researchers ($r=-.21$ to $-.27$; O'Connor, Martin, Weeks, & Ong, 2014; Langley, Wootton, & Grieve, 2018) when the external barriers variable was measured by the sum of barriers endorsed by a 19-item list developed for those studies. Estimates of this relationship in the current study were the smallest in comparison to the other significant effects reported for HBM variables on help-seeking intentions, suggesting the perception of external barriers (e.g., financial cost, time, availability of services) may be less substantial than other factors, such as beliefs about the effectiveness of mental health services, for considerations related to seeking psychological help.

The main finding of interest in the current study involves the relatively superior fit of the partially mediated model compared to the alternative models. The largest mediating effects in the relationship between self-stigma and help-seeking intentions were found for perceived benefits of psychological services and self-efficacy for engaging in those services. Therefore, self-efficacy and beliefs about the benefits of mental health services may be especially integral to the deterring effects of self-stigma on an individual's intentions to seek help. These findings expand prior research by supporting the notion that the relationship between stigmatizing beliefs and

psychological help-seeking intentions partially depends upon beliefs about relevant mental health beliefs, including perceptions about the benefits of psychological services, perceptions of external barriers for seeking those services, and personal confidence for effectively utilizing those services.

Contrary to expectations, perceived external barriers was the only HBM variable that mediated the relationship between prior counseling experience and help-seeking intentions. This finding suggests, while prior counseling experience is linked to greater help-seeking intentions, the magnitude of this relationship may vary as a function of the perception of personal obstacles (e.g., cost, availability of services, insurance). While perceived external barriers seems to be an important mediator in the relationship between prior counseling and intention, it is not an important mediator in the relationship between stigma and intention.

The finding that no other HBM variables mediated this relationship is surprising because the link between participation in counseling services and subsequent help-seeking attitudes (e.g., benefits of counseling) and intentions has been supported in prior research (Blau & DiMino, 2019; Kahn & Williams, 2003; Kakhnovets, 2011; Yorgason, Linville, & Zitzman, 2008). One possible explanation could involve the current study's use of a single item to measure prior counseling experience, which could deflate its relationships with other variables. Future studies should rely on more sophisticated scales of prior counseling experience to adequately measure all of its aspects.

Research and Theoretical Implications

The current study's findings expanded upon prior research in two major ways. First, it investigated components of the HBM as they relate to factors of mental health using a sample of U.S. adults. Prior to the current study, HBM variables were exclusively used to investigate

behaviors related to physical health, with the exception of two studies of psychological help-seeking intentions among Australian students (O'Connor et al., 2014; Langley et al., 2018). This extension of prior physical health behavior findings suggests the HBM may have a similar capacity for predicting mental health help-seeking intentions. Additional research is needed to investigate the practical utility of help-seeking measures for predicting subsequent help-seeking behavior. That is, although measures of help-seeking intentions are positively related to prior counseling experience, more information is needed to understand whether measures of intentions can be used to estimate future psychological help-seeking behavior.

Secondly, the current findings highlight the relevance of mediational effects for HBM variables, specifically regarding self-stigma about mental illness. This observation supports the notion that perceptions about the feasibility and availability of mental health services may play an important role in the relationship between stigma and help-seeking intentions. Future research should explore other possible combinations of relationships between HBM components and supporting variables to improve the predictive efficacy of HBM models for mental health behaviors or intentions. There may be other interactions of HBM variables or replacement variables (e.g., personal vulnerability to illness) that may improve the predictive ability of the HBM. Additionally, future research should investigate whether the mediating relationships found in the current study underly a causal relationship between self-stigma, health beliefs, and help-seeking behavior or intentions. For example, experimental investigations of outreach and educational interventions that target awareness of the benefits and pathways to mental health services could provide additional insights into whether health beliefs mitigate the deterring effect of stigma on help-seeking intentions or behavior.

In the current study, perceived external barriers had the smallest relationship with psychological help-seeking intentions compared to self-efficacy and perceived benefits. This finding suggests perceived barriers may be less important than other HBM components for predicting help-seeking intentions. However, it may be explained by a discrepancy between beliefs (i.e., perceived barriers and help-seeking intentions) and concrete circumstances (i.e., actual barriers and help-seeking behaviors). That is external barriers may be more related to actual help-seeking behavior as fact of life's circumstances when compared to perceived barriers and help-seeking intentions.

Strengths and Limitations

The primary strength of the current study involves the gap it addressed in the extant literature involving stigma, the HBM, and help-seeking intentions. It did so in at least two noteworthy ways. First, it adds to the limited evidence regarding components of the HBM and psychological help-seeking intentions using a sample of U.S. adults. Presently, there have been only two, limited investigations of HBM components and psychological help-seeking intentions, both of which used small samples of Australian university students (O'Connor et al., 2014; Langley et al., 2018). The current study supports the predictive utility of using health beliefs to predict psychological help-seeking intentions, especially as related to understanding stigma.

Secondly, current findings expanded upon the HBM help-seeking literature by testing the usefulness of dividing the original HBM component of "perceived barriers" into two variables, mental illness stigma (i.e., an internal barrier) and perceived external barriers. The partially mediated effect of self-stigma on help-seeking intentions supports the usefulness of this step. That is, dividing the perceived barriers component into two variables provided a more comprehensive understanding of the links between stigma, HBM components, and psychological

help-seeking intentions and was necessary to identify the mediational effects of self-efficacy, perceived external barriers, and perceived benefits.

There are at least three major limitations for the current study. The first limitation involves potential problems with convenience sampling. Consequently, the findings are limited in their generalizability to specific populations. The method of participant access (i.e., M-Turk, social media, subject pool) was associated with significant differences on the BAPS Intent subscale, SSOSH, prior counseling experience item, SEI, and BEN-S. While preliminary analyses revealed the influence of the method of survey access did not significantly change any relationships specified in the partially mediated model, this characteristic remains a confound and weakens the internal validity of current findings because they can be partially attributed to sampling procedures. That is, individual reasons to participate in the current study may vary as a function of the method participants to access the study access. For example, subject pool participants participate in research for course credit while community members are incentivized by a monetary incentive. The current findings may be biased due to the reasons why some people choose to take part and some do not.

Secondly, the current study's sample consisted mostly of young adult females, resulting in an under-representation of older adults and males. The extent that the current findings generalize to these groups remains unclear. Additional research is needed to determine whether these groups differ in their scores on measures used in the current study.

Thirdly, the data for certain observed variables (i.e., MHBMA BEN-S, counseling history) in the current study deviated from the assumptions of MLE. Although these deviations were not severe enough to merit alternative methods of parameter estimation (e.g., weighted least squares), they could impair the accuracy of model estimates. For example, the distribution of

scores on the perceived benefits scale were skewed in the direction of affirming the benefits of mental health services. This characteristic of the data can increase the risk of type one error (Kline, 2011), which could inflate the effect size in the relationships between perceived benefits and other variables in the current study. Additionally, counseling history was measured as a binary variable, which can deflate the estimates of path coefficients in its relationships with other variables. As a result, the effect size may be underestimated for relationships between prior counseling history and other variables in the current study. This Interpretation of respective relationships with these variables should consider these limitations.

Conclusion

The study provided insight into the relationship between self-stigma, prior counseling history, psychological help-seeking intentions, and HBM components including perceived severity of mental illness, self-efficacy for using mental health services, perceived external barriers for seeking services, and perceived benefits of counseling. After testing three models, a partially mediated relationship between self-stigma and help-seeking intentions was supported. With the exception of perceived severity, all of the HBM components and counseling history were associated with help-seeking intentions. Future research is needed to further understand how these relationships manifest for predictions of actual help-seeking behaviors.

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Appendix A: Extended Literature Review

Rates of mental illness are a serious problem in the U.S. today, and one that has attracted increased attention by researchers as well as laypersons (Schomerus et al., 2012). According to a meta-analysis of population-based studies, psychiatric disorders affect about 17% of people in the U.S. annually (i.e., over 55 million) and 30% over the course of a lifetime (Steel et al., 2015). Most people affected by mental illness are unlikely to participate in appropriate treatment services (Clement et al., 2015), which exacerbates the pre-existing personal and public health problems related to mental illness.

Many of these problems are difficult to understate and, as a public health issue, their effects are as insidious as they are severe. In 2010, the Global Disease Burden Study ranked sources of disease burden in the United States and other countries based on years living with a disability. Psychiatric disorders account for 23% of all non-fatal sources of disease burden and constitute the main source of disease burden in the world. Public management costs for these issues have been estimated at €453 billion across Europe in 2010 and approximately \$300 billion in U.S. in 2002 and 2003 (Gustavsson et al., 2011; Reeves et al., 2011).

The precipitating public health consequences of mental illness are exacerbated by other systemic factors that limit access to treatment services and deter help-seeking behavior, such as lack of insurance coverage for mental health services, shared stereotypes about psychiatric disorders, and availability of services. To increase the effectiveness of programs and other initiatives that aim to promote mental health help-seeking, deeper understanding is needed about its major deterrents and facilitators, including how these factors interact to promote or discourage help-seeking behavior.

Mental Health Help Seeking

Regarding physical illnesses, the prudence of early detection, prevention, and timely treatment is generally acknowledged and accepted (Jorm et al., 2000). For example, people are generally aware of the common signs for certain types of cancers, the importance of vaccines for protecting against various diseases, how to identify symptoms related to cardiovascular disease (e.g., heart attacks, strokes), as well as basic steps to manage these problems (e.g., emergency room, cardiopulmonary resuscitation). Concerning the treatment of physical disease, many people know about various means to acquire professional medical assistance (e.g., primary care, urgent care, emergency room), the types of treatments that might be administered, and the likely outcomes of those treatments. This knowledge and associated health-related behavior promotes positive public attitudes about and support for services to address medical problems.

Unfortunately, these examples of common knowledge, attitudes, and help-seeking behavior do not generalize equally well to mental health problems (Mitchell & Selmes, 2007). Although issues with infrequent participation in health-related behavior vary broadly across types of physical disease, limited participation in mental health help-seeking behavior seems to be especially problematic for types of psychiatric illness.

For the purpose of the current manuscript, psychological help-seeking can be defined as “Any behavior carried out by an individual who perceives a personal need of formal psychological assistance with the purpose of meeting this need in a positive way” (Rickwood, Thomas, & Bradford, 2012). This definition serves three purposes – 1) to identify psychological help-seeking as one type of health behavior, 2) to distinguish between individuals voluntarily seeking services and mandatory participants (e.g., court ordered treatment, parent-initiated treatment), and 3) allowing enough semantic flexibility to encompass most of the formal

activities individuals pursue to relieve psychiatric symptoms (e.g., psychotherapy, psychotropic medication, spiritual support).

Despite the aforementioned prevalence of mental illness, among people in the U.S. who experience a psychiatric disorder, 52% to 74% don't receive help (Clement et al., 2015). This range encompasses a variety of psychiatric disorders, such as depressive disorders, anxiety, and psychosis, but these estimates are somewhat lower for certain populations, including Asians, Arabs, African Americans, youth, men, military service members, health professionals (Clement et al., 2015), sexual minorities (Buchmueller & Carpenter, 2010), and individuals living in rural communities (Hoyt, Conger, Valde, & Weihs, 1997).

Delaying or neglecting to seek help can involve many channels of psychological help-seeking (e.g., psychotherapy, psychopharmacological treatments) falling within the help-seeking definition previously provided. Although rates of help-seeking remain low regardless of which channel it is pursued through, individuals may be more willing to seek help in some settings (e.g., medical) compared to others (e.g., spiritual, psychiatric). For example, researchers have suggested mental health stigma is less likely to deter individuals who seek help from a primary care physician (Komiti, Judd, & Jackson, 2006). These findings, though limited, may explain why general practitioners tend to be one of the main first-steps in pathways to care for mental health problems (Amaddeo, Zambello, Tansella, & Thornicroft, 2001; Bower & Gilbody, 2005).

Even in the primary care setting, only a minority of patients have been found to report mental health problems to their physician. One consequence of this tendency involves low detection of mental health problems by general practitioners (Joukamaa, Lehtinen, & Karlsson, 1995; Pini et al., 1997), especially for youth (Sayal & Taylor, 2004). However, when mental

health complaints are brought to the attention of general practitioners, clinically significant levels of psychological distress are accurately identified in the majority of cases.

In situations where mental health treatment services are delayed or neglected altogether, multiple consequences can result. One of the most common consequences is worse outcomes (e.g., greater distress/dysfunction long-term) for mentally ill individuals, even if they decide to seek help at a later point (Dell'Osso, Glick, Baldwin, & Altamura, 2013; Boonstra et al., 2012). Researchers have identified associations between delayed help-seeking and multiple negative outcomes, including greater severity of symptoms at intake, decreased responses to treatment, and increased drop-out rates related to a variety of diagnoses (e.g., anxiety, depressive, and bipolar disorders and psychosis). Additionally, when suicidal ideations are part of an individual's mental health problems, delayed help-seeking is associated with an increase in suicidal behavior (Reynders, Kerkhof, Molenberghs, & Van Audenhove, 2014).

All of the of the aforementioned consequences relate back to infrequent psychological help-seeking behavior – a problem that generalizes to multiple care settings (e.g., primary care, counseling clinics; Komiti et al., 2006; Clement et al., 2015). The current study eschews narrow definitions of psychological help-seeking, such as those limited to a single care setting, and conceptualizes it as a broad category of health behavior, one that is categorically relevant to the predictive functions of the HBM. Before describing the main antecedent influences of psychological help-seeking, it will be necessary to outline the HBM and related literature to provide a framework to which the discussion of those factors can be applied.

Health Behavior Literature

In this section, the model of primary interest to the current manuscript, the HBM, and relevant research findings are explained, followed by discussion of how the HBM fits with other

relevant theories as they relate to help-seeking behavior. This section concludes with a discussion of the HBM's limitations identified in the literature as well as a description of variables and proposed hypotheses for the current study.

Overview of the Health Belief Model

The HBM is a health behavior model created to predict and explain participation in salutary health behaviors. The HBM was a major contributor to the initiation of health behavior research following its development in 1952 (Hochbaum, Rosenstock, & Kegels, 1952). The decision to create the model was based on the expertise of its three authors as well as the types of problems faced by the U.S. Public Health Service in the 1950's.

Public health sentiments were more worried about prevention of disease than its treatment (Hochbaum et al., 1952). Few concerns were given for participation or compliance with medical treatments. Instead, the developers of the HBM were preoccupied with the pervasive failure of individuals to take advantage of free or low-cost preventative interventions (e.g., medical screenings) for serious medical problems, such as tuberculosis, cervical cancer, and polio. The developers conducted large-scale studies in the 1950's and 1960's to test four variables of the HBM: 1) perceived severity, 2) perceived barriers, 3) perceived benefits, and perceived susceptibility of engaging in a given health-promoting behavior.

Perceived Severity. The HBM severity component indicates participation in health behavior will vary as a function of perceived severity of a negative health outcome (Carpenter, 2010). That is, severe distress and/or dysfunction are more likely to influence health-prompting behavior compared to milder problems. It is reasoned that individual with mild problems are more likely to endure or manage mild problems on their own, while serious problems are more likely to require professional assistance. For example, an individual experiencing mild anxiety

that is specific to one setting/topic (e.g., school) would be less likely to seek formal psychological help compared to someone experiencing high levels of distress about a variety of topics. This HBM component is consistently the smallest predictor of health behavior ($r = .08$; Carpenter, 2010; Orji et al., 2012). This finding is surprising since it seems unlikely that individuals with little-to no distress or dysfunction would be comparable to individuals with high amount regarding their likelihood to participate in health-related behavior.

Perceived Barriers. The HBM claims individuals will be less likely to adopt a healthy behavior when they perceive significant barriers related to that behavior (Carpenter, 2010). An individual may perceive the respective behavior as too time-consuming, costly, or embarrassing. In the case of psychological help-seeking, common perceived barriers include fear of discrimination, lack of insurance, or limitations related to availability of services. Researchers have shown effects of perceived barriers on various health behaviors ranging from small ($r = -.21$) to moderate ($r = -.42$; Carpenter, 2010; Orji et al., 2012).

Perceived Benefits. The HBM benefits component maintains people need to perceive participation in a health behavior as having positive advantages (Carpenter, 2010). Individuals will be more likely to engage in a health behavior if they believe doing so has noteworthy benefits. For example, if a depressed individual does not believe talking to a therapist will alleviate depressive symptoms, then he is less likely to pursue that option. Researchers have estimated small effects ($r = .08$ to $.13$) in the relationship between perceived benefits and a variety of health behaviors (Carpenter, 2010; Orji et al., 2012).

Summary of HBM Research

The HBM is one of the most popular models used in health research, and about 20% of theory-guided health behavior studies use the HBM (Painter, Borba, Hynes, Mays, & Glanz,

2008). Despite its relative popularity, application of the original four HBM components has been characterized by two major limitations: 1) the limited predictive capabilities of the individual HBM components and 2) the shortage of information about the mediating and moderating relationships between HBM components and other variables.

To address the first issue, researchers expanded the HBM to include two other variables, self-efficacy and cues to action (i.e., for a total of six HBM components), but the percentage of variance in health-related behavior explained by the HBM remained low to modest, with estimates ranging from 20%-40% (Carpenter, 2010; Conner & Norman, 1996; Eagly & Chaiken, 1993). In some cases, researchers succeeded at adding variables to increase the HBM's predictive strength, but these additions have been mostly limited to very specific health problems and behaviors (e.g., HIV prevention; Reece, 2003).

Regarding the second limitation, the general lack of understanding about the interactions between HBM components and related variables is based on the twofold difficulty of adequately accounting for a wide variety of health-related beliefs in a single model while using that model to effectively explain an equally diverse range of behaviors. The predictive abilities of HBM components may have noteworthy mediating and moderating effects that have not been adequately studied.

However, some researchers have begun to account for indirect relationships between HBM components and related variables. For example, Carpenter (2010) conducted a meta-analysis of 19 longitudinal studies and found some HBM components varied in their ability to predict physical health-related behaviors depending on the type of health behavior (i.e., treatment versus prevention behavior) and the time between measures of HBM components and behaviors.

However, investigation of these interactions has been limited. More research is needed to better understand the indirect effects of HBM components.

In the most notable exception to the both of the aforementioned limitations, Orji, Vassileva, and Mandryk (2012) investigated dietary eating behavior in a sample of 576 respondents using three HBM models, including the original four components of the HBM, a similar model with the addition of self-efficacy and cues to action (i.e., for a total of six components), and a third model with these six components plus four new variables: 1) consideration of future consequences of health behavior, 2) concern for physical appearance, 3) health-related self-identity, and 4) perceived importance of health-behavior.

Following their comparison of the original and expanded HMB models, Orji, Vassileva, and Mandryk (2012) found the expanded model explained significantly more variance (71%) in healthy eating behavior compared to the original HBM model (40%), an increase of approximately 78%. Additionally, multiple mediating and moderating effects were found between components of the expanded model, such as the mediating effect of perceived barriers on the relationship between self-efficacy and healthy eating.

These findings support a more effective model to account for possible rules of combination for variables used to predict behaviors related to physical health. However, little research has been conducted with the HBM and behaviors promoting mental health, especially psychological help-seeking. A limited number of studies have provided initial support the association between certain components of the HBM components and help seeking intentions (e.g., perceived benefits $r = .42$ to $.70$, perceived barriers $r = .21$ to $.27$; O'Connor, Martin, Weeks, & Ong, 2014; Langley, Wootton, & Grieve, 2018), but research is still needed to determine the effectiveness of the HBM for predicting psychological help-seeking behavior,

identify how certain health beliefs interact to predict help-seeking behavior, and clarify some inconsistent and unexpected findings in the literature (e.g., small effects of perceived severity HBM component; O'Connor, Martin, Weeks, & Ong, 2014; Langley, Wootton, & Grieve, 2018). Other than studies explicitly testing components of the HBM, some researchers have found support for variables resembling HBM components and help seeking intentions. For example, using a large sample of Australian adolescents and young adults ($n = 3,746$), Yap et al. (2011) found internal barriers of mental health help-seeking were inversely related to belief in the effectiveness of psychiatric treatment and intentions to seek help. Specific dimensions of internal barriers, such as perceptions of mental illness as weakness and social distance from individuals with mental illness, predicted whether participants would be more open to seeking help from a mental health professional or via close relationships.

The deterring effect of perceived barriers has also been supported among young people.

Using a quasi-experimental design, Wilson et al. (2008) found perceived barriers of mental health help-seeking was negatively related to help-seeking intentions in a sample of high school students. Students who participated in an educational intervention about the pathways to care and benefits of psychological services exhibited a decrease in perceived barriers and an increase in help-seeking intentions compared to students who did not receive the intervention. Additional research is needed to determine the effectiveness of the HBM for predicting psychological help-seeking behavior, to identify how certain health beliefs interact to predict help-seeking behavior, and to clarify some inconsistent and unexpected findings in the literature (e.g., small effects of perceived severity HBM component; O'Connor et al., 2014; Langley, Wootton, & Grieve, 2018).

Help-Seeking Barriers and Facilitators

External Help-Seeking Barriers

The prevalence of mental health problems underscores the need to identify and characterize the major deterring factors of help-seeking behavior. Multiple external deterrents of psychological help seeking are relevant to the HBM's perceived barriers component. Of the most common external barriers, high costs and/or insurance limitations are endorsed most frequently (Substance Abuse and Mental Health Services Administration, 2015). In 2016, about 9% of individuals in the U.S. were uninsured (Barnett & Vornovitsky, 2016). Of the 91% insured individuals, some will still have problems accessing services due to the differences in the quality of coverage between insurance agencies. These disparities have decreased since the Paul Wellstone and Pete Domenici Mental Health Parity and Addiction Equity Act was passed in 2008, but differences in coverage still exist, and many people are unaware of how the law relates to their insurance options.

In addition to overall insurance limitations, certain populations are disproportionately disadvantaged and, in many cases, these groups are those with the most urgent need for mental health services. For example, people with serious mental illness are more likely to live in poverty and are estimated to be about 40% less likely to have mental health insurance (Pearson et al., 2009; Vick, Jones, & Mitra, 2012; Rowan et al., 2013). More generally, lower SES individuals are less likely to be insured overall and disproportionately affected by insurance cost-sharing (Vick et al., 2012).

Individuals living in rural settings are another population disproportionately affected by poverty and lack of insurance, but are further restricted by an additional barrier: availability of services. Mental health services are relatively less common in rural versus urban areas (Ziller,

Anderson, & Coburn, 2010). Rural individuals are often required to travel long distances to access the services they need, making access especially problematic in cases where transportation is limited or work schedules overlap with the regular business hours of mental health clinics. These factors interact to create particularly disadvantageous circumstances for individuals from rural communities.

Mental Health Associated Stigma

Other than external barriers, many equally important deterrents of psychological help-seeking can be categorized as internal barriers in the HBM. Mental health stigma is arguably the most pernicious deterrent to psychological help-seeking. It can be defined as “a process involving labelling, separation, stereotype awareness, stereotype endorsement, prejudice, and discrimination in a context in which social, economic, or political power is exercised to the detriment of members of a social group” (Clement et al., 2015, p. 3). Two types of stigma have been investigated in the extant literature: public stigma and self-stigma (Vogel et al., 2007). Generally speaking, public stigma is an individual’s perception of others’ views that possessing certain characteristics is socially unacceptable. Self-stigma, also known as ‘internalized stigma’, is an individual’s perception of their self as socially unacceptable due to possessing stigmatized characteristics (e.g., depressive symptoms, psychosis). Both types of stigma can refer to processes of prejudice and discrimination related to mental illness or mental health help-seeking.

Regardless of the type, stigma can have potent effects on an individual’s perceptions and subsequent decision-making (Schnyder, Panczak, Groth, & Schultze-Lutter, 2017). While some groups may be affected more than others, the influence of stigma is widespread across social groups. This pervasiveness even extends to mental health professionals (Rüsch et al., 2005).

Some researchers have shown that mental health service providers endorse stigmatizing attitudes with a frequency comparable to lay populations.

The seriousness of stigma's prevalence seems even more concerning with consideration of its consequences. Greater self-stigma is associated with decreased self-efficacy/esteem, lower recovery orientation, elevated severity of psychiatric symptoms (Drapalski et al., 2013), poorer attitudes toward counseling services, and decreased willingness to seek psychological help (Vogel et al., 2007). Self-stigma plays a more active role in deterring help-seeking behavior because it directly affects individuals experiencing mental illness.

In contrast, public stigma can influence individuals with or without mental illness because it involves endorsing prejudiced beliefs about certain groups (e.g., people with depression, schizophrenia, anxiety) regardless of whether the individual holding the belief belongs to those groups (Rüsch et al., 2005). Public stigma is theorized as the source of self-stigmatizing attitudes, since such attitudes are typically adopted through observations of stigma in an individual's social environment (e.g., faulty media images, experiencing discriminatory acts), and the endorsing of prejudiced beliefs about a particular group is antecedent to self-directed attributions resulting from an individual's inclusion in that group. Researches have supported this conceptual chain by showing scores on scales of self-stigma mediate the relationship between public stigma and attitudes toward counseling services (Rüsch, et al., 2005).

Given the enabling role of public stigma on self-stigma, national trends in stigmatizing attitudes about mental health provide reason for concern. Compared to a mental health stigma survey in 1950, notions of dangerous were attributed to mental health individuals with over twice the frequency in a comparable U.S. sample from 1996 (Phelan, Link, Stueve, & Pescosolido, 2000). These attitude changes may differ depending on type of mental illness. Some researchers

have suggested certain diagnoses, like schizophrenia, may have worse public attitudes, while mood disorders may be becoming less stigmatized (Schomerus et al., 2012; Rüsçh, Angermeyer, & Corrigan, 2005). These trends highlight the need to acquire greater understanding of stigmatizing processes and their respective consequences.

Closely related to stigma, severity of mental health symptoms is another internal barrier of mental health help-seeking. The relationship between stigma and severity is supported by Livingston and Boyd's (2010) review of 45 studies measuring the relationship between stigma beliefs and multiple outcome variables. The authors found a moderate relationship between stigma and symptom severity ($r = .41$) as well as treatment adherence ($r = -.39$).

Moreover, HBM investigations of health-related behavior and intentions have repeatedly observed small or insignificant relationships between help-seeking behavior or intentions and perceived symptom severity (Orji et al., 2014; Carpenter et al., 2015; Langley et al 2018; O'Connor et al, 2014). These inconsistent findings may be explained by the relationship between perceived severity, stigma, and help-seeking, in which stigma may be confounding the association between severity and help-seeking, characterized by a U-shaped relationship between severity and help-seeking (Langley, 2018; Liu, et al., 2017).

Help-Seeking Facilitators

Contrary to barriers, help-seeking facilitators are factors that increase an individual's likelihood to seek help. Researchers identified two prominent facilitating factors: 1) positive experiences with seeking help (Gulliver, Griffiths, & Christensen, 2010), 2) mental health literacy (Yamaguchi, Mino, & Uddin, 2011), and self-efficacy (Orji et al., 2012).

Positive past experiences with mental health services is another facilitator of psychological help-seeking (Kuhl, Jarkon-Horlick, & Morrissey, 1997). It has been associated

with most positive attitudes toward seeking help from a counselor, greater intent to seek help, and anticipation of more benefits from counseling services (Vogel & Wester, 2003). In their systematic review of perceived help-seeking barriers and facilitators, Gulliver et al. (2010) found positive past experiences with help-seeking were consistently associated with increased help-seeking behavior and intentions in multiple samples of adolescents. These researchers suggest the effect of positive past experiences on help-seeking may involve a mental health literacy element. That is, positive past experiences might increase mental health literacy by improving an individual's awareness of mental health services firsthand, which may partially explain the positive relationship between positive past experiences and psychological help seeking intentions and behavior.

Other forms of increasing mental health literacy have been found to improve attitudes about mental illness and psychological help-seeking (Jorm et al., 2003; Yamaguchi, Mino, & Uddin, 2011). Mental health literacy can be defined as the extent an individual possesses accurate knowledge about common mental illnesses and the means of effective treatment (Jorm, et al., 2000). Programs aimed at increasing mental health literacy among young people and community samples have shown reduced stigmatizing attitudes towards people with mental illness and help-seeking following educational interventions about mental health and its treatment (Jorm et al., 2003; Yamaguchi, Mino, & Uddin, 2011).

The third facilitator, self-efficacy, has been one the strongest HBM predictors of physical health help-seeking behavior ($\beta = .40$; Orji et al., 2012). In mental health research, limited evidence suggests small to moderate effect sizes for help-seeking intentions and self-efficacy among children and adolescents, with the largest effects found among adolescents ($\beta = .22$ to $.55$; Garland & Zigler, 1994). For adult populations, a moderate effect has been reported

between awareness of mental health stereotypes and general self-efficacy (Corrigan, 2004), but no significant relationships have been reported between general self-efficacy and mental health help-seeking intentions or behavior (Langley et al., 2018).

Several of the aforementioned facilitators of help-seeking are relevant to the HBM and the current study. For example, the concept of mental health literacy relates to the HBM's component of perceived benefits while social influences, such as referrals, relate to the cues to action component. However, a more detailed account is needed to tie explain the relations of these variables to each other and provide a basis for their subsequent investigation. The following sections integrate and explain variables related to help-seeking by drawing upon two theories related to health behavior and beliefs: Social Cognitive Theory and the Wed of Belief Theory.

Health Behavior and Social Cognitive Theory

The following section describes the role of Social Cognitive Theory (SCT) for explaining the acquisition and maintenance of health-related behavior in general and psychological help-seeking in particular (Bandura, 1977). SCT has multiple explanatory implications related to the HBM, especially latter version of the HBM. At its basis, SCT proposes a triadic model of reciprocal causation between individuals and their environments, whereby individuals acquire knowledge by observing their environment (e.g., social interactions, media influences) and that knowledge is subsequently used to influence and navigate within their environment (Schwarzer & Luszczynska, 2005). That is, individuals do not learn solely through the reinforcement and punishment of their own behaviors, but rather, as social creatures, a large portion of human knowledge is dependent on observing others.

SCT postulates that self-efficacy is crucial for determining whether knowledge acquired from the environment results in new behavior (Schwarzer & Luszczynska, 2005). In doing so, the SCT triadic model postulates self-efficacy individual perceptions of outcome expectations and sociocultural factors, which interact to produce goals and behaviors. In this model, self-efficacy also influences the likelihood that goals lead to relevant behaviors. An example of this model can be found in Appendix B.

The SCT is especially relevant to many types of health-related behaviors since, in many cases, individuals do not have the opportunity to be guided by the rewards and costs of participating or failing to participate in relevant behaviors (Schwarzer & Luszczynska, 2005). For example, an individual denied all access to social knowledge about mental health behavior is unlikely to arrive via their own rational faculties at the conclusion that habituation interventions are effective at treating phobias or that medications can clinically attenuate the positive symptoms of schizophrenia. Therefore, most health behaviors would never occur without relevant sources of social knowledge.

When applied to help-seeking and the HMB, SCT would maintain that the majority of the beliefs accounted for in the HBM are derived from observations in our social environment, including those that promote or deter help-seeking behavior. Prominent examples of this claim can be noted in the perceived benefit and barriers (i.e., especially internal barriers) components of the HBM as they relate to psychological help-seeking. Knowledge related to the benefits of mental health treatments, such as counseling or psychotropic medication, would be difficult, if not impossible, to obtain without sources of information like hearing about other's experiences with counseling, reading about it in textbooks, or viewing examples from movies or television shows. In absence of information from the social environment, the acquisition of knowledge

about the benefits of certain help seeking behavior would be entirely dependent unlikely causes, such as participating in therapy out of curiosity or taking psychotropic medication out of by accident.

Regarding the barriers component of the HBM, the internal barrier of mental illness self-stigma is entirely dependent on the adoption and internalization of others' prejudiced appraisals (i.e., via public stigma) of individuals with mental illness and psychological help-seeking. The adoption of the prejudiced beliefs that underpin stigma cannot be divorced from processes of social learning since, even in cases where individuals acquire such beliefs from directly observing mentally ill people, the observed parties are also part of the social environment.

Summary and Conclusion

The problem with low rates of psychological help-seeking is a complicated issue, one with serious consequences for public health, including rates of distress and dysfunction. The fallout of this problem is especially detrimental for certain vulnerable populations, including some minority groups, youth, and individuals of lower SES. Researchers have identified multiple deterring and facilitating factors of help-seeking, such as mental illness stigma and lack of insurance coverage, but more research is needed to understand these influences and how they interact to predict help-seeking behavior.

The HBM is one possible tool for gaining further insights into the problem with psychological help-seeking (Hochbaum et al., 1952). Since its development, the ongoing testing and refinement of the HBM has improved its accuracy for predicting multiple behaviors related to physical health (Orji et al., 2012). However, limited research has been conducted to use the HBM to predict behaviors related to mental health, such as psychological help-seeking behavior (O'Connor, Martin, Weeks, & Ong, 2014; Langley, Wootton, & Grieve, 2018). Although research

on this subject is still in nascence, extant studies have inherited some of the same limitations and unexpected findings of prior HBM research. Some of these issues include the small effects of the perceived severity component on mental health help-seeking as well as limited consideration among researchers for interactions between health beliefs as predictors of help-seeking.

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Appendix B

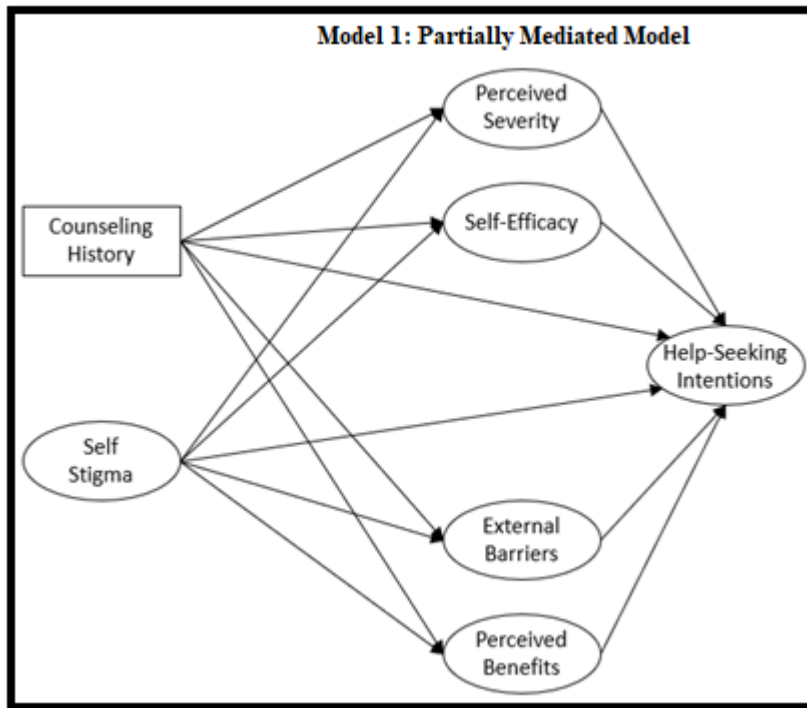


Figure 1. Partially model (Model 1).

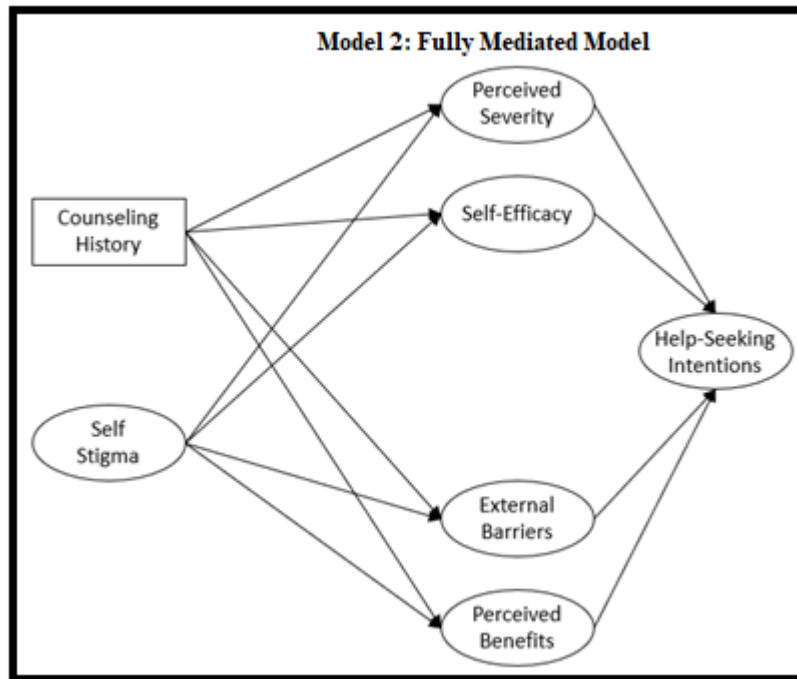


Figure 2. Fully mediated model (Model 2).

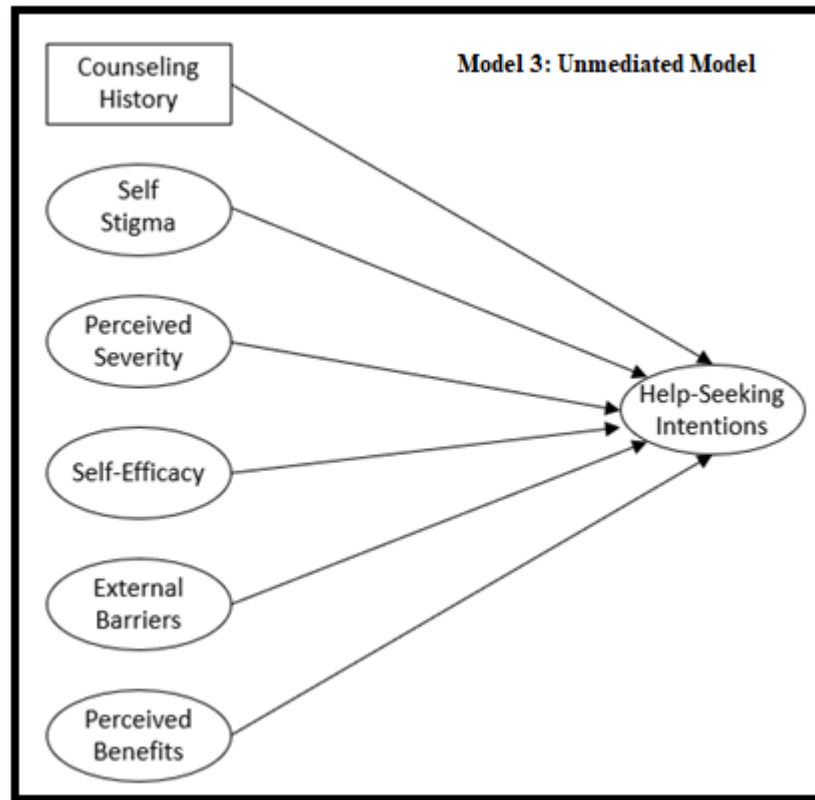


Figure 3. Unmediated model (Model 3).

Appendix C: Results for Alternate Models

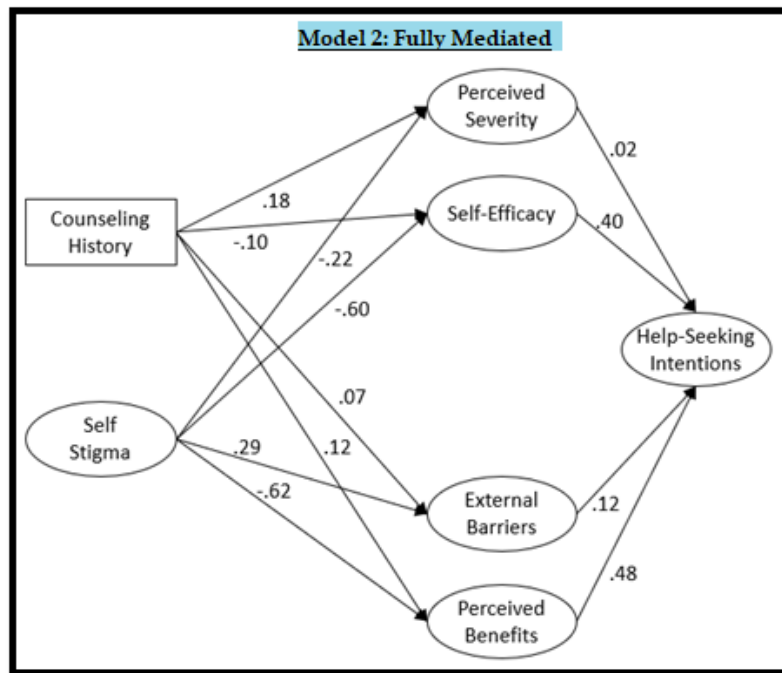


Figure 5. Model 2: Fully Mediated Model.

Table 11

Fully Mediated Model Standardized Direct Effects, Total Effects, Indirect Effects, Correlations, Lower Bounds, Upper Bounds, and Significance

Direct Effects			Estimate	Lower	Upper	P
Perceived Severity	<---	Self-Stigma	-.224	-.320	-.113	.000
Self Efficacy	<---	Self-Stigma	-.596	-.679	-.492	.000
External Barriers	<---	Self-Stigma	.291	.178	.397	.000
Perceived Benefits	<---	Self-Stigma	-.618	-.730	-.501	.000
Self Efficacy	<---	Counseling History	-.097	-.191	.002	.053
Perceived Severity	<---	Counseling History	.176	.071	.280	.001
External Barriers	<---	Counseling History	.070	-.031	.168	.182
Perceived Benefits	<---	Counseling History	.121	.018	.233	.023
Help Seeking Intent	<---	Perceived Benefits	.480	.318	.684	.000
Help Seeking Intent	<---	External Barriers	.121	.019	.226	.022
Help Seeking Intent	<---	Self-Efficacy	.403	.215	.557	.000
Help Seeking Intent	<---	Perceived Severity	.024	-.083	.128	.631
Total Effects						
Help Seeking Intent	<---	Self-Stigma	-.507	-.623	-.403	.000
Help Seeking Intent	<---	Counseling History	.135	.062	.227	.000
Indirect Effects						
Help Seeking Intent	<---	Self-Stigma	-.507	-.623	-.403	.000
Help Seeking Intent	<---	Counseling History	.135	.062	.227	.000
Correlations						
External Barriers	<-->	Perceived Benefits	.127	.002	.246	.043
External Barriers	<-->	Self Efficacy	-.164	-.280	-.048	.010
Perceived Benefits	<-->	Self Efficacy	.103	-.046	.247	.159
Perceived Benefits	<-->	Perceived Severity	-.197	-.343	-.057	.006
Self Efficacy	<-->	Perceived Severity	.095	-.023	.216	.113
External Barriers	<-->	Perceived Severity	-.144	-.259	-.035	.013

Note. Lower and upper bounds are based on a 95% confidence interval.

Table 12

Fully Mediated Model Specific Indirect Direct Effects, Lower Bounds, Upper Bounds, and Significance

Endogenous variable		Mediator		Exogenous variable	Estimate	Lower	Upper	<i>P</i>
Help Seeking Intent	<---	Perceived Severity	<---	Counseling History	-.005	-.029	.019	.553
Help Seeking Intent	<---	Self-efficacy	<---	Counseling History	.046	-.005	.124	.082
Help Seeking Intent	<---	Perceived Barriers	<---	Counseling History	.022	.001	.064	.026
Help Seeking Intent	<---	Perceived Benefits	<---	Counseling History	.012	-.048	.101	.707
Help Seeking Intent	<---	Perceived Severity	<---	Self-Stigma	-.007	-.041	.024	.640
Help Seeking Intent	<---	Self-efficacy	<---	Self-Stigma	-.313	-.477	-.173	.000
Help Seeking Intent	<---	Perceived Barriers	<---	Self-Stigma	.046	.009	.095	.016
Help Seeking Intent	<---	Perceived Benefits	<---	Self-Stigma	-.386	-.668	-.204	.000

Note. Lower and upper bounds are based on a 95% confidence interval.

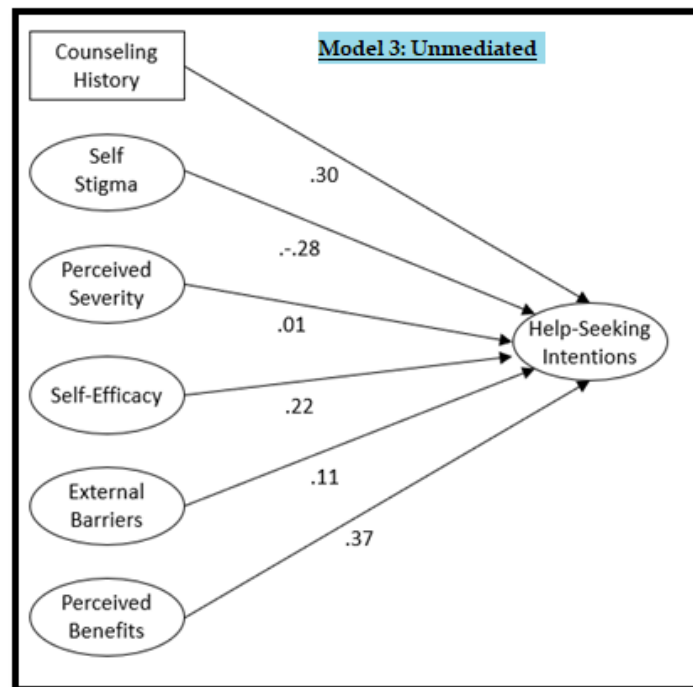


Figure 6. Unmediated model (Model 3)

Table 13

Unmediated Model Standardized Direct Effects, Correlations, Lower Bounds, Upper Bounds, and Significance

Direct Effects			Estimate	Lower	Upper	P
Help Seeking Intent	<---	Perceived Benefits	.374	.219	.577	.000
Help Seeking Intent	<---	External Barriers	.108	.019	.197	.019
Help Seeking Intent	<---	Self Efficacy	.222	.085	.364	.002
Help Seeking Intent	<---	Perceived Severity	.013	-.094	.113	.814
Help Seeking Intent	<---	Internalized Stigma	-.282	-.445	-.117	.002
Help Seeking Intent	<---	Counseling History	.295	.211	.381	.000
Correlations						
Perceived Severity	<-->	Internalized Stigma	-.234	-.331	-.138	.000
Self Efficacy	<-->	Internalized Stigma	-.602	-.676	-.507	.001
External Barriers	<-->	Internalized Stigma	.238	.131	.345	.000
Perceived Benefits	<-->	Internalized Stigma	-.552	-.663	-.429	.001
Self Efficacy	<-->	Perceived Severity	.189	.084	.288	.001
External Barriers	<-->	Perceived Severity	-.205	-.319	-.099	.001
Perceived Benefits	<-->	Perceived Severity	-.022	-.129	.088	.723
External Barriers	<-->	Self Efficacy	-.283	-.377	-.176	.001
Perceived Benefits	<-->	Self Efficacy	.452	.341	.560	.000
Perceived Benefits	<-->	External Barriers	-.075	-.178	.033	.164

Note. Lower and upper bounds are based on a 95% confidence interval.

Appendix D: Measures

Demographic Questionnaire

The following information is assessed in the demographic questionnaire.

Type of information	Response options
1 Gender	Male, female, other: _____
2 Age	Number: _____.
3 Race/ethnicity	Asian, Black, Caucasian, Hispanic/Latinx, Native American, Pacific Islander, Other _____.
4 Marital status	Single, divorced, married, widowed.
5 Currently enrolled in a university	Not a student, undergraduate student, graduate student.
6 Currently enrolled at Ball State University	Yes, no.
7 Highest degree earned	Less than a high school diploma, high school graduate, some college, professional certificate, associate degree, bachelor's degree, master's degree, doctoral degree.
8 Prior career counseling experience	Yes, no.
9 Prior personal counseling experience	Yes, no.
10 Overall satisfaction with prior counseling experience	1 = very unsatisfied, 2 = unsatisfied, 3 = neutral, 4 = satisfied, 5 = very satisfied.
11 Annual household income	\$0-\$24,999; \$25,000-\$49,999; \$50-\$74,999; \$75,000-\$99,999; \$100,000+
12 Number of household members	Number: _____.
13 Primary email address	Open response: _____.
14 Complete mailing address	Open response: _____.

Table 14. Demographic Questionnaire.

Self-Stigma of Seeking Help Scale

Instructions:

Please read each statement carefully and rate how much you agree or disagree with it.

Response Options: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree

- 1 I would feel inadequate if I went to a therapist for psychological help.
- 2 My self-confidence would NOT be threatened if I sought professional help.*
- 3 Seeking psychological help would make me feel less intelligent.
- 4 My self-esteem would increase if I talked to a therapist.*
- 5 My view of myself would not change just because I made the choice to see a therapist.
- 6 It would make me feel inferior to ask a therapist for help.
- 7 I would feel okay about myself if I made the choice to seek professional help.*
- 8 If I went to a therapist, I would be less satisfied with myself.
- 9 My self-confidence would remain the same if I sought help for a problem I could not solve.*
- 10 I would feel worse about myself if I could not solve my own problems.

Table 15. SSOSH Scale.

MHBMA Perceived Severity Scale

Instructions:

Imagine you are currently having a mental health problem. By mental health problem, we mean any behavioral or emotional issue that may affect your life. While thinking about that situation, please read each statement carefully and rate how much you agree or disagree with it.

Response Options: Strongly Disagree, Disagree, Neither Agree Nor Disagree, Agree, Strongly Agree

#	Stem
1	Having a mental health problem would change my feelings about myself.
2	Having a mental health problem would result in serious consequences.
3	Having a mental health problem would negatively affect my day to day life.
4	Having a mental health problem would negatively affect my family.
5	Having a mental health problem would negatively affect my social life.
6	Having a mental health problem would negatively affect my work.
7	Having a mental health problem would change my whole life.
8	Having a mental health problem would make completing daily activities more difficult.
9	The consequences of experiencing a mental health problem would last a long time.
10	Having a mental health problem would hurt my relationship with a significant other.
11	Having a mental health problem would endanger my work or education.

Table 16.. MHBMA Perceived Severity Scale.

Barriers to Access Care Evaluation Scale**Instructions:**

Please read each statement carefully and rate how much you agree or disagree with whether the following circumstances would make it hard for you if you decided to seek therapy/counseling for a mental health problem.

Response Options: Strongly Disagree, Disagree, Neither Agree Nor Disagree, Agree, Strongly Agree

#	Stem
1	Being unsure where to go to get professional care.
2	Problems with transport or travelling to appointments.
3	Being unhappy with the available services.
4	Preferring to get alternative forms of care (e.g. spiritual care, non-Western healing / medicine, complementary therapies).
5	Not being able to afford the financial costs involved.
6	Professionals from my own ethnic or cultural group not being available.
7	Having no one who could come to appointments with me.
8	Lack of trust in professionals who provide professional care for mental health problems.
9	Having had previous bad experiences with professional care for mental health.
10	Thinking appointments take too much time or are inconvenient.
11	Having problems with childcare while I receive professional care.
12	Having no one who could help me get professional care.
13	Concerns about the confidentiality of the information I share.

Table 17. Barriers to Access to Care Evaluation scale.

Self-Efficacy in Seeking Mental Health Care (SE-SMHC)**Instructions:**

Below are several statements about your confidence in your ability to seek mental health care if you ever needed it. For each statement, rate how confident you are from 1 = no confidence to 10 = complete confidence in your ability to do each behavior. There are no right or wrong answers. We are interested in how you see yourself and your own abilities.

	No confidence									Complete confidence	
	1	2	3	4	5	6	7	8	9	10	
1 Find a place to get mental health treatment.	1	2	3	4	5	6	7	8	9	10	
2 Get transportation to a mental health care service.	1	2	3	4	5	6	7	8	9	10	
3 Clearly tell the staff what is troubling me.	1	2	3	4	5	6	7	8	9	10	
4 Understand the information given to me by the staff.	1	2	3	4	5	6	7	8	9	10	
5 Be able to follow the treatment recommendations made by the staff.	1	2	3	4	5	6	7	8	9	10	
6 Cope well with the consequences of seeking care (for example, treatments, tests, hospitalizations)	1	2	3	4	5	6	7	8	9	10	
7 Cope well with my family and friends reactions to me seeking mental health treatment.	1	2	3	4	5	6	7	8	9	10	
8 Cope well with the attitudes that the staff may have towards me.	1	2	3	4	5	6	7	8	9	10	
9 Overcome any embarrassment I may have about seeking mental health treatment.	1	2	3	4	5	6	7	8	9	10	

Table 18. Self-Efficacy in Seeking Mental Health Care inventory and instructions.

MHBMA Perceived Benefits Scale

Instructions:

Imagine you are currently having a mental health problem. By mental health problem, we mean any behavioral or emotional issue that may affect your life. Below are statements about going to therapy for a mental health problem. By therapy, we mean talking about a mental health problem with a mental health professional, such as a psychiatrist, psychologist, social worker, or counselor. Similarly, a therapist is a general term for any mental health professional. Please read each statement carefully and rate how much you agree or disagree with it.

Response Options: Strongly Disagree, Disagree, Neither Agree Nor Disagree, Agree, Strongly Agree

- 1 Going to therapy can provide me with an outlet to talk about issues that are bothering me.
- 2 I have a lot to gain by going to therapy when I need it.
- 3 Going to therapy can help me feel better emotionally.
- 4 Going to therapy can help me change things in my life for the better.
- 5 Going to therapy can help me cope with a mental health problem.

Table 19. MHBMA Perceived Benefits Scale.

Beliefs About Psychological Services Scale

Instructions:

Please rate the following statements using the scale provided. Place your ratings to the left of each statement by recording the number that most accurately reflects your attitudes and beliefs about seeking psychological services. There are no “wrong” answers, just rate the statements as you honestly feel or believe. It is important that you answer every item.

Response options: Strongly Disagree, Somewhat Disagree, Slightly Disagree, Slightly Agree, Somewhat Agree, Strongly Agree

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Stem

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1. If a good friend asked my advice about a serious problem, I would recommend that he/she see a psychologist.
 2. I would be willing to confide my intimate concerns to a psychologist.
 3. Seeing a psychologist is helpful when you are going through a difficult time in your life.
 4. At some future time, I might want to see a psychologist.
 5. I would feel uneasy going to a psychologist because of what some people might think.
 6. If I believed I were having a serious problem, my first inclination would be to see a psychologist.
 7. Because of their training, psychologists can help you find solutions to your problems.
 8. Going to a psychologist means that I am a weak person.
 9. Psychologists are good to talk to because they do not blame you for the mistakes you have made.
 10. Having received help from a psychologist stigmatizes a person's life.
 11. There are certain problems that should not be discussed with a stranger such as a psychologist.
 12. I would see a psychologist if I were worried or upset for a long period of time.
 13. Psychologists make people feel that they cannot deal with their problems.
 14. It is good to talk to someone like a psychologist because everything you say is confidential.
 15. Talking about problems with a psychologist strikes me as a poor way to get rid of emotional conflicts.
 16. Psychologists provide valuable advice because of their knowledge about human behavior.
 17. It is difficult to talk about personal issues with highly educated people such as psychologists.
 18. If I thought I needed psychological help, I would get this help no matter who knew I was receiving assistance.
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Table 20. Beliefs About Psychological Services scale and instructions.

Bogus Items

Instructions:

Please read each statement carefully. Indicate “yes” for statements that are true for you.

Indicate “no” for statements that are not true for you.

Response Options: Yes, No.

1. I am using an electronic device to take this survey.
 2. I have been to every country in the world.
 3. I am able to read and understand English.
 4. I have never brushed my teeth.
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Table 21. Bogus items and instructions.

Appendix E: Informed Consent

Study Title: The effect of self-stigma on mental health help-seeking and the mediating role of health beliefs

IRB Net 1544204

Study Purpose and Rationale

This purpose of this study is to examine the relationships between people's beliefs and attitudes about mental health services. Prior research has found that certain beliefs about mental health services can affect decisions to refrain from or seek out mental health treatment services. This study aims to better understand beliefs that can influence whether people seek out mental health services when they are needed.

Inclusion/Exclusion Criteria

To be eligible to participate in this study you must be at least 18 years old.

Participation Procedures and Duration

Participation involves completing a computer-administered questionnaire. The questionnaire is estimated to take about 10 to 20 minutes to complete.

Data Confidentiality

All data will be maintained as confidential and no identifying information such as names will appear in any publication or presentation of the data.

Storage of Data and Data Retention Period

Data collected will be stored and maintained by the primary investigator on a password protected computer. Only the primary investigator will have access to the password protected computer. All data will be deleted from the computer after the study is completed or by July of 2021, whichever comes sooner.

Risks or Discomforts

Some questions may potentially make respondents reflect on their own experiences or close others' experiences with mental illness and may subsequently experience mild emotional discomfort while completing the questionnaire.

Who to Contact Should You Experience Any Negative Effects from Participating in this Study

If you are a Ball State student: University Counseling Center Contact the Counseling Center at 765-285-1736 or stop by Lucina Hall, Room 320 between 8:00 a.m. and 5:00 p.m., Monday through Friday.

If you are not a Ball State student: Please contact your Primary Care Physician or General Practitioner, your established mental health care provider, or contact the SAMHSA Behavioral Health National Help Line at 1-800-662-HELP (4357) 1-800-487-4889 (TTY) for Free and confidential information in English and Spanish for individuals and family members facing substance use and mental health issues, 24 hours a day, 7 days a week.

Benefits

Participants may gain new insight into their mental health beliefs and their possible need for consultation with a mental health care provider.

(Note: If there is no perceived benefit to the person for participating in the study, then it is safe to say “There are no perceived benefits for participating in this study”)

Voluntary Participation

Your participation in this study is completely voluntary and you are free to withdraw your permission at anytime for any reason without penalty or prejudice from the investigator. Please feel free to ask any questions of the investigator before signing this form and at any time during the study.

IRB Contact Information

For questions about your rights as a research subject, please contact the Office of Research Integrity, Ball State University, Muncie, IN 47306, (765) 285-5052 or at orihelp@bsu.edu.

Study Title: The effect of self-stigma on mental health help-seeking and the mediating role of health beliefs

Researcher Contact Information

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Consent

By clicking “accept” below you agree to participate in this research project entitled, Mental Health Beliefs, Attitudes, and Knowledge, I have had the study explained to me and my questions have been answered to my satisfaction. I have read the description of this

project and give my consent to participate. I understand that I can receive a copy of this informed consent form to keep for future reference by contacting the primary investigator (above).

To the best of my knowledge, I meet the inclusion/exclusion criteria for participation (described above) in this study.