Approval Sheet

Title of Dissertation: Efficacy of Mental Health Interventions on College Students' Help-Seeking Attitudes

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Abstract

Title: EFFICACY OF MENTAL HEALTH
                                          INTERVENTIONS ON COLLEGE
                                          STUDENTS' HELP-SEEKING ATTITUDES

                                          Eryn Bentley Kruger, Ph.D., 2019

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Many college students suffering from mental illness in the United States do not seek

appropriate mental health care, even though treatment is known to have positive effects

on functioning and wellbeing (Blanco et al., 2008). Mental illness stigma is considered an

important barrier to emerging adults' help-seeking. Recent mental health interventions

aimed at increasing the use of mental health services have been designed to reduce the

stigma associated with help-seeking. Many of these efforts, however, have not focused

specifically on interventions for a college campus, nor targeted the interventions for this

audience. The current study examined the efficacy, in terms of reducing stigma and

influencing help-seeking attitudes and intentions, of a targeted mental health intervention

for college students, compared to an existing non-stigma focused mental health

intervention. One hundred and twenty-nine college students at University of Maryland,

Baltimore County participated in one of two mental health interventions: (1) Targeted

Mental Health workshop (TMH): contact video featuring college students speaking about

their mental illnesses followed by a facilitated group discussion, (2) Usual Care

workshop (UC): information on stress and anxiety as well as campus resources for

counseling. Overall, both workshops appeared to improve help-seeking attitudes and intentions (though TMH had a larger effect, *partial* η^2 = .38, compared to UC, *partial* η^2 = .11) and decrease social stigma, immediately post-test, although the workshops did not appear to have lasting effects at the follow-up. Results suggest that both the educational approach of the UC workshop and the targeted contact approach of the TMH workshop may be effective in changing immediate attitudes in a college student population.

EFFICACY OF MENTAL HEALTH INTERVENTIONS ON COLLEGE STUDENTS'
HELP-SEEKING ATTITUDES

By

Eryn Bentley Kruger

Dissertation submitted to the Faculty of the Graduate School of the
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Introduction

Mental Health Care

  Challenges on college campuses. Mental disorders are highly prevalent among college students, and these disorders appear to be increasing in severity and number (Blanco et al., 2008). According to the American College Health Association's National College Health assessment, almost half of all college students meet criteria for a mental disorder, and most lifetime mental disorders have first onset by age 24 (American College Health Association, 2015; Kessler et al., 2005). Mental disorders account for more disability-adjusted life-years lost than any other class of conditions among late adolescents and emerging adults in the United States (Eisenberg, Hunt, & Speer, 2012). Untreated mental illness may have significant implications on academic, occupational and social outcomes. Treatment can help, with research suggesting that early and effective treatment may offer substantial long-term benefits (Breslau, Lane, Sampson, & Kessler, 2008; Kessler, Walters, & Forthofer, 1998).

  College campuses are well-positioned to have a positive impact on mental health during the college years through their array of interconnected resources. The majority of college students with mental disorders, however, are not seeking treatment (Blanco et al., 2008). In a college-campus survey, researchers found that only a third of students reported having adequate knowledge about on-campus mental health services (Yorgason, Linville, & Zitzman, 2008). Another survey found that 37 to 84 percent (depending on the disorder) of college students who reported psychological symptoms were not receiving services (Eisenberg, Golberstein, & Gollust, 2007). Of further concern is the

finding that only 20 percent of students who report suicidal ideation have ever sought assistance (Furr, Westefeld, McConnell, & Jenkins, 2001). There is substantial evidence suggesting unmet needs for treatment among college students with mental health problems in the United States.

Despite these unmet needs, there is empirical evidence to support the benefits and effectiveness of psychotherapy. Meta-analyses throughout the years have found that on average, therapy clients reported 75 percent higher quality of life than untreated individuals (Lambert & Bergin, 1994; Seligman, 1995; Shadish et al., 1997). Furthermore, studies have confirmed the effectiveness of psychotherapy in treating various clinical issues in emerging adults such as depression (Cuijpers, van Straten, Anderson, & van Oppen, 2008), obsessive-compulsive disorder (Abramowitz, 1997), and social phobia (Taylor, 1996). Research suggests that receiving mental health services leads to a more positive self-image, more satisfying relationships with friends and community, and reduction in general distressing feelings (Beutler, 2007; Satcher, 2000). These services are believed to be even more efficacious when treatment is sought early in the presentation of a problem (Costello, 2016). Given the toll mental illness can take on emerging adults, and the known effectiveness of psychotherapy, it is important to understand the barriers that prevent this population from seeking mental health services.

Barriers to receiving treatment. Although the quality and effectiveness of mental health treatment has greatly improved over the past 20 years, many barriers to seeking adequate mental health care still exist today (Corrigan, 2004). Some of these barriers are external, in which even after an individual decides that mental health services would be desirable, there are constraints on service consumption (Kushner & Sher,

1991). These external barriers can include lack of service access through both availability and affordability. Low levels of awareness of resources for mental health care and lack of education on the importance of treatment have also been cited as barriers to help-seeking (Leaf, Bruce, Tischler, & Holzer, 1987; Yorgason et al., 2008).

Attitudes towards care also serve as an important barrier. In a study that included emerging adults from Canada, the United States, and the Netherlands, public attitudes were identified as the main barrier to mental health services (Sareen et al., 2007). Some examples of the attitudinal barriers identified in this study were the belief the problem would go away on its own, skepticism of the effectiveness of professional help, the intention to solve the problem on one's own, and a fear of public stigma (Sareen et al., 2007). These various attitudinal factors are thought to act as intervening variables between the recognition of distressing psychological problems and an individual's decision to seek help.

Some of the main barriers to help-seeking among college students in the United States are a lack of perceived need, being unaware of services or insurance coverage, and skepticism about treatment effectiveness (Eisenberg et al., 2007; Yorgason et al., 2008). In one study, students reported they were aware of the student counseling center, yet saw the counseling center as a place for only crisis-intervention service (Kahn, Wood, & Wiesen, 1999). It may be that many students have an inaccurate understanding of the mental health services available on campus. Other research suggests some college students have a fear of emotionally focused discussions and believe therapy will force upon them unwanted disclosure (Cepeda-Benito & Short, 1998). Additionally, college students have reported therapy causes an experience of painful feelings that many would

rather avoid (Komiya, Good, & Sherrod, 2000). A recent review found that college

students contemplating help-seeking reported concerns regarding lack of understanding

and losing respect from peers which results in their own feelings of blame and guilt

(Coleman, Stevelink, Hatch, Denny, & Greenberg, 2017). Other attitudinal barriers

reported by students are being embarrassed, not believing treatment would be effective,

being frightened or nervous, concerns about confidentiality, or believing one's own

approaches to problem solving would be more efficient (Clement et al., 2015; Gulliver,

Griffiths, & Christensen, 2010; Schnyder, Panczak, Groth, & Schultze-Lutter, 2017;

Yorgason et al., 2008).

Although many external and attitudinal factors exist as barriers to mental health

services, the most frequently cited reason for why emerging adults do not seek mental

health services is the stigma associated with mental illness and treatment seeking

(Corrigan, 2004; Schnyder et al., 2017). In an influential meta-analysis exploring

psychological factors in attitudes toward seeking mental health services, Nam and

colleagues found a large effect size for stigma ($r = -.63$; Nam et al., 2013). Stigma was

the largest effect size of the psychological factors explored, followed by anticipated

benefits, self-disclosure, self-concealment, social support, risk, depression, and distress

(Nam et al., 2013). Findings from this meta-analysis suggest that mental health stigma is

pervasive and prevalent, and a primary barrier for help-seeking.

Stigma's impact on help-seeking. It is useful to distinguish between types of

stigma, such as public stigma (negative attitudes held by others) and self-stigma

(applying negative attitudes towards oneself; Corrigan, 2004). Research suggests in

emerging adults, these forms of stigma interact, with perceptions of public stigma

influencing self-stigma, which then influences attitudes and behaviors (Corrigan, Watson, & Barr, 2006). Specifically, an individual becomes aware of public stigma, forms personal attitudes that may or may not concur with the perceived stigma, and then determines whether or not to apply these stigmatizing attitudes to the self. Research has shown that individuals internalize negative perceptions when dealing with mental health concerns and that being labeled "mentally ill," or even being identified as a person in therapy, can lead to lower self-esteem (Gulliver et al., 2010; Link & Phelan, 2006; Link, Struening, Neese-Todd, Asmussen, & Phelan, 2001). Help-seeking is often viewed as a threat to one's self-esteem as help-seeking from another can be internalized as inadequacy or inferiority; this may lead an individual to decide not to seek help, even when experiencing psychological distress (Coleman et al., 2017). Research indicates that people tend to hide psychological concerns and avoid treatment to reduce the perceived detrimental consequences linked with public stigma towards help-seeking (Clement et al., 2015; Corrigan & Matthews, 2003).

Stigma can also help explain why help-seeking is lower among certain types of students. Research has found that self-stigma is higher, and help-seeking is lower among men, Asians, and students who reported growing up in poverty (Eisenberg et al., 2012). Another study of undergraduate psychology students at a large public university found that self-stigma was higher among Blacks and Asians compared to Whites (Masuda et al., 2009). College students experiencing suicidal ideation have reported not disclosing suicidal thoughts due to fear of being stigmatized or judged, not wanting to burden others, and fear of consequences such as expulsion from school or forced hospitalization (Eisenberg et al., 2012). Additionally, students have commonly cited concern regarding

how disclosure of receiving therapy could have a negative impact on future employment and academic record (Clement et al., 2015; Givens & Tjia, 2002).

Help-Seeking Behaviors and Theory of Reasoned Action (TRA)

Researchers have applied Ajzen and Fishbein's (1980) Theory of Reasoned Action (TRA) to understand the process of help-seeking behavior (Vogel, Wade, Wester, Larson, & Hackler, 2007; Vogel, Wester, & Larson, 2007; Vogel, Wester, Wei, & Boysen, 2005). TRA is based on the assumption that behavior is best predicted by the intention to perform the behavior (Fishbein & Ajzen, 1975). TRA is conceptualized through relations among beliefs, attitudes, intentions, and behavior (Fishbein & Ajzen, 1975). Although many factors may influence a behavioral intention, intentions are generally mediated by both the attitude toward the behavior and the subjective norm for the behavior (see Figure 1 for illustration). TRA has provided a framework for why individuals engage in a variety of behaviors, such as alcohol and drug use (e.g., Guo et al., 2007), exercise (e.g., Downs & Hausenblas, 2005), condom use (e.g., Beadnell et al., 2008), and seeking prostate cancer information (Ross, Kohler, Grimley, & Anderson-Lewis, 2007). Previous studies have explored the fit of the TRA model in understanding an individual's help-seeking behaviors (e.g., Vogel et al., 2005). Attitudes towards psychotherapy was found to play an important role in mediating psychological factors (e.g., stigma, self-disclosure, anticipated benefits, subjective norm, social support, and previous therapy experience) that are relevant to the intention to seek mental health services (Vogel et al., 2005).
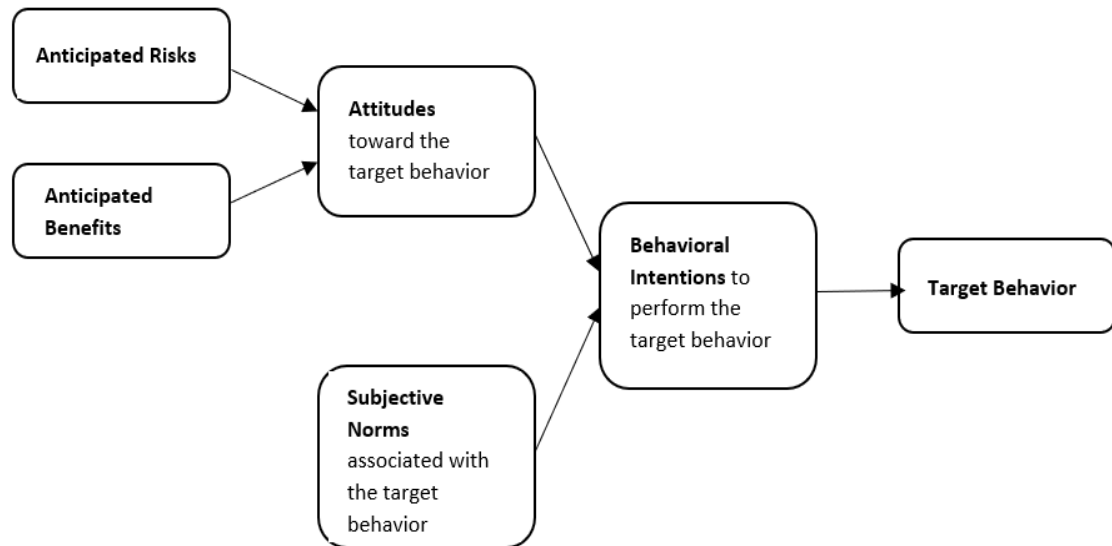
Figure 1. Theory of Reasoned Action

Based on TRA, behavior is ultimately determined by one's underlying beliefs. To change one's behavior, therefore, the underlying cognitive structure must be changed (Fishbein & Middlestadt, 1987). The theory suggests that beliefs underlying a behavior in one context can differ from the beliefs underlying the same behavior in a different context. For example, beliefs about seeking counseling at a college counseling center may be different from beliefs about seeking counseling from a community clinic. Although beliefs are moderated by individual, behavior, context, and time-frame, TRA argues that most behaviors can be understood in terms of the same set of theoretical constructs and psychological processes that define this theory.

Constructs of TRA. The first step in applying TRA to behavior change is identifying the *target behavior* of change. For example, when referring to help-seeking behavior, this could include making an initial appointment with a mental health professional or continuing attendance of psychotherapy sessions; these are two different behaviors with different underlying beliefs. The context of the target behavior, which

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refers to the social environment in which the behavior takes place, further informs the definition of the target behavior. For example, help-seeking from family and friends and help-seeking from a mental health professional are associated with different contexts and therefore different sets of beliefs. Finally, as Fishbein and Middlestadt (1987) have pointed out, a person's intentions can differ depending on the time-frame of the target behavior in question. A student may be interested in attending counseling when needed, however, their actual behavior of attending therapy may decrease when there are high demands on their time, such as during midterms or finals. As the conceptualization of a target behavior differs based on context and time-frame, it is important to consider these elements when providing statements or arguments that aim to change the behavior.

TRA also considers the effect of *alternative behaviors* on change of target behavior. TRA argues the most salient predictor of behavior is intention (Ajzen & Fishbein, 1980). Sometimes, however, an individual may have the intention to perform a certain behavior, yet still does not do so. For example, a student with mental health problems may report the intention to seek professional counseling, however, does not follow through with making an appointment. The student may instead have a stronger intention to seek alternative behaviors to psychotherapy, such as exercise, social support, or talking with a trusted adult. These alternative behaviors may compete with the target behavior and reduce the chance of actual target behavior performance.

TRA is based on the theory that a person's intention to engage in a behavior is a function of two determinants: *subjective social norms* and *attitudes* toward the targeted behavior. Subjective social norms are an individual's perception of society's approval or disapproval of the behavior. Attitudes toward the behavior are an individual's general

positive or negative assessment of the behavior. To change a behavior requires a change in underlying cognitive beliefs which occurs through a change in one's attitude toward the behavior or change in one's perception of the social norms toward the behavior (Ajzen & Fishbein, 1980). When applied to seeking professional help, this theory holds that a lack of intention to seek help occurs because of both subjective social norms and attitudes. First, society may hold a negative evaluation of psychotherapy, for example, receiving mental health treatment means one is weak (subjective social norm). Second, an individual may form their own negative opinion towards mental health treatment often based on the societal perspective, for example, "if I seek mental health treatment, I'm weak" (attitude).

To change someone's attitude toward a behavior, research suggests employing an argument using belief-targeted communication (Bright, Manfredo, Fishbein, & Bath, 1993). Belief-targeted communication occurs when a set of arguments for a particular behavior are presented with factual evidence to support the arguments. For example, in a help-seeking intervention, empirical evidence supporting the efficacy of therapy could be included. When delivering an intervention that includes belief-targeted communication, the theory suggests viewers of the intervention will accept the factual evidence which leads to acceptance of the arguments made; acceptance of the arguments is theorized to result in a change in beliefs.

Criticism of TRA. Some critics of the general TRA model have suggested that TRA only predicts behavioral intentions and does not explicitly address behavior changes. To date, many help-seeking intervention studies based on the TRA model have only included self-reported intent while behavioral measures are missing. However, the

gap in the research may be due to the general difficulty of conducting research on application of theories. Future studies applying TRA to intervention work should strive to include a behavioral measure to allow for more reliable conclusions regarding behavior change.

Mental Health Interventions to Improve Help-Seeking

As stated earlier, research suggests many college students with mental disorders are not receiving treatment (Blanco et al., 2008), which has been attributed to negative attitudes about help-seeking among this population (Eisenberg et al., 2012; Gulliver et al., 2010; Vogel, Wade, & Hackler, 2007). Given the significant impact mental illness can have on functioning if treatment is not sought, there is a compelling need to address this public health problem. Specifically, there needs to be a focus on reducing the stigma toward mental illness and help-seeking on college campuses. This suggests the 20.5 million young people enrolled in United States' colleges and universities each year are a large potential audience with which to study mental health interventions (U.S. Department of Education, 2017).

Although the growing base of TRA research offers a promising foundation to guide intervention approaches to help-seeking, the evidence on the efficacy of interventions in college settings is still sparse (Yamaguchi et al., 2013). Practice appears to be ahead of research; surveys have shown that although there are no formal data on campus practices, campus health administrators at most four-year institutions report having some type of program to encourage help-seeking behavior (Eisenberg et al., 2012). These programs, though, are highly varied, lack standardization, and have different goals for their outcome. For example, a program on relaxation and de-stress

tactics might aim at decreasing students' stress at college, whereas a program on stigma of mental illness would intend to reduce students' stigma towards mental disorders. That said, mental health programs do share the goal of providing information on mental health issues which can increase general awareness of this topic.

Researchers only recently started to explore the efficacy of mental health interventions to impact college students' help-seeking behaviors (e.g., Demyan & Anderson, 2012; Guajardo & Anderson, 2007; Janoušková et al., 2017; Yamaguchi et al., 2013). Presently, there are a variety of mental health intervention modalities, including printed information (e.g., Farberman, 1997), educational campaigns (e.g., Gonzalez, Tinsley, & Kreuder, 2002), and contact interventions (e.g., Barker, Pistrang, Shapiro, Davies, & Shaw, 1993). A program may incorporate aspects of any combination of these modalities and there is predictable overlap in the long-term goals of each strategy. The printed information approach attempts to disseminate information on help-seeking options regarding accessibility and availability. The educational approach attempts to provide general background information on mental illness and help-seeking resources; by providing accurate information it is thought to replace stigmatized misconceptions (Alexander & Link, 2003). The contact approach implements direct interaction with persons who have mental disorders to discredit stigmatizing public attitudes and support help-seeking. To date there appears to be a limited number of reported mental health interventions specifically designed to impact help-seeking behaviors. Of the studies that have been conducted, many methodological weaknesses can be found (e.g., lack of follow-up or baseline; lack of behavioral measures), suggesting the need for research with more rigorous methods to understand overall effects (Yamaguchi et al., 2013).

In one mental health intervention study, Gonzalez and colleagues (2002)

examined the efficacy of a written publication to increase college students' positive

attitudes toward help-seeking, positive opinions of mental illness, and accurate

expectations of psychotherapy. College students ($N = 254$) were randomly assigned to

one of the two intervention groups or the no-treatment control group. One intervention

consisted of reading material about mental illness and the other intervention consisted of

reading material on psychotherapy; both interventions took approximately 10 to 15

minutes. Gonzalez and colleagues (2002) found that individuals who read information on

mental illness reported more positive attitudes toward help-seeking at a one-month

follow-up, but not immediately after the intervention, compared to the other intervention

and control group. Individuals in both intervention groups reported more positive

expectations about their personal commitment to therapy compared to the control group

both immediately post intervention and at follow-up. A serious methodological concern

in this study, however, was a lack of baseline data collected, as the authors did not collect

outcome variables prior to the intervention. It is therefore difficult to make any

conclusions about the true impact of the intervention on help-seeking domains.

In another study, Sharp, Hargrove, Johnson, and Deal (2006) created a classroom-

based psychoeducation intervention to promote awareness of mental health disorders and

college students' use of professional counseling, tested within a group of 123

undergraduate participants. The intervention consisted of a lecture style protocol in which

many mental illness stereotypes were debunked and information was provided regarding

the effectiveness of psychotherapy and available resources. The authors compared the

outcome measures change scores (from before to after the intervention) for the

intervention and the control group (no intervention provided) through an independent

sample *t* test. Students in the intervention group reported a positive increase in their

attitudes toward seeking professional counseling as well as their opinions about mental

illness, whereas the control group did not. The pattern of results remained after a 4-week

follow-up. The intervention appeared to have a small to moderate effect ($d = 0.36$) on the

participants' attitudes toward help-seeking.

In a media-based mental health intervention, Demyan and Anderson (2012)

examined the effects of a brief mass-media video intervention on college students'

expectations, attitudes, and intentions to seek help from mental health professionals.

Guided by the TRA model, the authors developed a public service announcement-style

video intervention, tailored for a college student population. The brief media intervention

was designed as a television commercial set at two minutes to approximate the length of

other health-related public service announcements. Undergraduate students ($N = 228$)

were randomly assigned to either the media-exposed intervention group who watched

programming in which the brief media intervention was inserted, or the control group

who watched the same programming without the media intervention. Overall the findings

from this study were complex and not conclusive. The brief media intervention failed to

significantly change participants' stigma towards mental illness, disclosure distress,

treatment fears, or treatment utility. However, the students exposed to the brief media

intervention did experience a positive increase in attitudes toward help-seeking compared

to the control group ($\eta^2 = .03$). Additionally, there was an effect on help-seeking

intentions in that compared to the control condition, the brief media intervention was

effective at increasing intentions to seek treatment, though only for participants who had prior help-seeking experience ($\eta^2 = .02$).

Another multimedia mental health intervention that involved college students ($N = 90$) was conducted by Guajardo and Anderson (2007). This study included two types of psychoeducational interventions and a no-treatment control group. Both interventions were designed to provide realistic information about psychotherapy and debunk common stereotypes of receiving professional help. Information included roles of the client and therapist, work expected of the client in therapy, anticipated results of therapy, confidentiality, goal setting, and potential benefits of treatment. One of the psychoeducation interventions, the multimedia program, also included video clips that represented a positive therapist-client interaction portrayed by actors. Results indicated both interventions effectively reduced fears about therapy, although the intervention with the multimedia program ($d = 1.02$) had a larger effect than the information-only program ($d = 0.43$). The authors suggested that use of a multimedia component may provide a more interactive and relatable component within the intervention. Of note, however, the multimedia intervention lasted twice as long (20 minutes) as the other intervention (10 minutes), which may have resulted in a larger effect because it provided more information to the participants. Additionally, this study lacked a follow-up to explore the long-term impacts of the multimedia component.

Effectiveness of contact strategies. As noted above, contact approaches within a mental health intervention implement direct interaction with persons who have mental disorders to discredit stigmatizing public attitudes and beliefs (e.g., "people with mental illness all talk to themselves") and support help-seeking. Contact is thought to impact

stigmatizing knowledge structures by having interactions with a person/people with mental illness who challenge known stereotypes (Corrigan & Penn, 1999). A review of the "active ingredients" of mental health interventions found that in emerging adults, greater improvement in stigmatizing attitudes was predicted by contact with a consumer-educator (Jorm & Wright, 2007). This finding was corroborated in a large-scale meta-analysis of 72 studies of mental health contact programs that reported contact approaches are generally more efficacious than education approaches for emerging adults in reducing stigma (Corrigan, Morris, Michaels, Rafacz, & Rüsch, 2012).

Contact approaches are not limited to face-to-face interactions but can also include video encounters in which at least one person in recovery from mental illness tells his or her story. Video contacts have an advantage of being a standardized format that can easily be disseminated. Additionally, emerging evidence suggests that mental health interventions are most effective when they target a specific audience. Specifically, tailoring intervention messages to include a positively-framed contact with an advocate of a similar developmental stage and status maximizes the relevance and appropriateness of the intervention for the viewer (e.g., both college students; Corrigan et al., 2012). This suggests that a contact intervention paired with a targeted approach would be particularly effective with emerging adults.

Past studies have used the contact approach to discredit stigmatizing public attitudes towards mental illness and help-seeking. A review of short-term interventions to reduce mental health-related stigma in college students found that social contact (live or via video) interventions were effective in decreasing stigma toward mental illness, with some studies also indicating improvement in attitudes toward mental health services

(Yamaguchi et al., 2013). Another review of contact interventions among emerging adults found that contact video interventions achieve a similar destigmatization effect to those delivered via live contact intervention (Janoušková et al., 2017). The authors noted that, though the findings suggest video is a promising destigmatization tool among emerging adults, more studies are needed in the area (Janoušková et al., 2017). Moreover, many of the studies exploring contact video interventions do not specifically measure help-seeking attitudes or intentions, a crucial public health target. A review of interventions specifically tailored to impact help-seeking revealed that providing mental health literacy content was the most effective for improving help-seeking attitudes. Only one study was found that offered a contact component, and it failed to yield a discernable effect (Gulliver, Griffiths, Christensen, & Brewer, 2012). Finally, even within these studies, only help-seeking attitudes were measured, not intentions or behavior towards treatment, nor were the interventions targeted to a specific audience. The authors concluded that further research investigating the effects of interventions, including via contact approaches, on help-seeking attitudes, intentions and behaviors is necessary (Gulliver et al., 2012).

In a previous study conducted by this author, a targeted contact intervention video created with college students (*Breaking Taboo*) was included within a mental health intervention program. One of the main goals of the study was to explore the impact of the targeted contact intervention video on help-seeking attitudes and intentions. One hundred and sixty-three college students were randomly assigned to view one of three videos: the targeted contact video, a usual care non-targeted contact video on mental health (Deegan, 2001), or a non-psychiatric control video (*Planet Earth*). Indicators of intervention

efficacy included participants' pre and post help-seeking attitudes and intentions. This author found the targeted contact video had a moderate effect on help-seeking intentions from baseline to post-test (*partial η^2 = .08*) while the usual care non-targeted contact video and non-psychiatric control video had no discernable effect (*partial η^2 = .00 and .01, respectively*). Further, the effect of the targeted contact video was most pronounced among participants who reported pre-existing psychological distress (*partial η^2 = .13*). The study provided initial validation for the utility of the targeted contact video to increase help-seeking intentions within a college student population. Although promising, this study was conducted in a controlled lab environment and did not include a long-term follow-up. Future research is necessary to explore the effects of a targeted contact video within a college community setting and explore the impact over time.

Limitations of current studies. There are few studies on the efficacy of mental health interventions that aim to change college students' attitudes and intentions to seek counseling; some of the existing studies suffer from methodological issues. Although the present state of research provides some justification that a well-designed intervention could be efficacious, it is difficult to draw general conclusions of the efficacy from the existing research. Further, many of the existing interventions vary in their approaches and time requirements for participants; it is still unclear what strategies are successful or how much time it takes for an intervention to be efficacious at increasing help-seeking. Initial evidence from an earlier study by this author indicates that targeted contact video interventions can be a promising approach to improve help-seeking intentions, yet research is still needed to explore the impact of a targeted contact video within a college community setting. There is clearly a need to further investigate the efficacy of mental

health interventions with a main priority to gain better information about the impacts of these programs, so resources can be more efficiently funneled towards what works best.

Summary of the Literature

Many individuals suffering from mental illness in the United States do not seek professional help due to stigmatizing attitudes toward help-seeking. The underutilization of mental health services of college students is particularly pronounced, suggesting a need for mental health intervention programs on college campuses aimed to increase help-seeking behaviors. There is currently a lack of help-seeking outcome studies on mental health interventions, which suggests a need for researchers to develop and evaluate theory-based mental health interventions to increase students' help-seeking behaviors. Theory of Reasoned Action provides a framework for understanding people's help-seeking behaviors and the barriers to help-seeking, such as a fear of stigmatization and self-disclosure. TRA suggests there are two channels for changing a person's behavioral intention to seek counseling: change in attitude and change in perceived stigma or social norm, suggesting that mental health interventions need to address these two constructs.

The evidence base for mental health intervention approaches needs to be strengthened significantly. A main priority in intervention research should focus on gaining information about the impact of these programs and the most important mechanisms to effect change. Although there is some research to suggest that a targeted contact video approach may be useful in effecting change within a college population, additional research is necessary. Focus should be placed on evaluating these newly

proposed interventions for their efficacy in positively changing help-seeking domains, and additionally, examine the potential for lasting effects on a college campus.

Current Study

The purpose of the current study was to evaluate the relative efficacy of a theory-based mental health workshop to increase college students' help-seeking attitudes and intentions, as well as decrease social and perceived stigma attitudes. The mental health workshop was empirically informed by research suggesting that contact approaches that are targeted to the desired population are most effective to change attitudes. To examine the impact of the targeted contact approach, participants in the present study attended one of two workshops: a Targeted Mental Health workshop (TMH) or a Usual Care workshop (UC). The TMH workshop included a video created with UMBC students discussing mental illness stigma and help-seeking behaviors, as well as a follow-up group discussion. The UC workshop was an established program at UMBC through the Health Promotions Office and included topics on stress and anxiety as well as available mental health resources on campus. The UC workshop was categorized as an educational intervention approach as it provided information on mental illness and mental health services. While the UC workshop was designed to increase students' awareness of stress and anxiety as well as on-campus mental health resources, it did not directly address any stigma-related topics. Despite the lack of a stigma topic, education approaches on their own have been found to be effective in combating stigma simply by providing accurate mental health information that can challenge stereotypical conceptualizations (e.g., Gonzalez et al., 2002).

Study Aims and Hypotheses

Aim 1

The first aim sought to determine whether the Targeted Mental Health (TMH) workshop resulted in a greater immediate change in help-seeking attitudes and intentions than the Usual Care (UC) workshop.

    1) I hypothesized the TMH workshop would result in a greater change in help-seeking attitudes and intentions for college students compared to the UC workshop.

Aim 2

The second aim sought to determine whether the TMH workshop resulted in a greater immediate change in social and perceived stigma-related attitudes toward help-seeking and mental illness than the UC workshop.

    1) I hypothesized the TMH workshop would result in a greater change in both social and perceived stigma-related attitudes toward help-seeking and mental illness for college students compared to the UC workshop.

Aim 3

The third aim sought to determine whether the Targeted Mental Health (TMH) workshop resulted in greater lasting change in help-seeking attitudes and intentions as well as social and perceived stigma than the Usual Care (UC) workshop.

    1) I hypothesized the TMH workshop would have greater lasting effects on help-seeking attitudes and intentions as well as social and perceived stigma-related attitudes for college students compared to the UC workshop.

Aim 4

Help-seeking can vary as a function of select contextual variables; as such, the fourth aim sought to explore how these contextual variables (i.e., prior help-seeking experience; clinical distress level; gender) impact help-seeking attitudes and intentions.

1) I hypothesized that contextual variables, specifically prior help-seeking experience, gender, and clinical distress, would be significant predictors of change in help-seeking attitudes and intentions.

Method

Participants

Participants eligible for the study were University of Maryland, Baltimore County undergraduate students who did not have a significant hearing or vision problem. Participants were recruited through the UMBC Health Promotions Office. Specifically, the study made use of groups of participants who consented and attended a regularly offered mental health intervention (see procedure). Groups attending the workshops ranged from 8-15 members; 14 groups were recruited, with a total sample size of 129 undergraduate students. Assignment to condition occurred at the group level, resulting in slightly unbalanced sample sizes, with 65 participants in the TMH condition and 64 participants in the UC condition. The sample for this study was 54% female, was of typical college age (ranging from 18 to 23 years of age, $M = 19.72$, $SD = 1.40$), and was racially diverse (49% Caucasian, 27% Asian, 21% African American, and 3% other).

Measures

Demographics. Data were collected on gender, race/ethnicity, age, years of education, academic major, motivation for participation, and status/experience as consumer (or family member of consumer) of mental health services or non-professional help (e.g., clergy, athletic coach, etc.) over lifetime and last 30 days. At 30-day follow-

up, participants were asked again their status/experience as consumer of mental health services within the last 30 days only. Included in the consumer status items at both baseline and follow-up were questions that asked whether the participant believed they should have sought mental health services though did not; if such items were endorsed, participants were asked to briefly indicate why they did not seek help (see Appendix A).

Attitudes Towards Seeking Psychological Professional Help Scale (ATSPPHS; Fischer & Turner, 1970). The ATSPPHS was used to measure attitudes towards help-seeking for mental health problems (e.g., "If I believed I was having a mental breakdown, my first inclination would be to get professional attention"). There were 29 items reflecting four domains: recognition of personal need for professional help, tolerance of stigma associated with psychotherapy, interpersonal openness regarding one's problems, and confidence in psychological professionals. Answers were recorded in a Likert-type format from 1 (*disagree*) to 4 (*agree*) with higher scores representing more positive attitudes toward professional psychological help-seeking (see Appendix A). A total score was obtained by averaging the item scores. Evidence supporting the solid psychometric properties of the ATSPPH scale are coefficient alphas of .83 (Fischer & Turner, 1970), .87 (Cepeda-Benito & Short, 1998), and .73 (Al-Darmaki, 2003). Strong psychometrics have also been found with college aged-populations including estimates of internal consistency ($\alpha = .84$) and 1-month test-retest reliability ($r = .80$) (Fischer & Farina, 1995). Additionally, for college students, the scale has a positive association with intentions to seek counseling ($r = .56$) and correlates negatively with self-concealment tendencies ($r = -.19$; Vogel et al., 2005). In the current sample,

Cronbach's alpha at baseline was .86, at post-test was .88, and at follow-up was .86, though scores were not adjusted for post-treatment effects.

Intentions to Seek Counseling Inventory (ISCI; Cash, Begley, McCown, & Weise, 1975). The ISCI was used to measure how likely a participant would be to seek the services of a therapist if they were experiencing mental health problems (e.g., "How likely would you be to seek counseling if you were experiencing…"). Examples of the issues presented include relationship difficulties, depression, personal concerns, and drug-related problems. The ISCI consisted of 17-items rated on a 4-point scale from 1 (*very unlikely*) to 4 (*very likely*) with higher scores indicating a greater likelihood of intention to seek the services of a mental health professional (see Appendix A). Response items were averaged to yield the total score. The measure has good estimates of internal consistency (Cronbach's α ranged from .84 to .90; Cepeda-Benito & Short, 1998; Vogel et al., 2005). Additionally, construct validity has been demonstrated through intentions being positively associated with favorable attitudes toward therapy (Kelly & Achter, 1995). In the current sample, Cronbach's alpha at baseline was .94, at post-test was .91, and at follow-up was .89, though scores were not adjusted for post-treatment effects.

Social Stigma for Receiving Psychological Help (SSRPH; Komiya et al., 2000). The SSRPH scale was used to measure perceptions of the public stigma associated with seeking professional help (e.g., "People tend to like less those who are receiving professional psychological help"). The SSRPH scale consisted of five items rated on a four-point scale ranging from 1 (s*trongly disagree*) to 4 (*strongly agree*). The items were averaged such that higher scores reflect greater perceptions of public stigma (see Appendix A). The SSRPH scale has been correlated with attitudes toward seeking

professional help ($r = -.40$, $p < .001$) and the internal consistency for the measure was originally found to be .73 (Komiya et al., 2000). In the current sample, Cronbach's alpha at baseline was .67, at post-test was .73, and at follow-up was .78, though scores were not adjusted for post-treatment effects.

The Perceived Devaluation Discrimination Scale (PDDS; Link, Mirotznik, & Cullen, 1991). The PDDS was used to measure the extent to which a person believes other people will devalue or discriminate against someone with a mental illness (e.g. "Most people believe that someone who has a mental illness is dangerous;" see Appendix A). The PDDS consisted of 12 items rated on a six-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). The items were averaged such that higher scores reflect greater perceived stigma. Estimates of internal consistency range from .76 to .88 among clinical and community samples (Link, Cullen, Struening, Shrout, & Dohrenwend, 1989; Link et al., 2001). Validity has been shown through a relation between the PDDS and the internal experience of demoralization ($r = .32$) and lower self-esteem ($r = -.66$; Link et al., 2001; Shimotsu & Horikawa, 2016). In the current sample, Cronbach's alpha at baseline was .83, at post-test and follow-up was .88, though scores were not adjusted for post-treatment effects.

Kessler Distress Scale (K10; Kessler et al., 2002). The ten item K10 scale was used to assess how often the respondent has experienced generic clinical distress in the past 30 days on a scale from 1 (*none of the time*) to 5 (*all of the time*). The items were summed such that higher scores indicate higher clinical distress (see Appendix A). Interpretation of scores suggest that those with a score of 20 or above have mild or more clinical distress. The K10 has an excellent internal consistency estimate in an emerging

adult sample (α = .93; Gill, Butterworth, Rodgers, & Mackinnon, 2007). In the current

sample, Cronbach's alpha at baseline was .91, and at follow-up was .93. For the current

study, the total distress score was dichotomized into scores of 20 or higher (*mild or more*

distress) and under 20 (*no distress*) to facilitate interpretation. These cutoff scores were

based on research suggesting individuals with scores 20 and over are likely to have at

least a mild mental health concern (e.g., Kessler et al., 2002).

Intervention Materials

Targeted mental health workshop. The Targeted Mental Health workshop

(TMH) included a brief introduction, targeted contact video, and group discussion. The

25-minute emerging adult targeted video, *Breaking Taboo*, was created by Jason

Schiffman, Danielle Denenny and the author. The targeted film was created to reduce

stigma towards mental illness and improve help-seeking attitudes. The first part of the

video presented three college students discussing their symptoms, experiences, and

recovery from serious mental illnesses, specifically schizophrenia and bipolar disorder.

The second part of the video showed a sequence of thematically grouped short clips of

interviews with eight college student consumers. Themes included how friends help the

recovery process, inaccuracies in the stereotypes of mental illness and treatment, stigma

of help-seeking, how mental health services are beneficial, and the importance of groups

and communities supporting an open dialogue about help-seeking. The last 15 minutes of

the TMH workshop included a group discussion with standardized prompts led by a

trained research assistant (see Appendix B for discussion prompts).

Usual care workshop. The Usual Care workshop (UC) was a 45-minute

standardized lecture protocol entitled "Healthy Minds." Lecture topics included suicide

myths and facts, stress and anxiety information, relaxation exercises, and on campus

resources for mental health services. The goal of the program was to educate UMBC

students on the various resources on-campus they can use to manage their stress and help

them cope during difficult times in college. The program emphasized information and

support needed to assist in positive lifestyle changes in a high stress environment like

college. The lecture was provided by peer health educators: UMBC undergraduate

students trained in various health related topics. There were 4 peer health educators who

ran the UC workshop throughout the study based on their availability. Of note, the UC

workshop did not have a multimedia or discussion component and did not directly

discuss stigma-related topics.

Procedure

Participants were recruited through the Health Promotions Office (HPO) as well

as active recruitment by this researcher through contacting faculty advisors of

groups/clubs and residence halls to encourage participation. The HPO offers varied

program topics, including the UC workshop, for campus clubs and organizations. When a

club or organization contacted the HPO regarding a mental health program, the club

initiator was told the HPO was exploring an alternative mental health program and the

group would be assigned to one of the two workshops (UC or TMH). The initiator

indicated available dates and times for their organization to participate in the workshop

and provided emails of expected attendees. The initiator was also informed about the

ongoing research study to evaluate the alternative program (TMH); specifically, that each

of their group attendees would be contacted in advance, the study summarized, and given

the option to participate in the study for compensation. Through active recruitment by

this researcher, interested groups also went through the same procedures through HPO to schedule a workshop.

It is important to note this study was completed in a community setting and in collaboration with community partners. It was important to avoid disruption of regular services of the already established Usual Care workshop and their pre-trained UMBC peer health educators. As such, the presenters who delivered the UC workshop (UMBC peer health educators) and the presenters who delivered the TMH workshop (UMBC undergraduate research assistants) were not the same. This resulted in treatment condition being nested within presenter condition. This prevented uniquely estimating effects of treatment condition and presenter in the same model.

Seventy-two hours prior to the workshop, expected attendees received an email with a summary of the study and a link to complete informed consent as well as the baseline battery. The email explained the nature of the study ("you will be participating in a study designed to assess perceptions of various groups and health issues") and indicated that participants would receive the following compensation: five-dollar Amazon gift card for completion of the baseline battery (emailed after attended workshop); ten-dollar Amazon gift card for completion of the follow-up battery; and entry into a raffle for an iPad if completed all three timepoints. After consenting, participants completed a battery of self-report measures randomly counterbalanced within the software; non-consenting participants were immediately directed to the end of the assessment (a reminder page of the upcoming workshop date/time). Following attendance of the workshop, participants were asked to complete a battery of the primary measures (counterbalanced). The measures took approximately 15-minutes to complete.

Participants were contacted via email 30-days post-workshop with a link to complete a follow-up battery of self-report measures randomly counterbalanced within the software. Of note, a predetermined participant identification code (PID) was used to identify participants who participated in the study twice (in two different groups) and depending on time of completion of both groups, the data was thrown out for the second or both sessions. Table 1 summarizes the wave of measurement and measurement modality used in the five-week study.

Table 1

Procedure

Modality	Baseline Online	Post-test Paper/Pencil	Follow-up Online
Measure	12-72 hours prior to workshop	Immediately following workshop	30-37 days following workshop
Informed consent	X		
Demographics	X		
Mental Health Consumer Status and Experience			
Lifetime	X		
Past 30 days	X		X
Primary Outcomes			
ATSPPHS[1]	X	X	X
ISCI[2]	X	X	X
SSRPH[3]	X	X	X
PDDS[4]	X	X	X
Covariate			
K10[5]	X		X

[1] Attitudes Toward Seeking Psychological Professional Help Scale
[2] Intentions to Seek Counseling Inventory
[3] Social Stigma for Receiving Psychological Help
[4] The Perceived Devaluation Discrimination Scale
[5] Kessler Distress Scale

Results

Preliminary Analyses

Prior to testing primary hypotheses, all variables were examined for skew and kurtosis. Additionally, missing data patterns were explored. Further, I examined baseline differences that may arise due to attrition, workshop, and presenter. I also examined differences in immediate change related to attrition. Finally, I examined simple bivariate relations between groups and across time.

Examination of measures of non-normality (skew and kurtosis), as well as visual inspection of plots gave no reason to believe any of the study variables violated assumptions of normality (Curran, West, & Finch, 1996). As such, no transformations of the data were made. Regarding missing data patterns, all participants ($N = 129$) had complete data at the first two time points, whereas only 91 participants had complete data at the follow-up (71%). Differences between the participants, including sample characteristics at baseline for all participants, as well as separately for those with complete data ($N = 91$; completers) and those who were missing the follow-up time point ($N = 38$; non-completers), were explored. Table 2 provides these sample characteristics, which show no significant differences in sample characteristics due to attrition.

It was also important to determine whether there were apparent differences between the completers and non-completers on the four primary outcome measures. Table 3 provides the means of the outcomes (and immediate change scores) for which all participants were measured. As seen in Table 3, none of the differences between completers and non-completers were statistically significant, suggesting that attrition at wave 3 could be considered missing at random (MAR) with respect to the outcome. However, baseline attitudes, post-test intentions, change in intentions, and post-test

Table 2

Sample Characteristics for Overall Sample and T3 Completers Versus Non-Completers

Variable *Categorical measures*	$N = 129$ overall *Proportion*	$N = 91$ complete *Proportion*	$N = 38$ missing *Proportion*	χ^2 (*df*)	V^a
Condition				2.22 (1)	.13
Control	.50	.46	.61		
Treatment	.50	.54	.40		
Gender[b]				0.17 (1)	.04
Female	.54	.53	.55		
Male	.46	.47	.42		
Other	.01	n/a	.03		
Race[c]				0.98 (2)	.09
Caucasian/White	.49	.47	.53		
African Amer/Black	.21	.23	.16		
Asian	.27	.29	.24		
NH/OPI	.02	.01	.05		
Other	.01	n/a	.03		
Past 30 MH Use (T1)				0.53 (1)	.06
No	.86	.85	.89		
Lifetime MH Use (T1)				0.00 (1)	.001
No	.66	.68	.66		
Class Standing[d]				5.07 (2)	.21
Freshman	.57	.55	.61		
Sophomore	.13	.18	.26		
Junior	.20	.19	.24		
Senior	.09	.08	.13		
Other	.01	.01	n/a		
Psychology Major[e]				1.89 (1)	.12
Yes	.14	.11	.21		
No	.82	.84	.79		
Undecided	.04	.05	n/a		

*p < .05, **p < .01

NH/OPI = Native Hawaiian/Other Pacific Islander

[a] Cramer's *V* for Race; for dichotomous variables, Cramer's *V* is identical to ϕ (phi coefficient)

[b] Due to sparseness, the χ^2 estimate calculated omitting Other

[c] Due to sparseness, the χ^2 estimate calculated omitting NH/OPI & Other

[d] Due to sparseness, the χ^2 estimate calculated omitting Senior & Other

[e] Due to sparseness, the χ^2 estimate calculated omitting Undecided

perceived stigma would be characterized as having a small effect, thus some caution may be warranted (i.e., possible violation of MAR).

Table 3

Group Means and Change Scores for Overall Sample and T3 Completers Versus Non-Completers

Variable	Theoretical Ranges	N = 129 overall	N = 91 complete	N = 38 missing		Effect size
Continuous measures		*M (SD)*	*M (SD)*	*M (SD)*	*t* (127)	Cohen's *d*
T1 Attitudes	1 - 4	2.69 (0.46)	2.66 (0.48)	2.76 (0.42)	1.06	0.22
T2 Attitudes	-	2.88 (0.44)	2.87 (0.43)	2.92 (0.47)	0.59	0.11
(T2 - T1)	-	0.19 (0.29)	0.21 (0.30)	0.16 (0.28)	0.78	0.17
T1 Intentions	1 - 4	2.12 (0.69)	2.12 (0.69)	2.13 (0.68)	0.09	0.02
T2 Intentions	-	2.58 (0.62)	2.54 (0.64)	2.68 (0.58)	1.18	0.23
(T2 - T1)	-	0.46 (0.60)	0.42 (0.64)	0.55 (0.48)	1.11	0.23
T1 Social Stigma	1 - 4	2.20 (0.51)	2.22 (0.50)	2.16 (0.52)	0.55	0.12
T2 Social Stigma	-	2.01 (0.54)	2.03 (0.55)	1.96 (0.53)	0.64	0.13
(T2 – T1)	-	-0.19 (0.46)	-0.19 (0.50)	-0.20 (0.35)	0.15	0.02
T1 Perceived Stigma	1 - 6	3.10 (0.61)	3.12 (0.59)	3.10 (0.67)	0.26	0.03
T2 Perceived Stigma	-	3.01 (0.69)	3.05 (0.69)	2.90 (0.68)	1.13	0.22
(T2 – T1)	-	-0.10 (0.61)	-0.07 (0.57)	-0.18 (0.72)	1.00	0.17

Note. Attitudes = Attitudes Towards Seeking Psychological Professional Help Scale; Intentions = Intentions to Seek Counseling Inventory; Social Stigma = Social Stigma for Receiving Psychological Help; Perceived Stigma = The Perceived Devaluation Discrimination Scale.

Workshop presenter differences. I also explored baseline differences in participant characteristics and baseline primary outcome measures between the workshop presenters. One-way ANOVAs or chi-square tests were used to estimate presenter differences in demographic variables and outcomes measured at baseline. If an effect was observed, it was followed up with pairwise comparisons. The groups did not significantly differ on any demographic variables, including gender, race, type of group (e.g., athletes, residence hall), past mental health consumer (30 day and lifetime), class standing, nor major (all ps > .10). Differences due to presenter were present at baseline for two dependent variables (attitude and intention scores). As seen in Table 4, Monica's groups had higher intentions to seek counseling scores than four other presenters (including both TMH presenters) and Ross' group had higher attitudes towards help-seeking scores compared to all other presenters' groups at baseline. As noted in the Method section, my design resulted in the fact that presenter and group was conflated, which means I could not control for presenter when estimating effects of treatment condition despite these baseline differences.

Bivariate relations and descriptive statistics. Table 5 provides bivariate relations of all measures of the study across each time point as well as means and standard deviations (though provided in earlier tables, for convenience these are repeated in Table 5).

Stability coefficients were calculated for each outcome and can be found in the boxes in Table 5. The solid box has the stability coefficients for attitudes, the dot-dash box for intentions, the dash-dash box for social stigma, and the round-dot box for

Table 4

Group Means of Outcomes at Time 1 by Intervention Presenter

Condition	Presenter[+]	N	# of Groups	ISCI	ATSPPHS	SSRPH	PDDS
					M (SE)		
Usual Care	Chandler	8	1	1.89 (0.24)[a]	2.45 (0.61)[e]	2.42 (0.41)	2.98 (0.38)
Usual Care	Monica	13	2	2.64 (0.19)[abcd]	2.79 (0.58)	2.37 (0.59)	3.21 (0.52)
Usual Care	Ross	14	1	2.15 (0.18)	2.96 (0.37)[ef]	2.26 (0.58)	3.13 (0.36)
Usual Care	Rachel	29	3	1.97 (0.13)[b]	2.55 (0.43)[f]	2.16 (0.51)	3.22 (0.74)
Targeted	Joey	52	6	2.11 (0.09)[c]	2.71 (0.41)	2.18 (0.46)	3.08 (0.57)
Targeted	Phoebe	13	1	2.07 (0.19)[d]	2.67 (0.51)	2.02 (0.59)	2.91 (0.82)

+ Presenter names were changed for anonymity

Estimates that *share* a superscript differ from each other at $p < .05$

Note. ISCI = Intentions to Seek Counseling Inventory; ATSPPHS = Attitudes Towards Seeking Psychological Professional Help Scale; SSRPH = Social Stigma for Receiving Psychological Help; PDDS = The Perceived Devaluation Discrimination Scale.

Table 6 provides descriptive statistics for the primary outcomes at each timepoint separated by workshop. As seen in Table 6, the pattern for attitudes and intentions for the TMH workshop appears to be an immediate increase from baseline to post-test followed by a reversion toward baseline at the follow-up. The pattern of these measures for the UC workshop was an increase from baseline to post-test and then only a slight decrease in scores from post-test to follow-up. For social stigma, in both the TMH and UC workshops, means decreased from baseline to post-test, then increased slightly at follow-up. Finally, for perceived stigma in both workshops, the means continued to decrease slightly from baseline, to post-test, to follow-up.

Table 5

Bivariate Relations Among Study Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. T1AQ	-																
2. T2AQ	.79**	-															
3. T3AQ	.64**	.73**	-														
4. T1ICI	.45**	.31**	.27**	-													
5. T2ICI	.34**	.42**	.33**	.59**	-												
6. T3ICI	.37**	.40**	.54**	.54**	.57**	-											
7. T1SS	-.36**	-.28**	-.39**	-.10	-.10	-.37**	-										
8. T2SS	-.26**	-.40**	-.34**	.01	-.16	-.20	.62**	-									
9. T3SS	-.28**	-.36**	-.51**	-.04	-.21*	-.29**	.59**	.70**	-								
10. T1PD	-.21*	-.21*	-.24*	-.06	-.14	-.14	.32**	.43**	.44**	-							
11. T2PD	-.18*	-.20*	-.30**	-.01	-.05	-.16	.32**	.45**	.45**	.55**	-						
12. T3PD	-.20	-.21	-.35**	-.07	-.15	-.14	.26*	.29**	.51**	.54**	.66**	-					
13. T1K10	.01	-.04	-.13	.06	.01	.06	.17	.20*	.32**	.18*	.20*	.29**	-				
14. T3K10	-.03	-.12	-.23*	.09	-.11	.02	.19	.29**	.39**	.37**	.30**	.42**	.78**	-			
15. MH30	.14	.07	.04	.23**	.05	.15	.16	.27**	.17	.14	.08	.15	.30**	.19	-		
16. MHLife	.31**	.27**	.05	.28**	.10	.02	.01	.01	.08	.05	.01	.19	.34**	.27**	.47**	-	
17. Gender	-.14	-.14	-.11	.02	-.01	-.14	.09	.09	.25*	-.08	.07	.04	-.10	-.12	.02	-.06	-
M	2.69	2.88	2.80	2.12	2.58	2.33	2.20	2.01	2.13	3.11	3.01	2.91	23.39	22.69	.14	.34	.54
SD	0.46	0.44	0.43	0.69	0.62	0.60	0.51	0.54	0.54	0.61	0.69	0.67	6.65	8.28	-	-	-

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

Note. Sample size for all correlations involving time 3 measures was $N = 91$. All other correlations were $N = 129$; Gender is coded such that Male = 0 and Female = 1; AQ = Attitudes Towards Seeking Psychological Professional Help Scale; ICI = Intentions to Seek Counseling Inventory; SS = Social Stigma for Seeking Psychological Help; PD = The Perceived Devaluation Discrimination Scale; K10 = The Kessler Distress Scale; MH30 = mental health services in last 30 days (coded such that No = 0 and Yes =1); MHLife = mental health services in lifetime (coded such that No = 0 and Yes =1).

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Table 6

Group Means of Outcomes at Baseline, Post-Test and Follow-Up for TMH vs. UC

	Baseline		Post-Test		Follow-Up	
	TMH $N = 65$	UC $N = 64$	TMH $N = 65$	UC $N = 64$	TMH $N = 42$	UC $N = 49$
Measures	*M* (*SD*)					
Attitudes	2.71 (0.43)	2.68 (0.50)	2.91 (0.43)	2.86 (0.46)	2.75 (0.45)	2.82 (0.42)
Intentions	2.10 (0.69)	2.14 (0.69)	2.73 (0.62)	2.43 (0.59)	2.31 (0.69)	2.35 (0.52)
Social Stigma	2.15 (0.49)	2.26 (0.53)	1.93 (0.50)	2.09 (0.58)	2.04 (0.55)	2.20 (0.53)
Perceived Stigma	3.04 (0.63)	3.17 (0.59)	2.96 (0.74)	3.06 (0.62)	2.78 (0.67)	3.03 (0.65)

Note. Attitudes = Attitudes Towards Seeking Psychological Professional Help Scale; Intentions = Intentions to Seek Counseling Inventory; Social Stigma = Social Stigma for Receiving Psychological Help; Perceived Stigma = The Perceived Devaluation Discrimination Scale.

Primary Analyses

Analysis plan. All analyses for the study were run using SPSS, version 25. Addressing Aim 1 (whether the TMH workshop resulted in a greater immediate change in help-seeking attitudes and intentions than the UC workshop) and Aim 2 (whether the TMH workshop resulted in a greater immediate change in social and perceived stigma than the UC workshop) required analysis of the first 2 measurements. Given there is complete data between baseline and post-test (structured data) as well as minimal variability in time of baseline completion prior to the workshops, mixed design ANOVAs were estimated. Specifically, a series of 2 (Time) x 2 (Workshop) mixed design ANOVAs, with time (baseline vs.post-test) as the within subjects factor and workshop (TMH vs. UC) as the between

subjects factor, were estimated to examine effects.

Aim 3 sought to examine lasting effects of the workshops. Given incomplete data and increased variability between post-test and follow-up in terms of participants' responding time, multilevel modeling (MLM) was determined to be appropriate. MLM is analogous to OLS (ordinary least squares) regression, though useful when data are clustered (e.g., children nested within classrooms; repeated measures clustered within individuals). With clustered data, it is possible the standard errors of the regression coefficients are negatively biased due to the clustering (the actual degree of bias is related to both group size and levels of dependence between individuals). Researchers refer to "levels" within the data structure for purposes of both clarity and as it impacts the types of statistical tests available to the researcher. For example, with children nested in classrooms, the lowest level would be the individual children, designated as Level-1, whereas the classroom, would be designated as Level-2. In addition to obvious group structure as described, MLM can be extended to longitudinal studies in which one can imagine the distinct measurement occasions (e.g., timepoint 1, timepoint 2, etc.) as being nested within individual.

MLM is quite flexible and allows several differing tests (while controlling for the clustering). Specifically, this model can examine group differences (differences due to workshop) on functioning over time (three measurements). Multilevel modeling estimates both fixed effects (i.e., average rate of growth, differences in growth due to treatment) and random effects (i.e., variance in intercept and slope coefficients). Additionally, the analysis takes into account correlated or clustered data (i.e., repeated measurements across multiple time points; does not assume independent observations). One of the

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often-cited advantages of a MLM approach to longitudinal data analysis is its ability to handle both unstructured and unbalanced data (Singer & Willett, 2003). Longitudinal data are balanced if the repeated measures response data are collected on the same schedule for all individuals. In most applied longitudinal data collection scenarios, including this study, individuals often differ in their data collection occasions over time (e.g., not everyone completed a follow-up exactly at 30 days post workshop) which results in unbalanced (i.e., unequally spaced) data.

Additionally, if all individuals are assessed on the same number of timepoints over time (e.g., no attrition/dropout), the data are said to be structured. In applied research settings, including within this study, dropout/attrition is likely present, implying unstructured data (e.g., people not completing follow-up assessment). Unlike traditional measures such as RM ANOVA (in which observations with any missing data are omitted from analysis), MLM can still be estimated. Specifically, as long as there is at least one timepoint, the analysis can maintain all observations for the participant, which maximizes the sample size and power.

The data for this study were represented by a two-level model: level-1 represented measures that vary within participant (repeated measures at participant level) and level-2 represented measures that vary across participants (workshop group and demographics). Recall that, though participants are clustered within presenter, workshop (the IV) is nested within presenter, thus prohibiting consideration of the data as three-level. Though possible to estimate growth process in multiple outcomes concurrently, the sample size of the current study was prohibitive. As such, four separate groups of multilevel models were tested to determine participants' changes in each outcome over time. The same

growth modeling approach was used for each dependent measure. Given the level of

complexity in MLM, a "model-building" approach was used in which simpler models

were specified first and complexity was added in subsequent models (see Delucia & Pitts,

2006; Heck & Thomas, 2015; Peugh & Enders, 2005). The appropriate fit of each

increasingly complex model was estimated by the associated change in χ^2 value.

Conceptually, I started with the most simplistic model. I sequentially made the

model more complex through consideration of higher order terms such as growth

estimates and/or variability in growth. I ceased estimating more complex models when

they no longer served to improve the fit of the model to the observed data and/or failed to

converge. For all models, time was coded so that the immediate post assessment point of

the workshop (post-test) was 0, meaning that the baseline assessment was defined as

number of days baseline was completed prior to the workshop (a negative value) and the

follow-up assessment was entered as number of days follow-up was completed after the

workshop. This decision was made to allow for examination of the relationship

immediately after the workshop had been implemented.

Finally, Aim 4 sought to explore how contextual variables (i.e., prior help-seeking

experience; clinical distress level; gender) impact help-seeking attitudes and intentions. I

first explored bivariate relations of these contextual variables with help-seeking variables

in Table 5. Next, I individually examined bivariate relations through the retained help-

seeking growth models. Specifically, the contextual variables were added individually as

Level-2 predictors and the effect of these predictors on intercept, linear, and quadratic

growth were explored. Finally, though not hypothesized, prior research has found that

mental health interventions can be more effective for people in distress (e.g., Cepeda-Benito & Short, 1998). Therefore, I ran 2 mixed design ANCOVAs and explored how distress moderated the effect of workshop group on intentions and attitudes.

Aims 1 and 2. Table 7 provides the ANOVA summary table of the 2 x 2 mixed design ANOVAs evaluating change in the outcomes.

Table 7

Summary of Two-Way Mixed Design ANOVAs for Outcomes

Effect	Attitudes		Intentions		Social Stigma		Perceived Stigma	
	F	*partial* η^2	*F*	*partial* η^2	*F*	*partial* η^2	*F*	*partial* η^2
Time	55.72**	.31	81.20**	.39	21.80**	.15	3.40	0.03
Workshop	0.32	.002	1.82	.01	2.59	.02	1.15	.009
Time x W	0.027	.002	10.93**	.08	0.37	.003	0.08	.001

*p < .05, **p < .01*
Note. Degrees of freedom for all effects is (1, 127)

As seen in Table 7, there was a main effect of time for attitudes and social stigma, wherein positive attitudes towards help-seeking increased (*M*s = 2.69 and 2.88 for baseline and post-test, respectively) and social stigma towards help-seeking decreased (*M*s = 2.20 and 2.01 for baseline and post-test, respectively) for all participants regardless of workshop group. Perceived stigma did not significantly change across time for any of the participants regardless of workshop group. A significant interaction of workshop x time was observed for intentions to seek counseling, and as such, I examined the effect of time (change) within each workshop condition.

Analyses suggested that intentions to seek counseling significantly increased from baseline to post-test in both the TMH ($F[1, 127] = 76.46$, $p < .01$, *partial* $\eta^2 = .38$; mean change $= 0.63$) and UC ($F[1, 127] = 16.15$, $p < .01$, *partial* $\eta^2 = .11$; mean change $= 0.29$) workshop groups, although the TMH workshop had larger positive growth between baseline and post-test. Consistent with the significant workshop x time interaction, Figure 2 provides a plot of means of intentions to seek counseling for the workshop conditions across baseline and post-test and illustrates the larger growth in the TMH workshop.
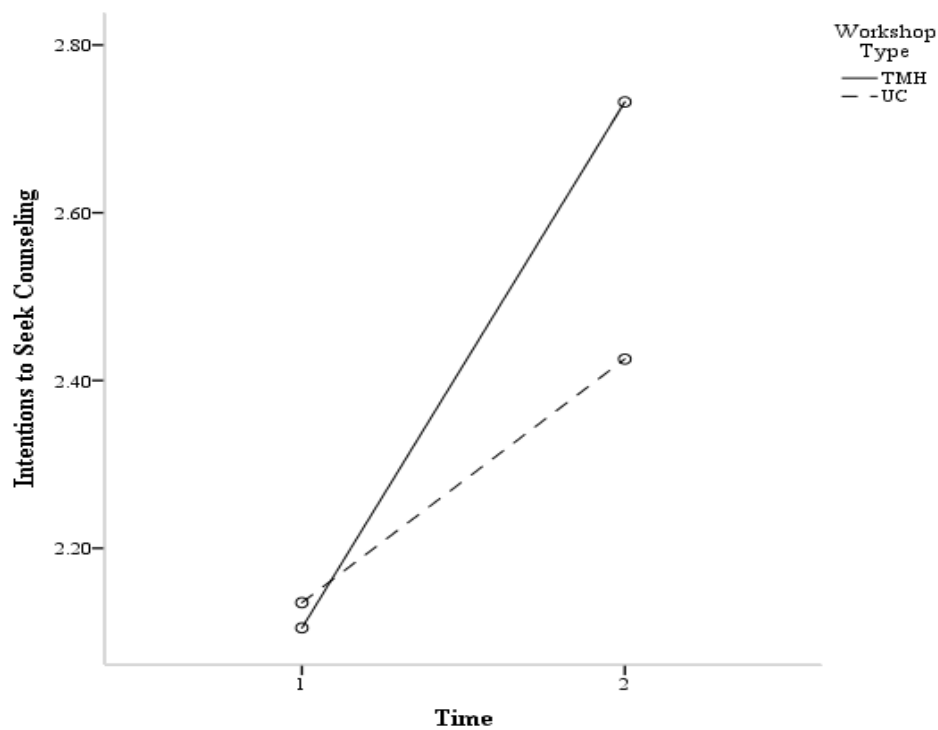
Figure 2. Plot of Time x Workshop Interaction for Intentions to Seek Counseling

Aim 3. At the first step, a null model (Model 1) was estimated to examine appropriateness of multilevel modeling and to also serve as a baseline model. The null model was not expected to provide a good fit to the data, as the model is only appropriate if no significant growth or individual differences in participants were observed. At the second step, a random effects intercept model (Model 2) estimated individual differences

(i.e., individual level variance in the intercept scores) but did not estimate growth. The

model at the third step (Model 3) added the estimate of growth to Model 2 (i.e., a fixed

linear growth model); given the fixed effect of the model, this suggested that all

participants had the same rate of growth. The model at the fourth step (Model 4) allowed

for varying intercept and slope as well as covariance between these two variance

components. This model explored the possibility that individuals grew at different rates.

The model at the fifth step (Model 5) included a fixed effect of the quadratic and linear

form of growth as well as intercept, although only a random effect of intercept, in the

case that there was no linear growth variance found in Model 4. Finally, the last model

(Model 6), included a fixed effect of quadratic as well as both fixed and random effects

of intercept and linear growth.

Table 8 provides the growth models of intentions to seek counseling[1]. No fixed

linear growth was observed (Model 3) nor variance in linear growth as evidenced by the

inability for Model 4 to converge. Negative fixed quadratic growth was observed when

growth variance was not estimated in the model (Model 5). Specifically, Model 5

exhibited a significant time interaction with a parameter estimate of -0.003 ($SE = 0.001$, p

$< .01$).

Based on relative model fit, Model 5, negative fixed quadratic growth, was

retained for intentions to seek counseling. Negative fixed quadratic growth suggests that

intentions towards help-seeking increased at post-test but was not maintained at follow-

up. Appendix C provides the results of growth modeling for each of the other outcomes.

Table 8

Growth Models of Intentions to Seek Counseling

Parameter	Model 1	Model 2	Model 3	Model 5
	Estimate (*SE*)			
Fixed Effects				
Intercept	2.34 (0.04)**	2.35 (0.05)**	2.35 (0.05)**	2.42 (0.05)**
Time	--	--	< 0.01 (< 0.01)	0.10 (0.02)**
Time*time	--	--	--	-0.003 (< 0.01)**
Random Effects				
Residual var	0.45 (0.34)**	0.24 (0.02)**	0.24 (0.02)**	0.22 (0.02)**
Intercept var	--	0.21 (0.04)**	0.21 (0.04)**	0.22 (0.04)**
$\Delta\chi^2$ (df)	--	62.69 (1)**	-10.62 (1)	5.50 (1)*

p < .05, **p* < .01
Note. Model 1 = fixed intercept; Model 2 = random intercept; Model 3 = fixed intercept/linear growth, random intercept; Model 4 = fixed and random intercept/linear growth (failure to converge); Model 5 = fixed intercept/linear growth/quadratic growth, random intercept; Model 6 = fixed intercept/linear growth/quadratic growth, random intercept/linear growth (failure to converge).

Table 9 provides the final form of growth for each of the outcomes.

Table 9

Final Form of Growth for Outcomes

Outcome	Model Retained	Explanation
Intentions	Model 5	Negative fixed quadratic growth (increase at post-test, but not maintained at follow-up)
Attitudes	Model 6	Negative fixed quadratic growth (increase at post-test, but not maintained at follow-up)
Social Stigma	Model 5	Positive fixed quadratic growth (decrease at post-test, but not maintained at follow-up)
Perceived Stigma	Model 3	Negative fixed linear growth (small decrease overall)

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[1] Of note, all growth models were also re-estimated in which the intercept and slope covariance was set to zero. This method did not change the models retained for any of the dependent variables based on relative model fit. Additionally, growth models were re-estimated without the inclusion of groups with presenters Monica and Ross, given these groups were driving the presenter-group differences observed at T1. These re-estimations also did not change the models retained for any of the dependent variables.

Effect of workshop. For the final models retained for the dependent variables,

significant intercept variance was observed (ps < .01), suggesting post-test scores varied

across participants. It was, therefore, plausible to attempt to model this variation with the

level-two predictor of workshop. Similar to estimating growth models, to test the effect

of workshop, a series of models were run, all referring to the final model retained for

each outcome. First, I included the effect of workshop overall, which is testing whether

there are significant differences in the intercept (Model A). Then, if a linear effect was

present for the outcome, I included the effect of workshop on linear growth (Model B).

Finally, if a quadratic effect was present, I included the effect of workshop on quadratic

growth (Model C). Table 10 provides these additional models for intentions to seek

counseling.

Table 10

Growth Models for Intentions to Seek Counseling by Workshop Group

Parameter	Model A	Model B	Model C
	Estimate (*SE*)		
Fixed Effects			
Intercept	2.36 (0.07)**	2.34 (0.07)*	2.33 (0.07)**
Time	0.10 (0.02)**	0.10 (0.02)*	0.09 (0.03)**
Time*time	-0.003 (< 0.01)**	-0.003 (< 0.01)*	-0.003 (< 0.01)**
Workshop	0.12 (0.10)	0.18 (0.10) †	0.18 (0.10) †
Time*workshop	--	-0.007 (< 0.01) †	0.01 (0.04)
Time*time*workshop	--	--	-0.001 (< 0.01)
Random Effects			
Residual var	0.22 (0.02)**	0.22 (0.02)**	0.22 (0.02)**
Intercept var	0.22 (0.04)**	0.23 (0.04)**	0.22 (0.04)**

†$p < .06$, *$p < .05$, **$p < .01$
Note. Workshop is coded such that UC = 0 and TMH = 1.

As observed in Table 10, the effect of workshop on linear growth is trending

towards significant, suggesting that workshop groups differ in their rate of linear growth,

as was evidenced in Figure 2. The workshop groups were not significantly different from

each other on intentions to seek counseling post-test scores nor on rate of quadratic growth. I subsequently evaluated the effect of workshop on the remaining dependent variables. The additional models can be found in Appendix D. Overall, workshop group was not a significant predictor for the remaining outcomes (ps > .10). Specifically, workshop groups were not significantly different from each other on any of the remaining outcomes' post-test scores, nor did the workshop groups differ in their rate of growth for any of the remaining outcomes.

Aim 4. Prior to analyses, examination of relations in Table 5 portended the effects of contextual variables on help-seeking attitudes and intentions. Specifically, gender had a small relation with attitudes, such that females had more positive help-seeking attitudes. Additionally, there was some evidence that prior lifetime mental health experience was related to attitudes and intentions, such that those with prior help-seeking experience had more positive attitudes and intentions towards help-seeking. Surprisingly, baseline distress did not appear related to any of the help-seeking measures and an unanticipated relation of follow-up distress with follow-up attitudes was observed; this relation was negative such that higher distress was related with lower attitudes towards help-seeking.

To explore Aim 4, I individually examined bivariate relations of each variable with help-seeking attitudes and intentions within the retained growth models. The effect of a given contextual variable was included in the model in the same strategy of evaluation of workshop; contextual variable on intercept, on linear growth, and on quadratic growth. The additional models for intentions and attitudes can be found in Appendix E. Gender and clinical distress were not significant predictors of intentions to seek counseling. Prior help-seeking experience did have a significant effect on linear

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growth of intentions. Additional analyses showed that while both non-consumers ($N =$

85; $F[1, 127] = 75.30$, $p < .01$, *partial* $\eta^2 = .37$; mean change = 0.55) and past consumers

($N = 44$; $F[1, 127] = 9.93$, $p < .01$, *partial* $\eta^2 = .07$; mean change = 0.28) significantly

increased from baseline to post-test, non-consumers had lower mean intentions at

baseline ($M = 1.98$ for non-consumers compared to $M = 2.39$ for past consumers). This

resulted in steeper linear growth from baseline to post-test for non-consumers, as

observed in Figure 3, and likely explains the statistically significant difference in rate of

linear growth.
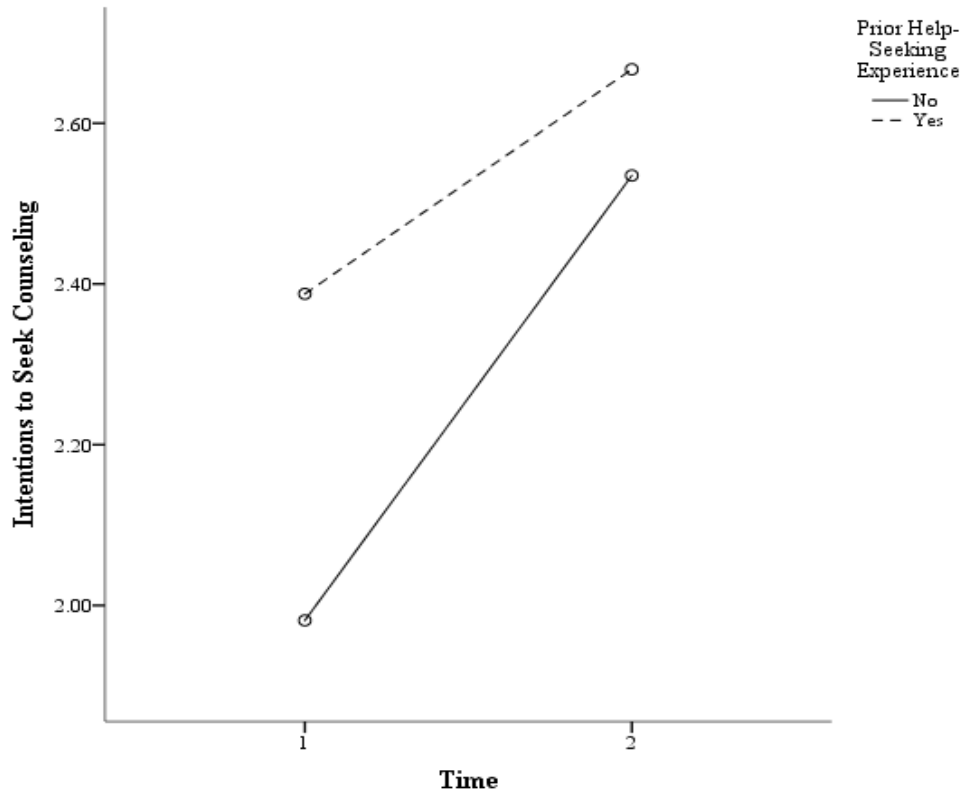
Figure 3. Plot of Time x Prior Help-Seeking Experience for Intentions to Seek
Counseling

Gender had a significant effect on intercept for attitudes towards help-seeking

(parameter estimate = 0.21, $SE = 0.07$, $p < .01$). This significant effect indicated that

females had more positive attitudes towards help-seeking at post-test compared to males.

Prior help-seeking also had a significant effect on intercept for attitudes towards helping-seeking (parameter estimate, 0.21, $SE = 0.07$, $p < .01$). This significant effect indicated that past consumers had more positive attitudes towards help-seeking at post-test compared to non-consumers. Additionally, prior help-seeking had a significant effect on linear growth (parameter estimate = -0.009, $SE = 0.002$, $p < .01$). Similar to intentions, additional analyses showed that while both non-consumers ($F[1, 127] = 43.87$, $p < .01$, *partial* $\eta^2 = .26$; mean change = 0.21) and past consumers ($F[1, 127] = 13.05$, $p < .01$, *partial* $\eta^2 = .09$; mean change = 0.16) significantly increased from baseline to post-test, individuals with no prior help-seeking had lower means at baseline ($M = 2.59$ for non-consumers compared to $M = 2.89$ for past consumers). This resulted in steeper linear growth from baseline to post-test for non-consumers and likely explains the difference in rate of linear growth. Clinical distress was not a significant predictor of attitudes towards help-seeking.

Exploratory analyses. Though not hypothesized, prior research has found that targeted contact interventions, such as the TMH workshop, can be more effective for people in distress (e.g., Cepeda-Benito & Short, 1998). To explore further, I ran 2 mixed design ANCOVAs and explored how distress moderated the effect of workshop group on intentions and attitudes. Specifically, a 2 (Time) x 2 (Distress) x 2 (Workshop) mixed design ANCOVA was estimated for each help-seeking outcome. The three-way interaction was not significant for intentions ($F[1, 125] = 0.04$, $p = .83$, *partial* $\eta^2 < .01$) or attitudes ($F[1, 125] = 2.42$, $p = .12$, *partial* $\eta^2 = .02$), suggesting that distress did not moderate the effect of workshop group on intentions or attitudes in this study.

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Discussion

The current study examined the efficacy of a theory-based targeted contact mental health workshop to increase college students' help-seeking attitudes and intentions, as well as decrease social and perceived stigma attitudes towards help-seeking and mental illness. The targeted contact mental health workshop (TMH) was empirically informed by research suggesting that contact interventions targeted to the desired population are most effective to change attitudes. The TMH workshop was compared to an educational intervention approach (UC) focused on topics of stress and anxiety, as well as mental health resources. Whereas the UC workshop was designed to increase students' awareness of stress and anxiety as well as on-campus mental health resources, it did not directly address any stigma-related topics. It was hypothesized that the TMH workshop would have a greater positive impact on help-seeking attitudes and intentions as well as stigma attitudes towards help-seeking and mental illness than the educational approach (UC).

Summary of Results

The results indicated that the effects of exposure to a mental health intervention were complex. As such, below I consider effects specifically for each of the outcomes, categorized as a function of their response to treatment.

Help-seeking attitudes and social stigma. Participation in the study, regardless of treatment condition, led to a modest increase in help-seeking attitudes and decrease in social stigma towards help-seeking for participants from baseline to post-test. However, the TMH workshop failed to have a significantly greater impact on help-seeking attitudes and social stigma than the UC workshop. Furthermore, these effects were not maintained at the 30-day follow-up. Specifically, the growth of attitudes towards help-seeking was

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characterized as a negative quadratic growth model for the entire sample, in which attitudes increased from baseline to post-test and then decreased from post-test to follow-up. Additionally, the growth of social stigma was characterized as a positive quadratic growth model, in which social stigma decreased from baseline to post-test and then increased from post-test to follow-up, though not visually to the same levels as baseline.

Perceived stigma. For perceived stigma of mental illness, there appeared to be an overall small decrease in perceived stigma across the 3 timepoints. Specifically, the growth of perceived stigma was characterized by a negative linear growth model, in which perceived stigma continued to decrease from baseline to post-test to follow-up. The decrease in perceived stigma, however, was not found to be statistically significant from baseline to post-test, speaking to the relatively minimal decrease that occurred across timepoints for this outcome. Additionally, there was no effect of workshop on the perceived stigma variable.

Help-seeking intentions. The greater effect of the TMH workshop on intentions to seek counseling did receive partial support from the analyses. Whereas both workshops appeared to improve help-seeking intentions from baseline to post-test, the TMH workshop had a larger effect. Individuals in the TMH workshop exhibited a steeper linear growth from baseline to post-test compared to individuals in the UC workshop. Unfortunately, neither workshop appeared to have lasting effects on intentions to seek counseling, as seen in the negative quadratic growth model characterizing growth in this variable. Specifically, the overall intentions scores increased from baseline to post-test and then reverted back down at the follow-up for each group.

Contextual variables. An additional aim of this study was to explore how contextual variables (e.g., prior help-seeking, clinical distress, gender) can impact help-seeking. For example, research consistently finds that men are less likely than women to seek mental health services (Nam et al., 2010). Additionally, help-seeking has been shown to vary as a function of clinical distress; Cepeda-Benito and Short (1998) demonstrated that one's level of psychological distress predicted help-seeking behavior, such that those with higher distress levels were more likely to seek help. Other studies, however, have failed to replicate this finding (Vogel et al., 2005), suggesting the possibility of a more complex relation between distress and help-seeking.

The exploration of these contextual variables on help-seeking attitudes and intentions in this study was similarly complex. Surprisingly, baseline distress was not related to any of the help-seeking measures. Additionally, distress did not appear to moderate workshop group on help-seeking attitudes or intentions, suggesting that the workshops did not have a larger impact for those reporting more clinical distress, as we would hope. No gender differences were observed on intentions to seek counseling scores, though females did have more positive attitudes towards help-seeking at post-test compared to males. As expected, prior help-seeking experience did have an effect on both intentions to seek counseling and help-seek attitudes in which both non-consumers and past consumers significantly increased from baseline to post-test, though non-consumers had a larger increase, due to lower baseline scores around help-seeking.

Consideration of Results

Workshop effects. The lack of a workshop effect on attitudes towards help-seeking, social stigma towards help-seeking, and perceived mental illness stigma is

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possibly indicative of the utility of both an educational approach and contact approach of mental health interventions. Specifically, these results are consistent with previous research which indicated that college students exposed to either an educational mental health intervention or a contact mental health intervention resulted in immediate improved attitudes toward help-seeking and mental illness (Gonzalez et al., 2002; Sharp et al., 2006; Yamaguchi et al., 2013). Educational approaches, specifically, are known to impact help-seeking and stigma attitudes by replacing misconceptions with accurate information about mental illness and mental health services without addressing stigma directly (Sharp et al., 2006). Sharp and colleagues (2006) found that by empowering potential users of psychological services, as well as the general public, with more comprehensive and accurate knowledge surrounding general mental illness and help-seeking resources, it can help to increase help-seeking intentions and decrease general stigma. The fact that these attitude changes have been found in educational mental health interventions where stigma was not addressed directly, provides support for the findings in this study of the impact of both the educational UC workshop and the contact TMH workshop.

Despite the lack of workshop effect on the other outcomes, a major finding of this study was the greater effect of the TMH workshop compared to the UC workshop on help-seeking intentions. Previous research shows that while both methods can be effective, contact intervention methods are often more potent than educational methods (Corrigan et al., 2012; Corrigan, Larson, Sells, Niessen, & Watson, 2007). Specifically, while both have been found to positively impact help-seeking intentions, research has

found that contact interventions tend to engender larger increases specifically around help-seeking intentions in emerging adults (Corrigan et al., 2007).

One possible explanation for why the TMH workshop had a larger effect on intentions to seek counseling is the specific content within each workshop. As previously mentioned, the UC workshop was an educational approach, discussing topics such as suicide myths and facts, stress and anxiety information, and on campus resources for mental health services. Alternatively, the TMH workshop had college student consumers speaking about their experiences directly with mental health providers and communicating that mental health problems are not shameful or suggestive of personal incompetence. Previous research suggests that people are more likely to seek treatment if their symptoms are normalized, and they are given an explanation for their symptoms (Schreiber & Hartrick, 2002). People tend to view their problems with less shame and guilt when information suggests that the problem is (a) not their fault, (b) is reversible (Rosen, Walter, Casey, & Hocking, 2000), and (c) will improve through treatment (Mann & Himelein, 2004). These destigmatizing messages were covered in the TMH workshop; less shame and internalized stigma associated with one's mental health has been shown to positively impact help-seeking intentions (Corrigan & Penn, 1999). Additionally, the video highlighted how efficacious treatment can be and how symptoms can improve through therapy. Alternatively, stigma related topics and stories of mental health recovery through psychotherapy were not directly discussed in the UC workshop, which may have resulted in the larger effect observed from the TMH workshop.

Despite the UC workshop not including stigma-related content or consumers speaking about psychotherapy experiences, the workshop still had a positive effect on not

only intentions to seek counseling, but also help-seeking attitudes and social stigma. One reason for this could be the presenters who conveyed the information. Specifically, for both workshops, the messages and information were conveyed between individuals of equal status (i.e., college students). For the TMH workshop, both the consumers in the video as well as the research assistants running the workshop, were of the same developmental status (college students) as the workshop attendees. Similarly, for the UC workshop, the presenters were UMBC peer health educators as well as UMBC students, similar to the workshop attendees. Research suggests that obtaining information from an equal status peer can make a message more relatable, impactful, and salient (Corrigan & Penn, 1999; Rosenstock, Strecher, & Becker, 1988). Research has found that making a health issue salient and relevant contributes to the existence of sufficient motivation to make a health change (Rosenstock et al., 1988). Given the known influence of peers during the period of adolescence and young adulthood (Eisenberg et al., 2012), this study suggests that peers could be used as a source for debunking stereotypes surrounding treatment seeking and general mental illness.

Follow-up effects. A primary hypothesis not supported by this study were the lasting effects of the workshops. Specifically, there were no significant effects found at the 30-day follow-up for any of the outcomes. This raises questions about the sustainability of the effects of the workshops in general, as well as on different aspects of help-seeking. Additionally, it could suggest the need for repeated exposure (e.g., booster sessions) to these mental health workshops. Of note, previous research does suggest that for interventions in general, booster sessions or other maintenance strategies are necessary in order to observe long-term treatment gains (e.g., Eyberg, Edwards, Boogs, &

Foote, 2006). Intervention research has consistently found that long-term treatment gains are not typically observed after only one intervention session (e.g., Clare, Wilson, Carter, Hodges, & Adams, 2001; Dacakis, 2000; Jacobson, 1989). Another possible reason for the lack of lasting effects, however, could be the relatively high help-seeking attitudes and intentions, as well as low stigma scores, at baseline for this sample. Specifically, similar studies using college student samples found lower baseline scores for help-seeking attitudes (*M*s from 1.48 to 2.49 compared to 2.69 in this study) and intentions (*M*s from 1.92 to 2.10 compared to 2.12 in this study) and higher social stigma scores (*M*s from 2.32 to 2.58 compared to 2.20 in this study; e.g., Garriott, Raque-Bogdan, Yalango, Ziemer, & Utley, 2017; Kim & Kendall, 2015; Masuda et al., 2009; Perenc & Radochonski, 2016; Sullivan, Carmic, & Brown, 2015). As such, participants may have received a small positive change in their attitudes after immediate exposure, and then the scores reverted to their original, though already positive, scores.

Effects of contextual variables. The nonsignificant finding for distress was not anticipated given previous research suggesting that clinical distress and intention to seek help are highly correlated (e.g., Cepeda-Benito & Short, 1998; Cramer, 1999). Perhaps the nonsignificant finding between distress and the help-seeking variables was because the relation between distress and help-seeking arises due to specific types of distress experienced rather than the overall general amount of distress. That is, it may be that general distress per se is not as meaningful as the experience of intense problems that may lead to help-seeking (Norcross & Prochaska, 1986). As a result, the use of a general distress measure in the study, rather than identifying those who had or were experiencing an intense problem, may have lessened the potential to find correlations.

Limitations

It is important to note the limitations of the current study. First, caution should be taken when interpreting the results as generalizability is restricted, given that a sample of undergraduate college students from one university served as participants. Nonetheless, college students represent an important population given their age proximity to onset of major mental health concerns, and the fact that nearly 41% of young people ages 18 to 25 attend some college (U.S. Department of Education, 2017). In addition, the recruitment process to run workshops was harder than anticipated, resulting in a smaller sample. The limited sample may have restricted the power to detect effects within the growth models.

In terms of dependent variable measurement, the help-seeking and stigma assessments were based on self-report questionnaire data. Even the attempt to assess for behavioral change (i.e., actual help-seeking behaviors), was based on self-report instead of true behavioral data (i.e., tracking of visits to the counseling center). As a result, a limitation of the findings was the potential for social desirability effects and demand characteristics, which may have introduced some biased responding, particularly if individuals became aware of the study's purpose after engaging in the workshops. An additional measurement limitation was the low reliability of the SSRPH; specifically, the SSRPH's Cronbach's alpha at baseline was .67. This may be an indicator that this instrument was designed from a different context, and pilot studies are needed in the future to enhance its validity and reliability. In populations in which this measure was used to assess college students' social stigma, similar reliabilities (Cronbach's alphas ranging from 0.66 to 0.73) were found (e.g., Andoh-Arthur, Asante, & Osafo, 2015; Vogel et al., 2005; Vogel, Wade, & Haake, 2006).

Further, it is important to note that many differences exist across the two mental health workshops, far more than the contact video component. The individuals providing the workshops, the general topics discussed, and the discussion component in the targeted workshop are just a few examples of these differences. Additionally, the UC workshop did not directly discuss stigma-related topics, and instead was an educational approach which provided general information on mental health and help-seeking. Given these differences, it only allows for speculation about the specific mechanisms that may be most important to make change. While both workshops influenced help-seeking attitudes, intentions, and social stigma, I cannot conclude which specific aspect of each workshop was most important in producing change.

An additional limitation of the current study was the lack of overlap in presenters across workshops. Specifically, the UC workshop had pre-established presenters who were already trained in the UC workshop material. To avoid disruption of the HPO and their personnel, it was not feasible to train the UC presenters on the TMH workshop or ask the HPO to train the undergraduate research assistants used for the TMH workshop on the UC material. Given that the presenters did not overlap across workshops, this resulted in treatment condition being nested within presenter condition, and prohibited treatment of the data as three-levels. Future studies could address this limitation by having the same presenters across each workshop.

Future Directions

Given that the current study used self-reported data, even when trying to assess actual help-seeking behavior, future investigations could try to use true behavioral data. This is particularly relevant given the potential for disparity between having positive

attitudes toward help-seeking and performing actual help-seeking behavior. One way to test this question directly may be by administering the workshop to a group of incoming freshmen and track their use of counseling center services compared to a group of students who were not exposed to the workshop across their college career. Additionally, future studies could address the limited generalizability by examining whether the study findings generalize to other emerging adults (high school students, working emerging adults, family members of consumers). Further, given the lack of lasting effects found, future studies could implement booster sessions to see if the treatment gains would be maintained long-term with repeated exposure to the workshops.

As previously mentioned, given the many uncontrolled variables between the TMH and UC workshops, further research should seek to disentangle which facet of the workshop is most important. It is also important to investigate the role of the workshop presenter in providing these programs. Perhaps the positive effect of both workshops was related to the similar developmental status of the presenters to the workshop attendees. It would be interesting to explore if there would be differences in the outcomes if the workshops were provided by a licensed professional, a doctoral student, or a student-counselor. Understanding the role of the presenter could help counseling centers in planning these programs in the most cost-effective way.

Finally, research into select subpopulations is also recommended given that different groups may come to help-seeking decisions via different pathways (Demyan & Anderson, 2012). These efforts would inform the development of interventions tailored to the needs of select subpopulations, especially those found most resistant to seeking mental health care. For example, research consistently finds that men are less likely than

women to seek mental health services (Nam et al., 2010). Furthermore, select racial and ethnic identities (i.e., African American and Hispanic) have also been found to underutilize mental health services (Ashton et al., 2003; Loya, Reddy & Hinshaw, 2010). It could also be valuable to explore further how one's level of psychological distress influences help-seeking domains. Within the current study, distress was not found to moderate the effect of workshop on help-seeking attitudes and intentions. As such, future studies could probe for the impact of workshops among people with immediate mental health care needs or mental health distress. Efforts aimed at these specific groups seem a sound next step to advance this area of research.

Implications

Overall, both the TMH workshop and the UC workshop had immediate positive impacts on help-seeking attitudes, intentions, and social stigma. This suggests that the currently established campus mental health workshop (UC) was effective in making change in help-seeking and stigma attitudes, despite the lack of content on stigma in mental illness. Although it is difficult to know what specific mechanisms may be contributing to the immediate positive changes in attitudes from these workshops, it appears that both the educational approach of the UC workshop and the targeted contact approach of the TMH workshop may be effective in a college student population.

Taken together, the available evidence provides a firm foundation for the future application of mental health programs in the college setting and suggests that arming potential help-seekers with mental health and help-seeking knowledge has the potential to positively change help-seeking and stigma related attitudes. Both the educational UC workshop and the targeted contact TMH workshop have the benefit of being a

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standardized format which lends itself well to applications throughout the college setting. Health promotion personnel, including counselors, administrators, and faculty could find ways to incorporate these standardized materials from the current workshops into the fabric of higher education, such as during new student orientation or introductory courses.

Furthermore, uncovering the efficacy of a relatively minimal cost intervention could lead to an easy implementation of this strategy across multiple college campuses. The strength of an intervention like this is the potential to reach relatively large proportions of campus populations. More than 6,700 colleges exist in the US alone (U.S. Department of Education, 2017), which suggests a sizeable market for mental health interventions. More importantly, targeting college students is an important group for change, as social attitudes tend to be less crystallized during the college (vs. post-college) years, and age and level of education are the two most powerful demographic factors influencing attitudes and attitudinal processes. This suggests that mental health workshops, like TMH and UC, could have beneficial effects on stigma-relevant thoughts, attitudes, and behaviors of college students. It is the hope that these efforts would usher in greater community inclusivity, reduce stigma and discrimination, and increase healthy behaviors across college campuses.

Appendix A

Measures

Demographic Questionnaire

To which gender identity do you most identify (please mark the box ☑)?
　　　　□ Female　　　　□ Transgender Female　　　　□ Gender Variant/Non-
Conforming
　　　　□ Male　　　　□ Transgender Male　　　　□ Not
Listed_____

What is your birthday (mm/dd/yyyy)?　　_____/_____/_____

Please mark the box ☑ that describes your class standing:
　　　　□ Freshman　　　　□ Junior　　　　□ Other
(explain)_____
　　　　□ Sophomore　　　　□ Senior

Are you of Hispanic, Latino or Spanish origin? Please mark the box ☑ that describes
your national origin:
　　　　□ Hispanic, Latino or Spanish Origin
　　　　□ Unknown whether Hispanic, Latino or of Spanish Origin
　　　　□ Not Hispanic, Latino or of Spanish Origin

Please mark all boxes ☑ that describe your race:
　　　　□ Asian　　　□ Black or African-American　　　　□ Other Race or Ethnicity
Not Listed
　　　　□ White or Caucasian　　　　□ Native Hawaiian or Other Pacific Islander　　□
Unknown

Are you planning to major in psychology? If No, please write in your current or intended
major.
　　　　□ Yes　　　　□ No, I'm majoring in _____　　□ Undecided

Why are you attending this workshop?
　　　　□ Required
　　　　□ Compensation
　　　　□ Interested in topic
　　　　□ Other _____

More than 30% of emerging adults age 18-25 have at least one mental health problem.
Many emerging adults also have close family members or friends with these concerns.
Please answer the following items to the best of your knowledge:

In your lifetime…

1) Have you ever had a mental health problem for which mental health services might have been useful OR was recommended?
    □ Yes   □ No

2) Have you ever received mental health services?
    □ Yes   □ No

    2.a) If Yes to 2): Please rate your prior mental health service experience

1	2	3	4	5
Extremely Negative	Negative	Neutral	Positive	Extremely Positive

    2.b) If answered Yes to 1 and No to 2: Why did you not pursue mental health services?(open ended)

3) Have you ever received help for a mental health problem from a non-mental health professional (e.g., primary care physician; religious leader)?

4) Have you ever received help for a mental health problem from a non-professional (e.g., friend; coach; family member)?

5) Has a close friend or family member ever had a mental health problem for which mental health services might have been useful OR was recommended?
    □ Yes   □ No

6) Has a close friend or family member ever received mental health services?
    □ Yes   □ No

7) Have you ever refused mental health services OR been too afraid or skeptical to seek help for mental health problems you had?
    □ Yes   □ No

In the last 30 days…

1) Have you received any mental health services?
    □ Yes   □ No

    1.a) If Yes to question 1): Please rate your mental health service experience

1	2	3	4	5
Extremely Negative	Negative	Neutral	Positive	Extremely Positive

1.b) If Yes to question 1): Are you still currently receiving mental health services?

    □ Yes   □ No

Only if no to question 1):

2) Have you thought you should receive mental health treatment, but did not?

    □ Yes   □ No

If Yes to question 2): Why have you not pursued mental health services? (open ended)

Only if no to questions 1) and 2):

3) Have other people (e.g., family or friends) told you to seek mental health services?

    □ Yes   □ No

If Yes to question 3): Why have you not pursued mental health services? (open ended)

4) Have you ever received help for a mental health problem from a non-mental health professional (e.g., primary care physician; religious leader)?

5) Have you ever received help for a mental health problem from a non-professional (e.g., friend; coach; family member)?

Attitudes towards Seeking Psychological Professional Help Scale

Directions: Please circle the number that best expresses your level of agreement

	Statement	Disagree	Partly Disagree	Partly Agree	Agree
1.	Although there are clinics for people with mental troubles, I would not have much faith in them.	1	2	3	4
2.	If a good friend asked my advice about a mental problem, I might recommend that he/she see a mental health provider.	1	2	3	4
3.	I would feel uneasy going to a mental health provider because of what some people would think.	1	2	3	4
4.	A person with a strong character can get over mental conflicts by him(her)self, and would have little need of a mental health provider.	1	2	3	4
5.	There are times when I have felt completely lost and would have welcomed professional advice for a personal or emotional problem.	1	2	3	4
6.	Considering the time and expense involved in therapy, it would have doubtful value for a person like me.	1	2	3	4
7.	I would willingly confide intimate matters to an appropriate person if I thought it might help me or a member of my family.	1	2	3	4
8.	I would rather live with certain mental conflicts than go through the ordeal of getting mental health treatment.	1	2	3	4
9.	Emotional difficulties, like many things, tend to work out by themselves.	1	2	3	4
10.	There are certain problems which should not be discussed outside of one's immediate family.	1	2	3	4
11.	A person with a serious emotional disturbance would probably feel most secure in a good mental hospital.	1	2	3	4
12.	If I believed I was having a mental breakdown, my first inclination would be to get professional attention.	1	2	3	4
13.	Keeping one's mind on a job is a good	1	2	3	4

	solution for avoiding personal worries and concerns.				
14.	Having been a psychiatric patient is a blot on a person's life.	1	2	3	4
15.	I would rather be advised by a close friend than by a mental health provider, even for an emotional problem.	1	2	3	4
16.	A person with an emotional problem is not likely to solve it alone; he/she is likely to solve it with professional help.	1	2	3	4
17.	I resent a person- professionally trained or not- who wants to know about my personal difficulties.	1	2	3	4
18.	I would want to get professional attention if I was worried or upset for a long period of time.	1	2	3	4
19.	The idea of talking about problems with a mental health provider strikes me as a poor way to get rid of emotional conflicts.	1	2	3	4
20.	Having been mentally ill carries with it a burden of shame.	1	2	3	4
21.	There are experiences in my life I would not discuss with anyone.	1	2	3	4
22.	It is probably best not to know everything about oneself.	1	2	3	4
23.	If I were experiencing a serious emotional crisis at this point in my life, I would be confident that I could find relief in therapy.	1	2	3	4
24.	There is something admirable in the attitude of a person who is willing to cope with his/her conflicts and fears without resorting to professional help.	1	2	3	4
25.	At some future time I might want to have professional counseling.	1	2	3	4
26.	A person should work out his/her own problems; getting professional counseling would be a last resort.	1	2	3	4
27.	Had I received treatment in a mental hospital, I would not feel that it ought to be "covered up."	1	2	3	4
28.	If I thought I needed professional help, I would get it no matter who knew about it.	1	2	3	4
29.	It is difficult to talk about personal	1	2	3	4

	affairs with highly educated people such as doctors or teachers.				

Intentions to Seek Counseling Inventory

Below is a list of concerns people commonly bring to counseling. How likely would you be to seek counseling if you were experiencing these problems? Please circle the corresponding answer.

1. Weight control
    1 = very unlikely
    2 = unlikely
    3 = likely
    4 = very likely
2. Excessive alcohol use
    1 = very unlikely
    2 = unlikely
    3 = likely
    4 = very likely
3. Relationship differences
    1 = very unlikely
    2 = unlikely
    3 = likely
    4 = very likely
4. Concerns about sexuality
    1 = very unlikely
    2 = unlikely
    3 = likely
    4 = very likely
5. Depression
    1 = very unlikely
    2 = unlikely
    3 = likely
    4 = very likely
6. Conflict with parents
    1 = very unlikely
    2 = unlikely
    3 = likely
    4 = very likely
7. Speech anxiety
    1 = very unlikely
    2 = unlikely
    3 = likely
    4 = very likely
8. Difficulties dating
    1 = very unlikely
    2 = unlikely
    3 = likely

4 = very likely
9. Choosing a major
        1 = very unlikely
        2 = unlikely
        3 = likely
        4 = very likely
10. Difficulty in sleeping
        1 = very unlikely
        2 = unlikely
        3 = likely
        4 = very likely
11. Drug problems
        1 = very unlikely
        2 = unlikely
        3 = likely
        4 = very likely
12. Inferiority feelings
        1 = very unlikely
        2 = unlikely
        3 = likely
        4 = very likely
13. Test anxiety
        1 = very unlikely
        2 = unlikely
        3 = likely
        4 = very likely
14. Difficulty with friends
        1 = very unlikely
        2 = unlikely
        3 = likely
        4 = very likely
15. Academic work procrastination
        1 = very unlikely
        2 = unlikely
        3 = likely
        4 = very likely
16. Self-understanding
        1 = very unlikely
        2 = unlikely
        3 = likely
        4 = very likely
17. Loneliness
        1 = very unlikely
        2 = unlikely
        3 = likely
        4 = very likely

Social Stigma for Receiving Psychological Help

Please read each statement and use the 4-point scale to rate how much you agree with the statement.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

_____ 1. Seeing a psychologist for emotional or interpersonal problems carries social stigma.

_____ 2. It is a sign of personal weakness or inadequacy to see a psychologist for emotional or interpersonal problems.

_____ 3. People will see a person in a less favorable way if they come to know that he/she has seen a psychologist.

_____ 4. It is advisable for a person to hide from people that he/she has seen a psychologist.

_____ 5. People tend to like those less who are receiving professional psychological help.

The Perceived Devaluation Discrimination Scale

Please read each statement and use the 5-point scale to rate how much you agree with the statement.

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

_____ 1. Most people would accept a person who has a mental illness as a close friend.

_____ 2. Most people believe that someone who has a mental illness is dangerous.

_____ 3. Most people believe that a person who has a mental illness is just as trustworthy as the average citizen.

_____ 4. Most people would accept a person who has fully recovered from mental illness as a teacher of young children in a public school.

_____ 5. Most employers will not hire a person who has a mental illness.

_____ 6. Most people think less of a person who has a mental illness.

_____ 7. Most people would be willing to marry someone who has a mental illness.

_____ 8. Most employers will hire a person who has a mental illness if he/she is qualified for the job.

_____ 9. Most people believe that entering a psychiatric hospital is a sign of a personal failure.

_____ 10. Most people will not hire a person who has a mental illness to take care of their children, even if he/she has been well for some time.

_____ 11. Most people in my community would treat a person who has a mental illness just as they would treat anyone.

_____ 12. Most young people would be reluctant to date someone who has a mental illness.

Kessler Distress Scale

These questions concern how you have been feeling over the **past 30 days**. Tick the box below each question that best represents how you have been.

1. During the last 30 days, about how often did you feel tired out for no good reason?				
1. None of the time	2. A little of the time	3. Some of the time	4. Most of the time	5. All of the time

2. During the last 30 days, about how often did you feel nervous?				
1. None of the time	2. A little of the time	3. Some of the time	4. Most of the time	5. All of the time

3. During the last 30 days, about how often did you feel so nervous that nothing could calm you down?				
1. None of the time	2. A little of the time	3. Some of the time	4. Most of the time	5. All of the time

4. During the last 30 days, about how often did you feel hopeless?				
1. None of the time	2. A little of the time	3. Some of the time	4. Most of the time	5. All of the time

5. During the last 30 days, about how often did you feel restless or fidgety?				
1. None of the time	2. A little of the time	3. Some of the time	4. Most of the time	5. All of the time

6. During the last 30 days, about how often did you feel so restless you could not sit still?				
1. None of the time	2. A little of the time	3. Some of the time	4. Most of the time	5. All of the time

7. During the last 30 days, about how often did you feel depressed?				
1. None of the time	2. A little of the time	3. Some of the time	4. Most of the time	5. All of the time

8. During the last 30 days, about how often did you feel that everything was an effort?				
1. None of the time	2. A little of the time	3. Some of the time	4. Most of the time	5. All of the time

9. During the last 30 days, about how often did you feel so sad that nothing could cheer you up?				
1. None of the time	2. A little of the time	3. Some of the time	4. Most of the time	5. All of the time

10. During the last 30 days, about how often did you feel worthless?				
1. None of the time	2. A little of the time	3. Some of the time	4. Most of the time	5. All of the time

Appendix B

Discussion Prompts

- Does anyone have any reactions to the film they'd like to share?

- Do you think any stereotypes about mental illness were challenged?

- How did this film portray seeking professional psychological services?

- Does this video encourage you to seek treatment if you were experiencing distress from a mental illness?

Growth Models

Table C1

Growth Models of Attitudes Towards Seeking Psychological Professional Help Scale

Parameter	Model 1	Model 2	Model 3	Model 5	Model 6
			Estimate (*SE*)		
Fixed Effects					
Intercept	2.79 (0.02)**	2.79 (0.04)**	2.78 (0.04)**	2.82 (0.04)**	2.83 (0.04)**
Time	--	--	0.001 (0.001)	0.05 (0.01)**	0.07 (0.01)**
Time*time	--	--	--	-0.002 (< 0.01)**	-0.002 (< 0.01)**
Random Effects					
Residual var	0.21 (0.02)**	0.07 (0.01)**	0.07 (0.01)**	0.06 (0.01)**	.05 (0.01)**
Intercept var	--	0.14 (0.02)**	0.14 (0.02)**	0.14 (0.02)**	0.16 (0.02)**
Covar	--	--	--	--	-0.001 (< 0.01)
Slope var	--	--	--	--	< 0.01 (< 0.01)
$\Delta\chi^2$ (df)	--	146.83 (1)**	-11.32 (1)	4.76 (1)*	6.22 (2)*

*p < .05, **p < .01

Note. Model 1 = fixed intercept; Model 2 = random intercept; Model 3 = fixed intercept/linear growth, random intercept; Model 4 = fixed/random intercept and linear growth (failure to converge); Model 5 = fixed intercept/linear growth/quadratic growth, random intercept; Model 6 = fixed intercept/linear/quadratic growth, random intercept/linear growth.

Table C2

Growth Models of Social Stigma for Receiving Psychological Help Scale

Parameter	Model 1	Model 2	Model 3	Model 5
		Estima	te (*SE*)	
Fixed Effects				
Intercept	2.11 (0.03)**	2.11 (0.04)**	2.11 (0.04)**	2.07 (0.04)**
Time	--	--	< 0.01 (< 0.01)	-0.05 (0.02)**
Time*time	--	--	--	0.002 (< 0.01)**
Random Effects				
Residual var	0.29 (0.02)**	0.11 (0.01)**	0.11 (0.01)**	0.11 (0.01)**
Intercept var	--	0.18 (0.03)**	0.18 (0.03)**	0.18 (0.03)**
$\Delta\chi^2$ (df)	--	117.75 (1)**	-11.42 (1)	4.02 (1)*

*$p < .05$, **$p < .01$
Note. Model 1 = fixed intercept; Model 2 = random intercept; Model 3 = fixed intercept/linear growth, random intercept; Model 4 = fixed/random intercept and linear growth (failure to converge); Model 5 = fixed intercept/linear growth/quadratic growth, random intercept; Model 6 = fixed intercept/linear/quadratic growth, random intercept/linear growth (failure to converge).

Table C3

Growth Models of The Perceived Devaluation Discrimination Scale

Parameter	Model 1	Model 2	Model 3	Model 5	Model 6
			Estimate (*SE*)		
Fixed Effects					
Intercept	3.02 (0.04)**	3.01 (0.05)**	3.05 (0.05)**	3.05 (0.05)**	3.05 (0.05)**
Time	--	--	-0.005 (< 0.01)**	-0.008 (0.02)	-0.008 (0.02)
Time*time	--	--	--	< 0.01 (< 0.01)	< 0.01 (< 0.01)
Random Effects					
Residual var	0.43 (0.03)**	0.19 (0.02)**	0.18 (0.02)**	0.18 (0.02)**	0.18 (0.02)**
Intercept var	--	0.24 (0.04)**	0.25 (0.04)**	0.25 (0.04)**	0.24 (0.04)**
Covar	--	--	--	--	< 0.01 (< 0.01)
Slope var	--	--	--	--	< 0.01 (< 0.01)
$\Delta\chi^2$ (df)	--	95.2 (1)**	4.28 (1)*	-12.81 (1)	0.69 (2)

z*$p < .05$, **$p < .01$
Note. Model 1 = fixed intercept; Model 2 = random intercept; Model 3 = fixed intercept/linear growth, random intercept; Model 4 = fixed/random intercept and linear growth (failure to converge); Model 5 = fixed intercept/linear growth/quadratic growth, random intercept; Model 6 = fixed intercept/linear/quadratic growth, random intercept/linear growth.

Effect of Workshop

Table D1

Growth Models of Attitudes Towards Seeking Psychological Professional Help Scale by Workshop Group

Parameter	Model A	Model B	Model C
		Estimate (*SE*)	
Fixed Effects			
Intercept	2.78 (0.05)**	2.76 (0.05)**	2.76 (0.05)**
Time	0.05 (0.01)**	0.06 (0.01)**	0.05 (0.02)**
Time*time	-0.002 (< 0.01)**	-0.002 (< 0.01)**	-0.002 (< 0.01)**
Workshop	0.09 (0.07)	0.12 (0.07)	0.13 (0.07)
Time*workshop	--	-0.004 (< 0.01)	0.007 (0.02)
Time*time*workshop	--	--	-0.003 (< 0.01)
Random Effects			
Residual var	0.06 (0.01)**	0.06 (0.01)**	0.06 (0.01)**
Intercept var	0.15 (0.02)**	0.15 (0.02)**	0.15 (0.02)**

*$p < .05$, **$p < .01$
Note. Workshop is coded such that UC = 0 and TMH = 1.

Table D2

Growth Models of Social Stigma for Receiving Psychological Help Scale by Workshop Group

Parameter	Model A	Model B	Model C
		Estimate (*SE*)	
Fixed Effects			
Intercept	2.14 (0.06)**	2.14 (0.06)**	2.14 (0.06)**
Time	-0.05 (0.02)**	-0.05 (0.02)**	-0.06 (0.02)**
Time*time	0.002 (< 0.01)**	0.002 (< 0.01)**	0.002 (< 0.01)**
Workshop	-0.16 (0.08)	-0.15 (0.08)	-0.14 (0.08)
Time*workshop	--	-0.001 (< 0.01)	0.007 (0.03)
Time*time*workshop	--	--	-0.002 (< 0.01)
Random Effects			
Residual var	0.11 (0.01)**	0.11 (0.01)**	0.11 (0.01)**
Intercept var	0.18 (0.03)**	0.18 (0.03)**	0.18 (0.03)**

*$p < .05$, **$p < .01$
Note. Workshop is coded such that UC = 0 and TMH = 1.

Table D3

Growth Models of The Perceived Devaluation Discrimination Scale by Workshop Group

Parameter	Model A	Model B
	Estimate (*SE*)	
Fixed Effects		
Intercept	3.12 (0.07)**	3.10 (0.07)**
Time	-0.005 (< 0.01)**	-0.002 (< 0.01)
Workshop	-0.13 (0.10)	-0.09 (0.10)
Time*workshop	--	-0.006 (< 0.01)
Random Effects		
Residual var	0.18 (0.02)**	0.18 (0.02)**
Intercept var	0.24 (0.04)**	0.24 (0.04)**

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

Note. Workshop is coded such that UC $= 0$ and TMH $= 1$.

Appendix E

Effect of Contextual Variables

Table E1

Growth Models of Intentions to Seek Counseling by Gender

Parameter	Model A	Model B	Model C
		Estimate (*SE*)	
Fixed Effects			
Intercept	2.35 (0.07)**	2.36 (0.08)**	2.34 (0.08)**
Time	0.10 (0.02)**	0.09 (0.22)**	0.11 (0.03)**
Time*time	-0.003 (< 0.01)**	-0.003 (< 0.01)**	-0.004 (< 0.01)**
Gender	0.12 (0.10)	0.10 (0.10)	0.08 (0.10)
Time*gender	--	0.003 (0.004)	-0.03 (0.04)
Time*time*gender	--	--	0.001 (< 0.01)
Random Effects			
Residual var	0.22 (0.02)**	0.22 (0.02)**	0.22 (0.02)**
Intercept var	0.22 (0.04)**	0.22 (0.04)**	0.22 (0.04)**

*p < .05, **p < .01
Note. Gender is coded such that Male = 0 and Female = 1.

Table E2

Growth Models of Intentions to Seek Counseling by Prior Help-Seeking

Parameter	Model A	Model B	Model C
		Estimate (*SE*)	
Fixed Effects			
Intercept	2.35 (0.06)**	2.33 (0.06)**	2.33 (0.06)**
Time	0.09 (0.02)**	0.11 (0.02)**	0.10 (0.03)**
Time*time	-0.003 (< 0.01)**	-0.003 (< 0.01)**	-0.003 (< 0.01)**
Prior HS	0.19 (0.10)	0.26 (0.10)*	0.28 (0.11)*
Time*prior HS	--	-0.01 (0.004)*	0.008 (0.05)
Time*time*prior HS	--	--	-0.001 < 0.01)
Random Effects			
Residual var	0.22 (0.02)**	0.22 (0.02)**	0.22 (0.02)**
Intercept var	0.22 (0.04)**	0.22 (0.04)**	0.22 (0.04)**

*p < .05, **p < .01
Note. Prior help-seeking is coded such that No = 0 and Yes = 1.

Table E3

Growth Models of Intentions to Seek Counseling by Clinical Distress

	Model A	Model B	Model C
Parameter	Estimate (*SE*)		
Fixed Effects			
Intercept	2.39 (0.08)**	2.40 (0.08)**	2.41 (0.08)**
Time	0.10 (0.02)**	0.10 (0.02)**	0.10 (0.03)**
Time*time	-0.003 (< 0.01)**	-0.003 (< 0.01)**	-0.003 (< 0.01)**
Distress	0.06 (0.10)	0.03 (0.10)	0.02 (0.10)
Time*distress	--	0.004 (< 0.01)	-0.01 (0.04)
Time*time*distress	--	--	< 0.01 (< 0.01)
Random Effects			
Residual var	0.22 (0.02)**	0.22 (0.02)**	.22 (0.02)**
Intercept var	0.22 (0.04)**	0.22 (0.04)**	.22 (0.04)**

*$p < .05$, **$p < .01$
Note. Clinical distress is coded such that None = 0 and Mild or more = 1.

Table E4

Growth Models of Attitudes Towards Seeking Psychological Professional Help Scale by Gender

	Model A	Model B	Model C
Parameter	Estimate (*SE*)		
Fixed Effects			
Intercept	2.71 (0.05)**	2.70 (0.05)	2.71 (0.05)**
Time	0.05 (0.01)**	0.06 (0.01)**	0.06 (0.02)**
Time*time	-0.002 (< 0.01)**	-0.002 (< 0.01)**	-0.002 (< 0.01)**
Gender	0.21 (0.07)**	0.22 (0.07)**	0.22 (0.07)**
Time*gender	--	-0.003 (< 0.01)	-0.01 (0.02)
Time*time*gender	--	--	< 0.01 (< 0.01)
Random Effects			
Residual var	0.06 (0.01)**	0.06 (0.01)**	0.06 (0.01)**
Intercept var	0.13 (0.02)**	0.13 (0.02)**	0.13 (0.02)**

*$p < .05$, **$p < .01$
Note. Gender is coded such that Male = 0 and Female = 1.

Table E5

Growth Models of Attitudes Towards Seeking Psychological Professional Help Scale by Prior Help-Seeking

Parameter	Model A	Model B	Model C
		Estimate (*SE*)	
Fixed Effects			
Intercept	2.75 (0.05)	2.74 (0.05)**	2.74 (0.05)**
Time	0.05 (0.01)**	0.06 (0.01)**	0.06 (0.01)**
Time*time	-0.002 (< 0.01)**	-0.002 (< 0.01)**	-0.001 (< 0.01)**
Prior HS	0.21 (0.07)**	0.27 (0.08)**	0.27 (0.08)**
Time*prior HS	--	-0.009 (< 0.01)**	-0.003 (0.03)
Time*time*prior HS	--	--	-0.0001 (< 0.01)
Random Effects			
Residual var	0.06 (0.01)**	0.06 (0.01)**	0.06 (0.01)**
Intercept var	0.13 (0.02)**	0.14 (0.02)**	0.14 (0.02)**

*$p < .05$, **$p < .01$
Note. Prior help-seeking is coded such that No = 0 and Yes = 1.

Table E6

Growth Models of Attitudes Towards Seeking Psychological Professional Help Scale by Clinical Distress

Parameter	Model A	Model B	Model C
		Estimate (*SE*)	
Fixed Effects			
Intercept	2.81 (0.06)**	2.80 (0.06)**	2.80 (0.06)**
Time	0.05 (0.01)**	0.05 (0.01)**	0.05 (0.02)**
Time*time	-0.002 (<0.01)**	-0.002 (<0.01)**	-0.002 (< 0.01)**
Distress	0.03 (0.07)	0.04 (0.07)	0.05 (0.08)
Time*distress	--	-0.001 (< 0.01)	0.008 (0.02)
Time*time*distress	--	--	-0.003 (< 0.01)
Random Effects			
Residual var	0.06 (0.01)**	0.06 (0.01)**	0.06 (0.01)**
Intercept var	0.14 (0.02)**	0.14 (0.02)**	0.14 (0.02)**

*$p < .05$, **$p < .01$
Note. Clinical distress is coded such that None = 0 and Mild or more = 1.

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