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Masculinity and psychological help seeking: An application of Social Identity Theory

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Masculinity and psychological help seeking:

An application of Social Identity Theory

by

Patrick J. Heath

A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Major: Psychology (Counseling Psychology)

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Iowa State University

Ames, Iowa

2019

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ABSTRACT

According to Social Identity Theory, men should demonstrate a stronger link between masculinity and the avoidance of psychological help seeking relative to women, as their in-group social identity status relies on the demonstration of 'masculine' behavior. However, this assertion has yet to be directly tested. Using structural equation modeling, this study addressed this omission by testing the invariance of a previously identified help seeking model across men and women, using samples of both college students and community adults. Specifically, the model examined the link between masculinity and several factors linked to psychological help seeking (i.e., help-seeking stigma, disclosure risks, attitudes, and intentions). In addition, self-compassion has been identified as a potential buffering factor for the link between masculinity and help-seeking outcomes, though this has only been tested with men. As such, self-compassion was included as a moderating variable in the study, to examine any differences in the moderating effect between men and women. Finally, this study also tested a model examining the relation between masculinity and initial help-seeking decisions (i.e., deciding to access online information about mental health or psychological services), as this had yet to be examined in previous studies.

CHAPTER 1

OVERVIEW

Rates of mental health service use are generally low relative to the rates of mental illness (e.g., Andrews, Issakidis, & Carter, 2001; Eisenberg, Hunt, Speer, & Zivin, 2011; Wang et al., 2005; 2007), and men seem particularly at risk for avoiding psychological services (Eisenberg et al., 2011). Social Identity Theory (SIT), which posits that behavior is guided by individuals' desire to maintain 'in-group' social identity and status (Hogg, 2016), can be used to explain men's underuse of services, as men may be more likely to avoid seeking psychological help in an effort to maintain their masculine identity. Scholars note that socialized masculine gender norms, or expectations for how men 'should' behave, are incongruent with the decision to seek out psychological help when in distress, resulting in the avoidance of services (Addis & Mahalik, 2003; Mansfield, Addis, Courtenay, 2005). Consistent with this assertion, research has found that men who report higher levels of masculine norm adherence also report more negative attitudes and lower willingness to seek out psychological help (see Vogel & Heath, 2016 for a review). Two masculine norms have been found to be particularly salient: self-reliance and emotional control (e.g., Burns & Mahalik, 2011; Heath, Brenner, Vogel, Lannin, & Strass, 2017; Pederson & Vogel, 2007). *Self-reliance* is the notion that men should not ask others for help and that they should find ways to solve problems on their own (Burns & Mahalik, 2011), while *emotional control* is the belief that men should remain stoic, and should not share their emotions with other people (Burns & Mahalik, 2011). Based on SIT, these two norms are particularly important as they directly contradict both the act of asking a mental health professional for help with a psychological problem (i.e., incongruent with self-reliance), and the emotional vulnerability often required in mental health treatments (i.e., incongruent with emotional control).

While the link between masculine norm adherence and more negative help-seeking attitudes and intentions has been established, research has identified additional factors that serve as either more proximal help-seeking barriers (i.e., mediating factors), or help buffer the relationship between masculine norms and help seeking outcomes (i.e., moderating factors). Identifying these factors is important because socialized gender norms are difficult to change, and mediating or moderating factors might be more successful intervention points. Two particularly relevant mediating variables have been identified, in previous literature, including help-seeking stigma, and risks associated with disclosing to a counselor or therapist. *Help-seeking stigma* refers to fear that seeking psychological help will result in one's loss of self-worth because of stereotypes or discrimination (Vogel, Wade, & Haake, 2006). Risks associated with self-disclosing to a counselor, often referred to as *self-disclosure risks*, are the perceived risks (e.g., fear of being judged) an individual perceives with disclosing personal information to a counselor (Vogel & Wester, 2003). These two constructs have been found to mediate the link between masculine norms broadly (Pederson & Vogel, 2007), and self-reliance and emotional control specifically (Heath et al., 2017), and psychological help-seeking outcomes. Through the lens of SIT, these factors appear to be important for maintaining masculine identity (i.e., maintain in-group status) as they further discourage the act of seeking help.

In turn, there are contextual, or moderating, factors that might influence the relationship between masculinity and psychological help-seeking (Addis & Mahalik, 2003; Vogel & Heath, 2016). One recently identified moderating factor for men is self-compassion (Heath et al., 2017), though it is unclear whether this holds true for women. *Self-compassion* is the concept of treating oneself with kindness and acceptance even when experiencing feelings of suffering, failure, or inadequacy (Neff, 2003). Previous research found that men who reported increased

levels of self-compassion demonstrated a weaker link between masculine norm adherence and help-seeking barriers (Heath et al., 2017). One explanation for this is that self-compassion might help alleviate the internalized pressures men feel while trying to conform to masculine gender role norms, therefore lowering the stigma or risks associated with seeking help. This theory fits within a SIT framework.

Despite the demonstrated link between masculinity and psychological help seeking, a number of clear limitations have yet to be fully addressed in the literature. First, the extant literature generally omits women and uses all-male samples. The use of all-male samples is implicitly based on the tenets of SIT as men are hypothesized to be more heavily influenced by their desire to maintain masculine status through the enactment of normative behavior. However, in order to actually test the tenets of the theory, examinations utilizing samples of both men and women are necessary. Specifically, SIT suggests that men, relative to women, should demonstrate a stronger link between their masculine norm adherence and help-seeking barriers, as they might feel more pressure to act in ways congruent with their 'in-group' expectations (i.e., avoid counseling to maintain status as a man). In theory, women should not feel this same pressure, as their 'in-group' status as a woman is less dependent on normative behaviors typically associated with masculinity. It is probable that self-compassion does not demonstrate the same moderating effect between masculine norms and help-seeking outcomes for women, as women may not feel the same societal pressures to maintain in-group status by avoiding psychological help. However, these assertions have yet to be tested, and until a direct examination is conducted, they remain only theoretical in nature.

A further justification for directly testing the assertions of SIT comes from scholars that argue women's behavior can also be influenced by masculine norms (e.g., Parent & Smiler,

2013; Sloan et al., 2015). In line with this, while men have been shown to seek help at lower rates than women, there is also evidence that women avoid seeking psychological help as well. Specifically, in one study, only 39% of college women experiencing mental health concerns sought psychological help, which was just 9% higher than the 30% of men who sought help (Eisenberg et al., 2011). One possibility is that SIT does not actually explain sex differences in help seeking, and women who adhere to traditionally masculine norms also avoid seeking psychological services. This possibility has received some preliminary empirical support (e.g., Heath, Brenner, Vogel, & Martyr, 2016; McDermott, Currier, Naylor, & Kuhlman, 2017), though these studies did not examine sex differences in the strengths of the relations between variables. Additionally, they did not assess self-reliance and emotional control directly, nor did they include self-compassion as a potential moderating variable. As such, a study assessing how masculine norm adherence is related to help-seeking stigma, disclosure risks, attitudes, and intentions for both men and women is needed to fully test the assertions of SIT.

Another important limitation of the extant literature is that research has largely utilized college student samples, and typically focuses on help-seeking attitudes and intentions as proxy measures of actual behavioral outcomes. This is problematic, as some scholars have found that attitudes and intentions do not account for all the variance in actual behavioral outcomes (e.g., Sheeran, 2002). Recent research has begun to address this limitation by examining actual behavior, like the decision to seek out online information about mental health or psychological services (e.g., Lannin, Vogel, Brenner, Abraham, & Heath, 2016). Additional research is needed that includes these types of behavioral outcomes to further expand this area of study and to begin addressing the limitations of previous research.

Therefore, this study addresses a number of gaps in the extant literature. First, this study examines both men's and women's conformity to traditionally masculine gender role norms and their relations to psychological help seeking, while including frequently cited mediating and moderating variables. The inclusion of both men and women allows for an examination of an assumption based on SIT, that men's help-seeking avoidance will be more strongly related to their adherence to masculine gender norms than women. Theoretically, if SIT holds true, men will report stronger relations between masculine norms and help-seeking outcomes (i.e., help-seeking attitudes, intentions, and the decision to seek out online help-seeking information) than women, as their help-seeking outcomes will be more strongly tied to their desire to maintain masculine status.

Second, this project also examines sex differences in the roles of mediating (i.e., help-seeking stigma and disclosure risks) and moderating (i.e., self-compassion) variables for the relationship between gender role norms and help-seeking outcomes. Previous research has identified that help-seeking stigma and risks associated with self-disclosing to a counselor mediate (e.g., Heath et al., 2017; Pederson & Vogel, 2007), and that self-compassion moderates (Heath et al., 2017), the relationship between masculine gender norms and help-seeking outcomes for men, though these factors have yet to be tested with samples of women. As such, this study extends the current literature by testing the invariance of these mediating and moderating factors across both men and women. Additionally, as only one study has found the moderating effect of self-compassion for men, this research will attempt to replicate these findings across multiple samples (both a college and community sample).

Third, this project examines actual behavioral outcomes (i.e., the initial decision to seek out online information about mental health and psychological services) in addition to examining

help-seeking attitudes and intentions. This is important, as the majority of research on masculinity and help-seeking behavior uses proxy variables for behavior, including help-seeking attitudes and intention. As such, the decision to seek online mental health and counseling information is examined in addition to help-seeking attitudes and intentions.

CHAPTER 2

LITERATURE REVIEW

Men have been shown to underutilize psychological services relative to women, and the prevailing explanation for this is that men are expected to conform to masculine gender norms which are incongruent with seeking psychological help (Addis & Mahalik, 2003). Based on assertions from SIT, women are not expected to behave in traditionally ‘masculine’ ways, as they are not under the same pressures to maintain in-group masculine status. As such, they should not demonstrate as strong of a link between their adherence to masculine gender role norms and psychological help-seeking outcomes. However, this has yet to be directly tested. The goal of this research is to examine sex differences in the relationships between masculine norm adherence and help seeking, while including previously identified mediating and moderating variables. In the following sections I first discuss psychological help-seeking behavior, and the concerns associated with the underuse of psychological services. I will then discuss Social Identity Theory (SIT) and how it applies to men’s adherence to masculine gender role norms and their avoidance of psychological services. As part of this discussion, I will also review the literature on men’s psychological help-seeking and women’s adherence to traditionally masculine gender role norms. Subsequently, I will discuss mediating and moderating variables that have been shown to influence the link between masculinity and help-seeking outcomes, including a discussion of two mediating variables (help-seeking stigma and risks associated with self-disclosing to a counselor), as well as a moderating variable (self-compassion), that have been found to be particularly salient in the context of masculinity. Finally, I will conclude by summarizing the model to be tested, and the contributions this study will make to the extant literature.

Psychological Help Seeking

Help-Seeking Rates

Mental health concerns are believed to impact roughly 25% of people worldwide (World Health Organization, 2001). Currently, estimates of yearly prevalence of mental illness in the United States are 17.9%, indicating that an estimated 43.4 million Americans over the age of 18 experience some form of mental illness in any given year (National Institute of Mental Health, 2015). Fortunately, evidence suggests that seeking psychological help can reduce the detrimental effects of mental health concerns (Kessler et al., 2001), and that therapy is an effective treatment for mental health concerns (Wampold & Immel, 2015). Unfortunately, most people who experience these concerns do not actually seek out the psychological help that could benefit them, and those who actually do seek out services often delay their initial service use or drop out prematurely (Wang, Berglund, Olfson, & Kessler, 2004). As such, mental illness has continued to be detrimental worldwide, accounting for approximately 13% of the global economic burden of disease (Collins et al., 2011).

A number of epidemiological studies have sought to estimate the rate of mental health service use. For example, worldwide estimates suggest that only between 1% and 15% of those experiencing mental illness in a given year actually seek out mental health services (Demyttenaere et al., 2004). While these global rates have been suggested, other studies have found differences in more specific populations. For example, Andrews and colleagues (2001) examined a sample of 1,422 Australian individuals who were experiencing a mental health concern, and found that 63% of the participants had not consulted with a mental health professional. Furthermore, only 22% of the sample had utilized an evidenced based treatment, indicating that 15% had utilized a non-evidenced-based treatment.

In the United States, a national survey indicated that 32.9% of individuals with a mental health concern sought any psychological help (i.e., medical, psychiatric, or therapy) in a given year (Kessler, Demler, et al., 2005). However, when only examining those with emotional disorders (i.e., eliminating serious and persistent mental health concerns), the help-seeking rate was only 20.1% (Kessler, Demler, et al., 2005). Additional analyses have been conducted in the United States, specifically examining help-seeking rates across type of mental health concern and age. Results suggested that approximately 19% of individuals in the United States with an anxiety disorder sought help in a given year, approximately 37% of those with a mood disorder sought help, and that the highest prevalence of service use occurred between the ages of 35-54 (Mackenzie, Reynolds, Cairney, Streiner, & Sareen, 2012). Another study found a slightly higher rate of overall help-seeking behavior for psychological concerns, noting that 41.1% of a distressed United States sample had sought help in the past year (Wang et al., 2005). However, despite this higher overall rate, the results indicated that rates of seeking help from a therapist or psychologist were much lower, estimated at just 16.0%.

Most mental health concerns are first experienced between the ages of 18-24, though many in this age range do not seek help for their mental health concerns (Kessler, Berglund, et al., 2005; Kessler, Demler, et al., 2005). Data from the National Epidemiologic Study on Alcohol and Related Concerns suggests that almost half of college-aged individuals (i.e., both college-attending and non-college-attending individuals) experienced a mental illness in a given year, though fewer than 25% of those with a mental illness actually sought out help (Blanco et al., 2008). Congruently, rates of mental illness have been increasing on college campuses over the past two decades (Hunt & Eisenberg, 2010; Twenge et al., 2010). In another epidemiological study conducted across 26 college campuses across the United States, researchers used a sample

of 14,175 college students across the United States to examine mental health and help-seeking rates (Eisenberg et al., 2011). Researchers found that 32% of surveyed students reported having a mental health concern (i.e., 4,300 students), and of those with a concern, only 36% received any treatment in the previous year (Eisenberg et al., 2011). However, among those experiencing a concern, only 24.9% actually sought out counseling services, as many just relied on the support of friends and family, or the use of medication (Eisenberg et al., 2011). These data suggest the need for additional research on mental health help seeking focused specifically on this age range.

Overall, untreated mental health concerns continue to negatively impact people over the course of their lives. Some suggest that this is a growing public health crisis (Eisenberg et al., 2011), as mental illnesses have severe consequences, contributing to economic, social, and health burdens on both an individual and societal level (Ettner, Frank, & Kessler, 1997; Kessler et al., 1998). As such, researchers have sought to examine demographic factors that help predict individuals' decisions to seek out psychological help to better address the general underuse of services and help prevent the long term effects of treatment avoidance.

Sex Differences

One key demographic factor that has been examined in relation to psychological help seeking is biological sex. Some studies suggest that sex differences in psychological help-seeking vary based on type of diagnosis (e.g., bipolar disorder: Kessler, Rubinow, Holmes, Abelson, & Zhao, 1997; schizophrenia: Koichi, Miyamoto, Akiyama, & Takamura, 2009; and substance abuse: Buscemi et al., 2010), age (Husaini, Moore, & Cain, 1994), or type of help being sought (i.e., formal versus informal help; Buscemi et al., 2010). However, broader epidemiological studies consistently find that men seek therapy at lower rates than women. For example, sex differences in help-seeking behavior have been found across a number of

epidemiological studies, with women being almost twice as likely to consult with a mental health professional as men in one study of 1,422 distressed Australian adults (OR = 1.9; Andrews et al., 2001) and just over one and a half times as likely in another study that included 1,443 distressed adults in the United States (OR = 1.6; Wang et al., 2005). In another study, researchers collected data from 14,175 college students across the United States (Eisenberg et al., 2011). Of the 4,300 students reporting any mental health concern, 38.8% of women sought out any form of psychological treatment compared with 29.8% of men (Eisenberg et al., 2011). When use of psychotropic medication as a sole treatment was removed from analyses, (i.e., only psychotherapy services were examined), 29.1% of women and 18.6% of men sought out help (Eisenberg et al., 2011). This has led to a general conclusion that men, in particular, are at risk for avoiding psychological services.

Social Identity Theory

Based upon the epidemiological research previously cited, theorists have attempted to explain why men are generally less likely to seek help than women. Social Identity Theory (SIT; Hogg & Abrams, 1988; Tajfel & Turner, 1979) is a general social psychological theory that can be used to explain this difference. The theory was originally developed as a way of explaining intergroup relations, conflict, and cooperation (Tajfel & Turner, 1979), but has expanded over time to include explanations of the role of self and identity in behavior (Hogg, 2016). Initially, Tajfel (1972) theorized that social identity was an “individual’s knowledge that he belongs to certain social groups together with some emotional and value significance to him of this group membership” (p. 292). Later, SIT expanded to include explanations of how people categorize themselves into groups based on interrelated sets of attributes like attitudes, behaviors, or beliefs (Hogg, 2016). Specifically, the theory states that individuals begin to see themselves as a

member of a social group based on how well they fit with a ‘prototypical’ group member. Hogg (2016) notes that this categorization process is often, if not always, binary, resulting in the notion of belonging to a group (i.e., being an ‘in-group’ member) or not belonging to a group (i.e., being an ‘out-group’ member).

The theory posits that behavior is a product of “a wider social context of group memberships” (p. 67; Terry, Hogg, & White, 2000). Specifically, the social categories through which people define themselves (e.g., biological sex) end up serving as a point of self-evaluation (Terry et al., 2000). When this happens, individuals draw attention to the differences in attitudes, beliefs, and behaviors between their in-group and out-groups, thus creating a prototypic model of what an in-group member would believe or how they would behave (i.e., self-categorization; Terry et al., 2000). Subsequently, these prototypic beliefs and behaviors become more strongly favored and adhered to as a way of maintaining and accentuating in-group status (Terry et al., 2000). As a result, members of a social in-group will try to maintain, or protect, their in-group status through their behavior (Hogg, 2016).

In the context of help-seeking behavior and related outcomes, this suggests that individuals who are members of a group that values help-seeking behavior will be more likely to seek help, as it would align with their in-group expectations. Alternatively, and perhaps more detrimentally, individuals who belong to groups who look negatively on seeking help will be less likely to do so, thus maintaining their status as an in-group member. When applied to men and help seeking, SIT would suggest that men would avoid seeking psychological help in an effort to protect their in-group status as a man. This theory explains findings related to masculine ‘scripts’ that impact men’s psychological help-seeking decisions (Mahalik, Good, & Englar-Carlson, 2003). Specifically, Mahalik, Good, and Englar-Carlson (2003), identified different

masculine scripts that helped guide men's behavioral patterns, and applied them to men's resistance to seek psychological help. The authors indicated that men associate seeking psychological help with dependence, vulnerability, and emotional disclosure, which would violate some of the social scripts they are expected to adhere to. For example, men adhering to a 'Tough Guy' script might view help seeking as a form of weakness, directly contradicting his self-identity as a 'tough guy.' As such, engaging in help seeking would be a risky venture as it could result in the loss of in-group identity status.

Of particular importance is one of SIT's central tenets that, as the salience of an individual's in-group membership increases, in-group expectations or norms are more impactful on subsequent attitudes and behavior (Terry et al., 2000). To this end, scholars have been able to assess how salient certain aspects of identity are to an individual. For example, in the masculinity literature, scholars often assess men's conformity to stereotypically masculine gender norms as an indicator of how salient a man's masculine identity is to his general social identity. This has most commonly been achieved by assessing how much an individual identifies with aspects of a traditionally masculine identity. A number of measures have been developed for this purpose, all with the goal of assessing an individual's conformity to masculine beliefs or behaviors, also known as gender role norms (Levant et al., 1992; Mahalik et al., 2003; Thompson & Pleck, 1986). Indeed, higher scores on these assessments of masculinity have been used to suggest that traditionally masculine identity standards are more pronounced in that individual, and take on more salience in their day to day behavior. For example, one study found that men who reported their masculine identity being important to them were also more likely to endorse stereotypically masculine beliefs and behaviors (de Visser & McDonnell, 2013).

Masculine Gender Role Adherence and Help Seeking

Social norms have been defined as standards, or rules, that guide behavior (Cialdini & Trost, 1998), including cultural values, traditions, rules, and customs (Sherif, 1936). According to SIT, these types of norms help define social groups, and adherence to these norms helps determine group membership (Hogg, 2016). When applied to masculinity, masculine gender role norms are the rules or standards to which ‘masculine’ behavior is determined, and adhering to these norms indicates men are meeting “societal expectations for what constitutes masculinity” (p. 3; Mahalik, Locke, et al., 2003). These norms are believed to be socially learned, developing through interactions with peers, parents, or media (Addis, Reigeluth, & Schwab, 2016), or through observations of what is considered appropriate behavior for men (Mahalik, Locke, et al., 2003). Through this process, it is believed that boys learn ‘acceptable’ behaviors, thoughts, and feelings (e.g., ‘boys don’t cry’; Mintz & O’Neil, 1990). Over time, these thoughts, feelings, and behaviors become ingrained as masculine ‘scripts’ which are then enacted in various contexts (Mahalik, Good, & Englar-Carlson, 2003).

Early work examining gender role norms in the psychology of men and masculinity field led to the creation of a number of scales designed to assess the construct. For example, masculine gender role norms have been assessed using the Masculinity Scale (Brannon, 1985), Male Role Norms Inventory (Thompson & Pleck, 1986), Gender Role Conflict Scale (O’Neil, Helms, Gable, Davis, & Wrightsman, 1986), Masculine Gender Role Stress Scale (Eisler & Skidmore, 1987), and the Male Role Norms Inventory (Levant, et al., 1992). However, more contemporary research has noted that these older scales failed to adequately capture the full range of masculine norms (e.g., several of the scales only included four norms), and that they often assessed whether individuals believed these norms to be true rather than whether or not

they adhered to them (see Addis et al., 2016 for a review). As a result, Mahalik, Locke, et al. (2003), designed a scale to more adequately assess the multidimensionality of masculine gender role norms. Eleven different masculine norms were identified, and a 94-item *Conformity to Masculine Norms Inventory* (CMNI) was created (Mahalik, Locke, et al., 2003). Specifically, these norms were: winning, emotional control, risk-taking, violence, dominance, playboy, self-reliance, primacy of work, power over women, disdain for homosexuals, and pursuit of status. Subsequent evaluations of the CMNI (i.e., Parent & Moradi, 2009) suggested that the measure might only assess nine distinct norms, including: winning, emotional control, risk-taking, violence, playboy, self-reliance, primacy of work, power over women, and heterosexual self-presentation. This evaluation resulted in the creation of a briefer, 46-item measure of masculine norm adherence, the *Conformity to Masculine Norms Inventory-46* (CMNI-46; Parent & Moradi, 2009). Early conceptualizations of the CMNI and CMNI-46 indicated that the measure could be used to assess both individual masculine norms, as well as a general, 'global,' conformity to masculine norms construct. As such, research has examined the associations of both a general norm adherence construct as well as conformity to specific norms, with a variety of social and health outcomes (see Addis et al., 2016 for a review). For example, studies have found the general score is related to higher energy drink consumption (Wimer & Levant, 2013), less health-promoting behavior (Levant & Wimer, 2014), and muscle dissatisfaction (Griffiths, Murray, & Touyz, 2015). Specific subscales have also been linked to outcomes, including risk-taking with higher self-esteem (Parent, Moradi, Rummel, & Tokar, 2011), and the playboy norm with increased drinking behavior (Iwamoto, Cheng, Lee, Takamatsu, & Gordon, 2011).

Masculine gender norms are believed to be incongruent with seeking psychological help (Addis & Mahalik, 2003; Mansfield et al., 2005), and higher overall conformity to masculine

norms has consistently been found to relate with more negative psychological help seeking outcomes (Vogel & Heath, 2016). For example, in one study examining 307 undergraduate men, researchers found that increased conformity to masculine norms significantly predicted more negative attitudes ($\beta = -.41$) and indirectly predicted lower intentions to seek psychological help ($\beta = -.22$; Smith, Tran, & Thompson, 2008). These results have been replicated a number of times using other samples of college men. In a study assessing 137 undergraduate men, higher levels of conformity to masculine norms predicted more negative attitudes toward seeking psychological help ($\beta = -.41$; Levant, Wimer, Williams, Smalley, & Noronha, 2009).

These results have been replicated in general community samples of men as well. For example, in a study examining a diverse sample of 4,773 community-based, adult men, Vogel, Heimerdinger-Edwards, Hammer, and Hubbard (2011), examined the association between conformity to masculine norms and help-seeking attitudes. The results indicated that, overall, men's conformity to masculine norms was directly related to more negative help-seeking attitudes ($\beta = -.21$). The authors also examined specific associations across race/ethnicity and sexual orientation. This link was found for African American men ($\beta = -.41$), European American men ($\beta = -.22$), and Latino American men ($\beta = -.22$), and an indirect effect was found for Asian American men ($\beta = -.27$). For men identifying as gay, the indirect effect of masculine norm adherence on help-seeking attitudes was significant ($\beta = -.25$), while the direct effect was significant for heterosexual men ($\beta = -.21$). Another key aspect of this study was that roughly 46% of the men reported being depressed, indicating the participants included a set of men that could benefit from seeking psychological help. Using this same sample, a subsequent study found that higher adherence to masculine norms predicted more negative help-seeking attitudes across a number of other demographic groups, including level of education, income level, as well

as whether the men lived in rural, suburban, or urban environments (Hammer, Vogel, & Heimerdinger-Edwards, 2013).

A recent meta-analysis summarized the literature on masculinity and help-seeking outcomes, finding that conformity to masculine gender role norms was related to more negative psychological help-seeking outcomes (Wong, Ho, Wang, & Miller, 2017). Specifically, the meta-analysis indicated that across 14 studies, general conformity to masculine norms was inversely related with psychological help seeking outcomes, and had a moderate effect size ($r = -.31$; 95% CI [-.39, -.23]). Results also suggested that this relationship was consistent across both college ($r = -.22$; 95% CI [-.33, -.10]) and community samples ($r = -.41$; 95% CI [-.51, -.30]).

While many studies have examined general adherence to masculine norms and help-seeking outcomes, a growing body of research has focused on two specific masculine norms that appear to be both theoretically and conceptually salient: self-reliance and emotional control (e.g., Heath et al., 2017; Pederson & Vogel, 2007; Wong et al., 2017). *Self-reliance* is the notion that men should not have to ask others for help and that they should find ways to solve problems on their own (Burns & Mahalik, 2011). *Emotional control*, on the other hand, is the belief that men should remain stoic, and should not share their emotions with other people (Burns & Mahalik, 2011). These two norms are particularly important within a SIT framework, as they directly contradict both the act of asking a mental health professional for help with a psychological problem, and the emotional vulnerability required for most mental health treatments.

Congruently, a number of studies have noted that self-reliance and emotional control are related to more negative help-seeking attitudes, and less intent to seek psychological help. For example, in a qualitative review of male military service members who the authors had worked with in a clinical setting, Burns and Mahalik (2011) specifically highlighted that self-reliance, in

their clinical experience, led many men to avoid seeking help because they were reluctant to rely on others to help them cope with their mental health concerns. The authors noted one former client discussed not wanting information about mental health services to discuss his mental health concerns, stating “this is just something I have to learn to live with, and I have to do that myself. Asking someone to fix my problems or crying to someone isn’t going to change a thing, and will probably just make me feel like a sissy” (p. 348; Burns & Mahalik, 2011). The authors also noted that men’s emotional control served as a barrier to seeking services, as many men were reluctant to share their emotional difficulties with others. One client resisted talking about his feelings, noting “Quit prying! Talking about this is only going to make it worse, and it’s no big deal anyway” (p. 349; Burns & Mahalik, 2011). Quantitative studies have also demonstrated the link between self-reliance and emotional control, and psychological help seeking. For example, in the Wong et al. (2017) meta-analysis, both self-reliance ($r = -.20$; 95% CI [-.27, -.12]) and emotional control ($r = -.30$; 95% CI [-.37, -.23]) demonstrated a significant, inverse effect on psychological help seeking across 10 studies. As such, these two masculine norms have become the focus for research examining masculine norm adherence and psychological help-seeking outcomes (e.g., Heath et al., 2017).

While the extant literature indicates that masculine norm adherence predicts less psychological help seeking, the overwhelming majority of research in this area utilizes all male samples. This is based off an implicit assumption that women’s help-seeking beliefs and behaviors are not subject to traditionally masculine norms. According to SIT, women’s in-group status does not rest on the relationship between their psychological help-seeking behavior and masculine norms; however, this has yet to be directly tested. In fact, there is a general lack of research on the relationship between women’s adherence to masculine norms and their help-

seeking outcomes. This is problematic as women can also adhere to traditionally masculine norms (Parent & Smiler, 2013), and have also demonstrated low help-seeking rates relative to their rates of mental illness (Eisenberg et al., 2011). As such, this study examines sex differences in how masculine norm adherence predicts psychological help seeking.

Women and Masculine Norms

Traditionally, research examining gendered norm adherence focuses on adherence to norms that are congruent with an individual's biological sex (i.e., masculine norms in men; Levant et al., 2013; O'Neil, 2008). However, gendered behavior is not limited by an individual's biological sex. For example, for roughly 40 years, theorists and researchers have shown that both men and women can enact traditionally masculine behavior. Sandra Bem was one of the first scholars to discuss this possibility, and much of her work focused on the concept of psychological androgyny, or the ability for all people, regardless of biological sex, to display both masculine and feminine traits (e.g., Bem & Lewis, 1975). Congruently, the validity to measure masculine norm adherence across both men and women has been established. For example, Smiler (2006) found convergent validity evidence for the CMNI in a sample of 688 men and women by noting similar relationships for men and women between masculine norm adherence and measures of sexism.

A more stringent test of the measures across men and women was conducted in 2013, when the measurement invariance of the CMNI-46 was examined (Parent & Smiler, 2013). Results indicated that the CMNI-46 demonstrated configural and metric invariance, suggesting that the measure was estimating masculine norms the same way across both men and women. The measure did not display scalar invariance, however, because men consistently scored higher on their masculine norm adherence. Parent and Smiler (2013) concluded that the CMNI-46

could be used across men and women to examine the relationships between masculine norm adherence and other constructs. In line with this, studies have started to demonstrate how women's adherence to masculine norms relates to other variables. In one study of 143 female college students, women's adherence to masculine norms was related to increased body image concerns (Steinfeld, Zakrajsek, Carter, & Steinfeldt, 2011). In another study, both men's and women's conformity to masculine norms related to career interests (Tokar, Thompson, Plaufcan, & Williams, 2007).

There is some preliminary evidence that women who adhere to masculine norms also display reluctance to seek help. For example, in a study of general health behavior, masculine norm adherence predicted lower engagement in positive health behaviors (e.g., lower scores on fruit intake) and higher scores on the negative health behavior inventory for both men and women (Sloan, Connor, & Gough, 2015). However, this study examined only physical health behaviors, failing to examine psychological health. Building on this work, a recent study examined masculinity and help-seeking barriers using a sample of 377 undergraduate women (Heath, Brenner, et al., 2016). The results indicated that women who reported higher adherence to masculine norms also reported more negative help-seeking attitudes and less intent to seek psychological help (Heath, Brenner, et al., 2016). There were two important limitations to this work though, as this study did not examine specific masculine norms (e.g., self-reliance and emotional control) and also did not examine men and women at the same time. While this study suggests that masculine norm adherence can impact women's beliefs about seeking psychological help, it remains unclear if there are sex differences in the relations between specific norms (i.e., self-reliance and emotional control), and help seeking, as would be suggested by SIT.

Mediating and Moderating Factors

A strength of the Heath, Brenner, et al. (2016) study, was that it found evidence for mediating factors between masculine norm adherence and help-seeking attitudes and intentions. This is important because mediating factors have been identified in the extant research on men's masculine norm adherence and help-seeking patterns. Mediating variables constitute help-seeking 'barriers' that are more proximally related to masculine norm adherence than actual behavior. Placed within the context of SIT broadly, and masculinity specifically, these barriers include factors that are ultimately focused on securing a man's in-group status, despite hindering subsequent help-seeking behavior. Two mediating factors have been identified as particularly salient barriers for the link between masculinity and psychological help seeking: help-seeking stigma and risks associated with self-disclosing to a counselor (i.e., disclosure risks). Beyond mediating factors, moderating variables have also been identified which influence the strength of the relationship between adherence to masculine norms and help seeking. Factors that reduce the strength of the link between masculine norms and negative help-seeking outcomes have been called 'buffering' factors in previous literature. Within the context of SIT, these buffering variables might represent factors that help diminish the pressure men feel to behave congruently with masculine gendered expectations or norms. Self-compassion has been identified as a potential moderating variable for the link between masculinity and psychological help seeking. Next, I discuss these mediating and moderating factors individually.

Help-Seeking Stigma

Stigma is considered a 'mark of shame' or some aspect of identity that reduces someone to be seen as tainted or damaged (Goffman, 1963). The feared stigmatization associated with having a mental illness or seeking psychological help has been identified as the leading barrier to

seeking help for men (e.g., Hoy, 2012). Recently, researchers have noted that stigma is associated with both mental illness (Corrigan, 2004) and seeking help (Vogel, Wade & Haake, 2006), with help-seeking stigma being more strongly related to help-seeking outcomes (Lannin, Vogel, Brenner, & Tucker, 2015). Stigma associated with seeking psychological help has been defined as the “perception that an individual who seeks psychological treatment is undesirable or socially unacceptable” (p. 325; Vogel et al., 2006). Two forms of help-seeking stigma have been theorized: public and self-stigma of seeking help. *Public stigma* is an individual’s perception of negative beliefs or stereotypes that society holds toward those who seek help (Komiya, Good, & Sherrod, 2000). For example, many in society believe that mental health services should only be used once other sources of support have failed (Angermeyer, Matschinger, & Riedel-Heller, 1999). In line with this, those who seek psychological services are commonly labeled as cowardly, pitiful, unstable, and needy (Hammer & Vogel, 2017). In other words, the public perception is that seeking professional services should be a ‘last resort’ as it denotes there is something inherently wrong with the help seeker. *Self-stigma* is the internalized form of public stigma, or an individual’s anticipated loss of self-worth or status as a result of seeking help (Vogel et al., 2006). Specifically, self-stigma emerges when individuals encounter negative, publicly-held stereotypes about seeking help and begin to internalize these stereotypes. Corrigan, Watson and Barr (2006) proposed a progressive model of stigma internalization which internalization occurs when individuals are aware of publicly held stigmatizing beliefs and ultimately apply these beliefs to themselves (e.g., Corrigan et al., 2006; Hammer & Vogel, 2017).

Help-seeking self-stigma is consistently associated with more negative outcomes, like lower self-esteem (Lannin, Vogel, Brenner, & Tucker, 2015), more negative attitudes and intentions to seeking help (Choi & Miller, 2014; Garriott, Raque-Bogdan, Yalango, Schaefer

Ziemer, & Utley, 2017; Vogel, Wade, & Hackler, 2007), and a decreased likelihood of engaging with online information about mental health and mental health services (Lannin, Vogel, Brenner, Abraham, & Heath, 2016). Public and self-stigma have been shown to be related, yet distinct from one another (e.g., Brenner, Hammer, Vogel, Bitman, Heath, & Wade, under review; Tucker et al., 2013), and that public stigma leads to the development of self-stigma over time (Vogel, Bitman, Hammer, & Wade, 2013). Importantly, research has consistently noted that self-stigma fully mediates the link between public stigma and help-seeking attitudes and intentions (Vogel, Wade, & Hackler, 2007; Vogel, Strass, et al., 2017).

Stigma broadly, and self-stigma specifically, may be particularly salient for individuals adhering to masculine norms. According to SIT, it would be expected that men who reported higher adherence to masculine norms would associate more self-stigma with the idea of seeking psychological help because seeking help would represent a failure to live up to in-group expectations. In turn, self-stigma would lead to the avoidance of psychological services. A number of studies utilizing all-male samples have supported this hypothesis, as increased adherence to masculine norms is consistently linked to higher levels of self-stigma, and stigma has consistently been found to mediate the link between masculine norm adherence and psychological help seeking. Pederson and Vogel (2007) assessed 575 undergraduate men, and found that those reporting higher adherence to masculine norms indirectly predicted more negative help-seeking attitudes ($\beta = -.24$) and lower intent to seek psychological help ($\beta = -.14$), and that this link was mediated by self-stigma. This mediation effect has been replicated by a number of other studies. Shepard and Rickard (2012), found that help-seeking stigma mediated the effect between masculine norms, and both help-seeking attitudes and intentions using a sample of 176 undergraduate men. Similarly, another study found that self-stigma fully

mediated the link between masculine norm adherence and help-seeking attitudes using a sample of 166 undergraduate men (Wasylikiw & Clairo, 2016).

The mediation effect has been observed in samples of community men as well. Using a sample of 654 community men, Levant and colleagues (2013), found that self-stigma partially mediated the relationship between masculine norms and help-seeking attitudes. In an even larger sample of community men ($n = 4,773$), this mediation effect was examined across racial and ethnic groups, socioeconomic classes, and sexual orientations, with results indicating the effect was present across all demographic groups (Hammer et al., 2013; Vogel et al., 2011).

Self-reliance and emotional control have also been linked directly to help-seeking stigma. In a study examining 284 undergraduate men, higher levels of both self-reliance ($\beta = .28$) and emotional control ($\beta = .28$) were found to predict higher levels of help-seeking stigma (Heath et al., 2017). In another study examining 349 student veterans, self-reliance predicted help-seeking stigma across the entire sample ($\beta = .61$), while emotional control only predicted stigma for student veterans who had been deployed to a war zone ($\beta = .26$; McDermott et al., 2017). Interestingly, the result from the McDermott et al. (2017) study (i.e., emotional control only predicted stigma for a subset of men) appears to mirror results from a previous study of 214 undergraduate men which found that a related construct, restricted emotionality, did not predict help-seeking stigma (Vogel, Wester, Hammer, & Downing-Matibag, 2014).

Taken as a whole, the extant literature suggests that masculine norm adherence broadly, and self-reliance and emotional control specifically, are salient predictors of men's help-seeking attitudes and intentions, and that this link is often mediated by help-seeking stigma. However, while self-reliance has consistently been linked to stigma, the results are not always as consistent for emotional control. One possibility is that emotional control is related to other barriers to

seeking psychological help, which has received some initial support in the literature.

Specifically, emotional control has been found to predict risks associated with self-disclosing to a counselor (Heath et al., 2017), which is another help-seeking barrier highlighted in the literature.

Disclosure Risks

Risks associated with self-disclosing personal information to a counselor, also known as disclosure risks, are another commonly cited barrier to seeking psychological help. Disclosure risks include expectations that disclosing personal information to a counselor could have negative consequences (e.g., expectation that a counselor will judge you for disclosing personal information; Vogel & Wester, 2003). This serves as an important barrier to address because, in its most basic form, counseling has been characterized as the decision to self-disclose concerns to another person (Jourard, 1964; Keith-Lucas, 1994). Early empirical work in this area noted that those who are more likely to conceal personal information are also more likely to report higher levels of distress, less previous help-seeking behavior, more negative help-seeking attitudes, and less intent to seek help for current psychological problems (Cepeda-Benito & Short, 1998; Kelly & Achter, 1995).

Based on these studies, Vogel & Wester (2003), created a scale designed to assess the risk individuals associate with disclosing personal information to a counselor, and across two separate samples found that higher reported risk predicted more negative help-seeking attitudes. Importantly, disclosure risks were a better predictor of attitudes than psychological distress and social support (Vogel & Wester, 2003). Specifically, disclosure risks were associated with more negative attitudes toward seeking help ($r = -.24$) in the first sample, and both more negative attitudes ($r = -.30$) and less help-seeking intent ($r = -.25$) in the second sample. Subsequent

research has replicated these findings. In one study examining 354 undergraduate students, disclosure risks were associated with more negative attitudes toward seeking help ($r = -.25$). Another study, conducted in the United Arab Emirates, also found that higher levels of disclosure risks were associated with more negative help-seeking attitudes across a sample of 407 students ($\beta = -.27$; Heath, Vogel, & Al-Darmaki, 2016).

In accordance with SIT, men who adhere to masculine gender norms should also perceive more disclosure risks, as disclosing to a counselor may be incongruent with masculine expectations of being emotionally stoic and reserved. Indeed, masculine norm adherence has been tied to increased disclosure risks, though it has been less studied than the link between masculine norm adherence and stigma. Early research, for example, found that men are less likely to disclose feelings to others (see Bruch, Berko, & Haase, 1998 for a review). However, this work was focused on disclosure to friends or intimate partners, and did not assess beliefs around disclosing to counselors. More recent research has examined men's self-disclosure within the context of psychological help-seeking, finding that masculine norm adherence is tied to less likelihood to self-disclose to a counselor. In the study by Heath and colleagues (2017), higher levels of general masculine norm adherence were linked to higher levels of disclosure risks ($\beta = .35$) across 284 undergraduate men. In another study of undergraduate men, Pederson and Vogel (2007) found that higher adherence to masculine norms was inversely associated with the intent to disclose information to a counselor ($\beta = -.42$). Importantly, the Pederson and Vogel (2007) study showed that intent to disclose information mediated the relationship between masculine norms and help-seeking attitudes and intentions. Research on the link between specific masculine norms and disclosure risks has also recently begun. In their study of 284 college men, Heath and colleagues (2017), found that higher levels of emotional control was

related to increased disclosure risks ($\beta = .48$; Heath et al., 2017), while controlling for stigma. However, self-reliance was not related to disclosure risks, indicating that certain masculine norms might be more salient than others when examining men's self-disclosure.

Though research has demonstrated a connection between masculine norm adherence and disclosure risks, additional research is needed to further generalize these findings. Specifically, much of the research done in this area has focused on college students, and more research is needed with non-college aged men. Additionally, including other factors in addition to disclosure risks could be particularly beneficial. One recent study suggested that disclosure risks might have differential relationships with masculinity when self-compassion was included as a moderating variable (Heath et al., 2017), though this has only been tested once and requires replication. As such, including self-compassion as a moderating factor with a larger and more diverse sample (i.e., both a college and community sample), is needed.

Self-Compassion

Socialized gender norms can be difficult to change, especially since they are instilled early in life, reinforced throughout life, and often carry social privileges (i.e., men's adherence to masculine gendered norms are often tied to the maintenance of gendered power structures; Addis et al., 2016). As such, researchers have begun to examine moderating factors that could help weaken the link between socialized masculine norms and help-seeking variables. This fits with previous suggestions that contextual factors may play an important role in the connection between masculine norm adherence and help-seeking outcomes (Addis & Mahalik, 2003; Vogel & Heath, 2016). One factor that has recently been identified as a moderating variable is self-compassion (Heath et al., 2017). *Self-compassion* is a concept that originated in Buddhist philosophy, and focuses on a compassionate and caring approach to oneself in the face of

suffering, failure, or inadequacy (Neff, 2003; 2009). Specifically, self-compassion involves showing oneself kindness and acceptance in the face of perceived failure, instead of self-criticism (Neff, 2003). Other aspects of self-compassion include maintaining a mindful approach to oneself and the world at large, as well as an acknowledgment that suffering and failure are part of the human condition (Neff, 2003). Importantly, self-compassion is believed to lower defensiveness (Gilbert, 2005) and self-blame (Terry & Leary, 2011), and increase health related behavior (Sirois, Kitner, & Hirsch, 2015). Previous research has found that self-compassion buffered the link between public stigma and self-stigma (Heath, Brenner, Lannin, & Vogel, 2018), and that increasing self-compassion levels can help reduce self-stigma regarding previous substance use (Luoma et al., 2008).

Within the context of SIT, the moderating effect of self-compassion on the relationship between masculine norms and help-seeking barriers makes sense. As previously discussed, men who fail to conform to in-group expectations (e.g., showing emotions, asking for help) risk losing their in-group status as a man. As such seeking psychological help becomes a risky endeavor which many men subsequently avoid. However, men who have more self-compassion may be able to view this potential 'failure' to live up to gendered expectations differently. Men with higher levels of self-compassion may be able to view the process of seeking help through a lens of self-kindness, understanding that seeking out help is a common human behavior that can help alleviate suffering, thus diminishing the fears associated with using psychological services (i.e., loss of in-group status). As such, they may be able to adhere to masculine norms while also viewing psychological help-seeking through a more positive light.

This possibility has only been examined in two studies. In one study of 284 undergraduate men, self-compassion was found to moderate the relationship between masculine

norm adherence and the two help-seeking barriers previously discussed: help-seeking stigma and disclosure risks (Heath et al., 2017). Results showed that self-compassion buffered, or weakened, the relationships between adherence to masculine norms and both help-seeking stigma and disclosure risks. In other words, as men's levels of self-compassion increased, the relationship between their masculine norm adherence and help-seeking barriers weakened. This fits with the theory that self-compassion could help alleviate the pressures men feel to maintain in-group status through avoidance of psychological services. Follow-up analyses were also conducted to examine the moderating effect of self-compassion on the links between self-reliance and emotional control, specifically, and help-seeking stigma and disclosure risks. These analyses suggested a more nuanced moderation effect, as self-compassion moderated the link between emotional control and disclosure risks, but did not moderate any of the other three associations.

Interestingly, another study examined the potential moderating effect of self-compassion on the link between masculine norm adherence and help-seeking attitudes using a sample of 162 undergraduate men (Wasylikiw & Clairo, 2016). The results of this study suggested that self-compassion did not serve as a moderating factor for the link between masculine norms and help-seeking attitudes, contradicting the findings from Heath and colleagues (2017). One possible explanation for these different findings is that Wasylikiw & Clairo examined help-seeking attitudes as the outcome variable, while Heath and colleagues examined stigma and disclosure risks as the outcome variables. These mixed findings warrant additional research to clarify the role of self-compassion in men's psychological help-seeking beliefs.

An important limitation of both of these studies is that the original scoring instructions were used to calculate the self-compassion factor. Recent research on the *Self-Compassion Scale* (Neff, 2003), has found that the scale actually consists of two separate constructs: self-

compassion and self-coldness (Brenner, Heath, Vogel, & Credé, 2017). Self-coldness is believed to be a negative, judgmental, stance towards the self in the face of perceived failure or suffering (Brenner et al., 2017). The emergence of evidence that the SCS measures two separate constructs (self-compassion and self-coldness) raises concerns about previous findings using the SCS, as self-compassion was likely conflated with self-coldness items. Consistent with this, studies have shown that self-coldness and self-compassion have differential relationships with outcomes. For example, self-coldness is more strongly related to psychological distress, though self-compassion was found to be important in reducing the association between self-coldness and distress (Brenner et al., 2018). As such, the results from the Heath and colleagues (2017) and Wasylkiw & Clairo (2016) studies require re-examination using the more recent SCS scoring suggestions (i.e., scoring the self-compassion items separately from those assessing self-coldness). Using the updated scoring instructions should result in a more pure assessment of self-compassion, one that is free of the potential confounding effects of self-coldness items. Because self-compassion should theoretically give men a tool to help alleviate the fear of failing to live up to gendered behavioral expectations, analyses using the updated scoring instructions might demonstrate that self-compassion actually has a stronger buffering effect on the relationship between masculine norm adherence and help-seeking barriers than previously thought.

Attitudes, Intentions, and Behavioral Outcomes

It is important to note that the majority of the extant literature has examined psychological help seeking using proxy constructs that are theoretically linked to actual behavioral use like individuals' attitudes or intentions to seek out psychological services. Justification for the use of these proxy variables has often drawn on the Theory of Planned

Behavior (TPB). The TPB is a deliberative process model that asserts an individual's behavior results from their attitudes and intentions to engage in that behavior (Ajzen, 1991). A body of research supports TPB, with many studies demonstrating the link between attitudes, intentions, and actual behavior across a wide variety of contexts (see Crano & Prislin, 2006 for a review). A general meta-analysis provided additional support for this theory suggesting that, on average, TPB models accounted for 18% of the variance in behavioral intentions, and 13% of the variance in actual behavior (Armitage & Conner, 2001). Other meta-analyses suggest intentions explain 28% of the variance in subsequent behavior (Sheeran, 2002).

Other theories have also suggested that attitudes are fundamental in predicting subsequent behavior. Terry, Hogg, & McKimmie (2000), suggested that a given behavior was more likely to occur if an individual's social 'in-group' had favorable attitudes toward the behavior, which has been supported by subsequent research. For example, across two experiments (combined n = 565), Smith and Terry (2003) found that individuals were more likely to engage in a behavior that was consistent with their in-group norms when they more strongly identified with their in-group. In another study using two separate experiments (combined n = 340), attitudes again predicted subsequent behavioral intentions (i.e., to participate in a campus activity), and this effect was strongest for those individuals who had been primed with material about congruent in-group norms (White, Hogg, & Terry, 2002).

Other studies have examined help-seeking behaviors specifically, finding a link between help-seeking attitudes and actual service use. For example, one study found that more positive help-seeking attitudes predicted increased psychological help-seeking behavior using a sample of 486 college students in Canada (Beatie, Stewart, & Walker, 2016). Interestingly, this study noted that the relationship between attitudes and behavior was moderated by help-seeking stigma.

Individuals who reported lower levels of help-seeking stigma demonstrated a more positive relationship between help-seeking attitudes and behaviors than those who reported higher levels of stigma, suggesting that attitudes might be more related to actual behavior within the context of other factors. Another study that used a sample of 296 college students and 389 primary care patients also found that more positive attitudes towards psychological services predicted higher rates of psychological service use (Elhai, Schweinle, & Anderson, 2008). In another study assessing 293 undergraduate students, more positive psychological help-seeking attitudes were again linked to previous help-seeking behavior (Mackenzie, Knox, Gekoski, & Macaulay, 2004).

However, despite the potential utility of assessing help-seeking attitudes and intentions, researchers have noted a large portion of variance in behavior may still not be accounted for (see Crano & Prislin, 2006 for a review). As such, researchers have suggested including behavioral outcomes in the help-seeking literature. In one recent study, researchers assessed whether participants clicked on an internet link to bring them to a website with information about mental health, or whether they clicked on a link that would bring them to the website of a college counseling center (Lannin et al., 2016). This is an important outcome to assess, as technology use has become more common and an increased number of people are seeking out mental health information online as a first step to utilizing services (Oh, Jorm, & Wright, 2009; Rogers, 2008; Ybarra & Eaton, 2005). Lannin et al. (2016) found that more positive help-seeking attitudes predicted a higher likelihood of accessing online information about both mental health and seeking out counseling. Taken as a whole, more research is needed that examines the link between help-seeking beliefs (e.g., attitudes) and initial decisions to seek out information.

Contributions of the Current Study

This study makes several important contributions to the field. First, previous literature examining masculine gender role norms and psychological help-seeking outcomes utilized predominantly male samples. This is problematic as women also demonstrate lower psychological help-seeking rates relative to rates of mental illness (Eisenberg et al., 2011), adhere to masculine norms (e.g., Bem & Lewis, 1975; Parent & Smiler, 2013; Smiler, 2006), and have demonstrated a link between masculine norm adherence and help-seeking attitudes and intentions (Heath, Brenner, et al., 2016). Yet, as would be expected by SIT, men should display stronger associations between masculine norms and help-seeking outcomes relative to women, though this has yet to be directly tested. As such, this study utilizes samples of both men and women across both college students and community adults, to examine sex differences in the strengths of the relationships between masculine norms and help-seeking outcomes.

Second, self-compassion has been found to moderate the link between certain masculine norms and specific help-seeking barriers. However, these moderation effects included a confounded measure of self-compassion, and also did not utilize samples that included women. According to the tenets of SIT, it seems likely that this moderating effect would only be significant for men, because women do not have the same 'in-group' expectations to avoid psychological help. However, without research specifically examining sex differences in the strength of self-compassion as a moderating variable, these assertions are purely theoretical. As such, this study examines the interaction between masculine norm adherence and self-compassion, across men and women.

Third, this project examines a model in which masculine norms predict initial behavioral decisions to learn about mental health and psychological services. This is an important

contribution as the majority of the extant help-seeking literature has focused only on attitudes and intentions as proxy variables.

Current Study

The current study utilizes Social Identity Theory as a framework for examining how adherence to traditionally masculine gender role norms relates to psychological help seeking. To do so, this study examines the invariance of a previously established help-seeking model (Heath et al., 2017; Pederson & Vogel, 2007), across two samples (i.e., college students and community adults) of men and women. Pederson & Vogel's (2007) original model indicated that increased masculine norm adherence was significantly related to less intent to seek psychological help for a mental health concern. The link was mediated by higher levels of help-seeking stigma, increased disclosure risks, and more negative help-seeking attitudes. Building on this work, Heath and colleagues (2017), found that self-compassion was a significant moderating variable for the links between masculine norm adherence and help-seeking stigma and disclosure risks, such that higher levels of self-compassion predicted a weaker relationship between masculine norms and both help-seeking stigma and disclosure risks. Additionally, Heath and colleagues (2017) examined two specific masculine norms, self-reliance and emotional control, finding that these two norms were important predictors of help-seeking stigma and disclosure risks.

As such, this study examines a model in which the masculine norms of self-reliance and emotional control predict help-seeking intentions, through the mediating variables of help-seeking stigma, disclosure risks, and help-seeking attitudes. Identifying the best fitting mediation model is a necessary first step. Therefore, a partial mediation (see Figure 1) and a full mediation model (see Figure 2) are first compared. While Pederson & Vogel (2007) found that a partial mediation model best fit their data, they used a general measure of masculine norm

adherence. Since this study examines two norms specifically (self-reliance and emotional control), a full mediation model is hypothesized, in which higher levels of self-reliance and emotional control are expected to predict higher levels of help-seeking stigma and disclosure risks. Subsequently, higher levels of stigma and disclosure risks are expected to predict more negative help-seeking attitudes. And finally, more negative help-seeking attitudes will predict less intent to seek psychological help.

After establishing the best fitting mediation model, a third model will be examined in which self-compassion is added as a moderating variable for the relationships between self-reliance and emotional control, and help-seeking stigma and disclosure risks (see Figure 3). Previous research found that self-compassion significantly moderated the link between emotional control and disclosure risks, but did not significantly moderate the link between emotional control and help-seeking stigma, or the links between self-reliance and both help-seeking stigma and disclosure risks (Heath et al., 2017). As such, only the moderating effect between emotional control and disclosure risks is hypothesized to be significant, though the other three moderating effects will also be tested since a new scoring approach for the self-compassion measure will be used.

Next, to examine assertions of SIT, an invariance test will be conducted for the model in which both the mediation and moderation variables are included (see Figure 3). Men (relative to women) are hypothesized to demonstrate a stronger, more negative, indirect link between their adherence to masculine norms and help-seeking intentions. This is based on SIT, which suggests that individuals will try to maintain their in-group status through their behavior. Specifically, it is expected that the associations between self-reliance and emotional control, and help-seeking stigma and disclosure risks will be stronger for men than women. No sex differences are

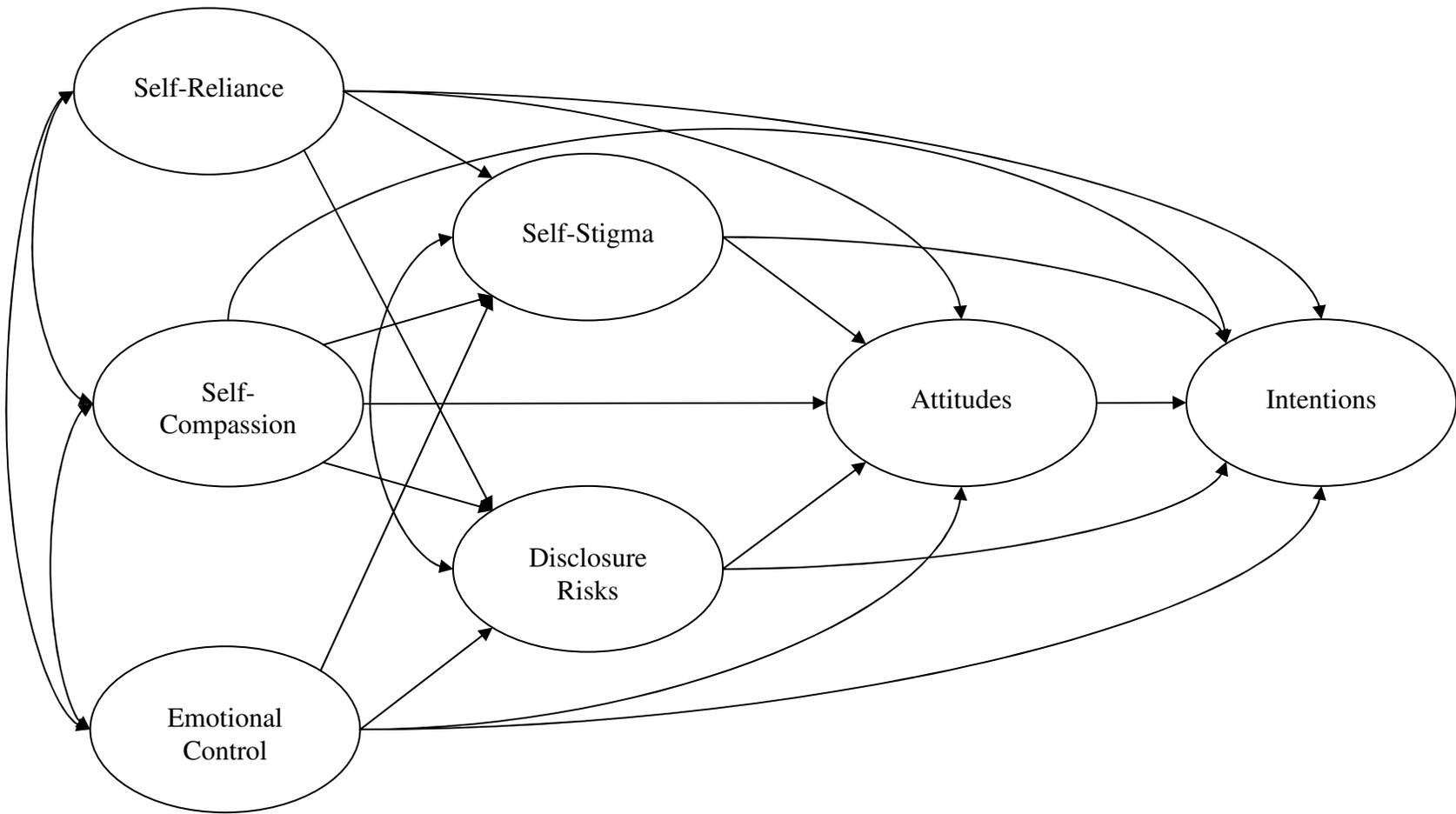


Figure 1. Fully-recursive, partial mediation model without interaction terms

expected for the other paths (i.e., the paths from help-seeking stigma and disclosure risks to help-seeking attitudes, and the path from attitudes to help-seeking intentions), as these paths are not specifically tied to gender role adherence. Sex differences are expected for the hypothesized moderation effect. Specifically, self-compassion is expected to moderate the link between emotional control and disclosure risks for men, but not for women. Self-compassion could be particularly helpful for men, as it could alleviate the increased pressure men can experience regarding the loss of in-group status by considering seeking psychological help. Because women's gendered in-group status may not rely on avoiding psychological help, they would likely not experience the same buffering effect from self-compassion.

Finally, an additional model will be tested that examines two behavioral measures of psychological help seeking (see Figure 4). The two behavioral outcomes include whether or not participants decide to click on an online link to get more information about mental health concerns, and whether or not participants decide to click on an online link to get information about psychological services. These outcomes have been examined in previous research on psychological help seeking (Lannin et al., 2016), though they have yet to be tested in relation to masculine norm adherence. Similar to previous hypotheses, men (relative to women) are expected to demonstrate more negative indirect paths between masculine gender norm adherence and whether they click on links about mental health or psychological services.

In sum, there are five hypotheses for this study:

1. Help-seeking stigma, disclosure risks, and help-seeking attitudes will fully mediate the links between self-reliance and emotional control, and help-seeking intentions (Figure 2), by demonstrating an equivalent fit to the partial mediation model (Figure 1).

2. Self-compassion will moderate the link between emotional control and disclosure risks, such that high levels of self-compassion will predict a weaker relation between emotional control and disclosure risks relative to the relation at low levels of self-compassion (Figure 3).
3. Sex differences will be found for the direct paths between self-reliance and emotional control, and help-seeking stigma and disclosure risks. Specifically, men will demonstrate stronger links between their adherence to masculine norms and the two help-seeking barriers.
4. Sex differences will be found for the self-compassion moderation effect (see Hypothesis 2). Specifically, it is expected that the moderation effect will be present for men, but not for women.
5. There will be sex differences in the link between masculine norms and initial help-seeking behaviors (Figure 4). Specifically, relative to women, men will report a stronger inverse relation between their adherence to masculine norms and likelihood to seek online information about both mental health and psychological service use.

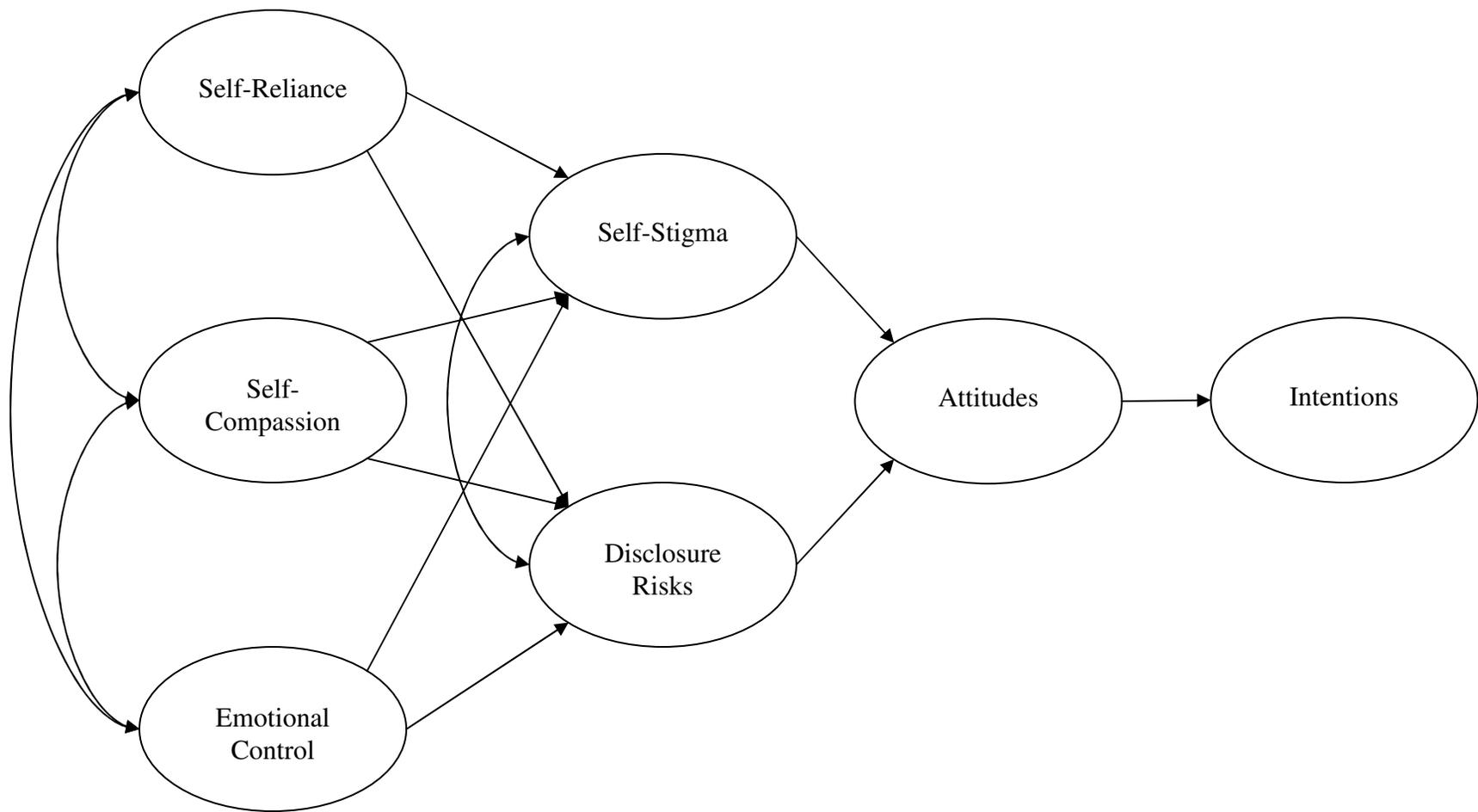


Figure 2. Hypothesized full-mediation model without interaction terms

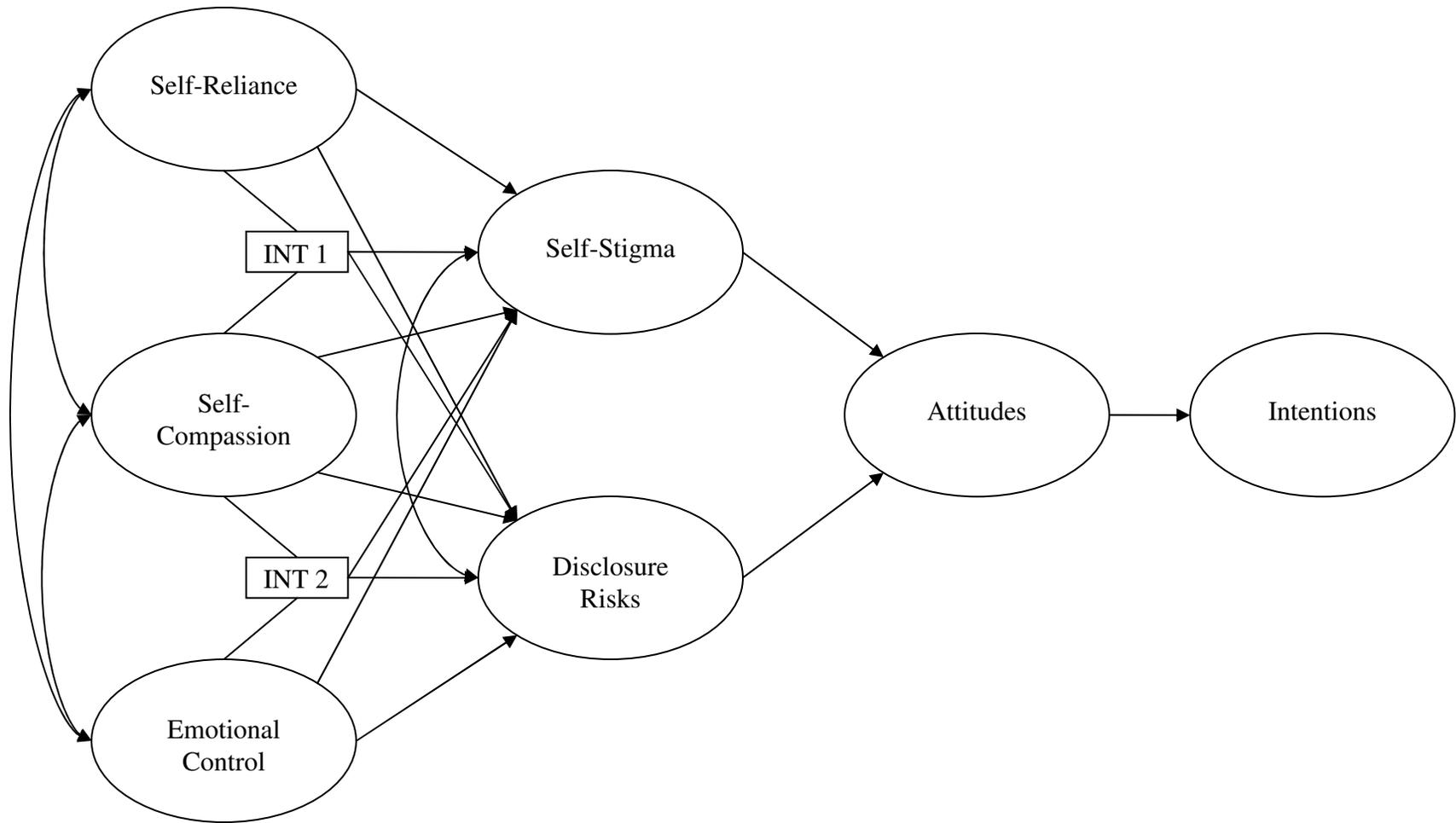


Figure 3. Hypothesized full mediation model with interaction terms

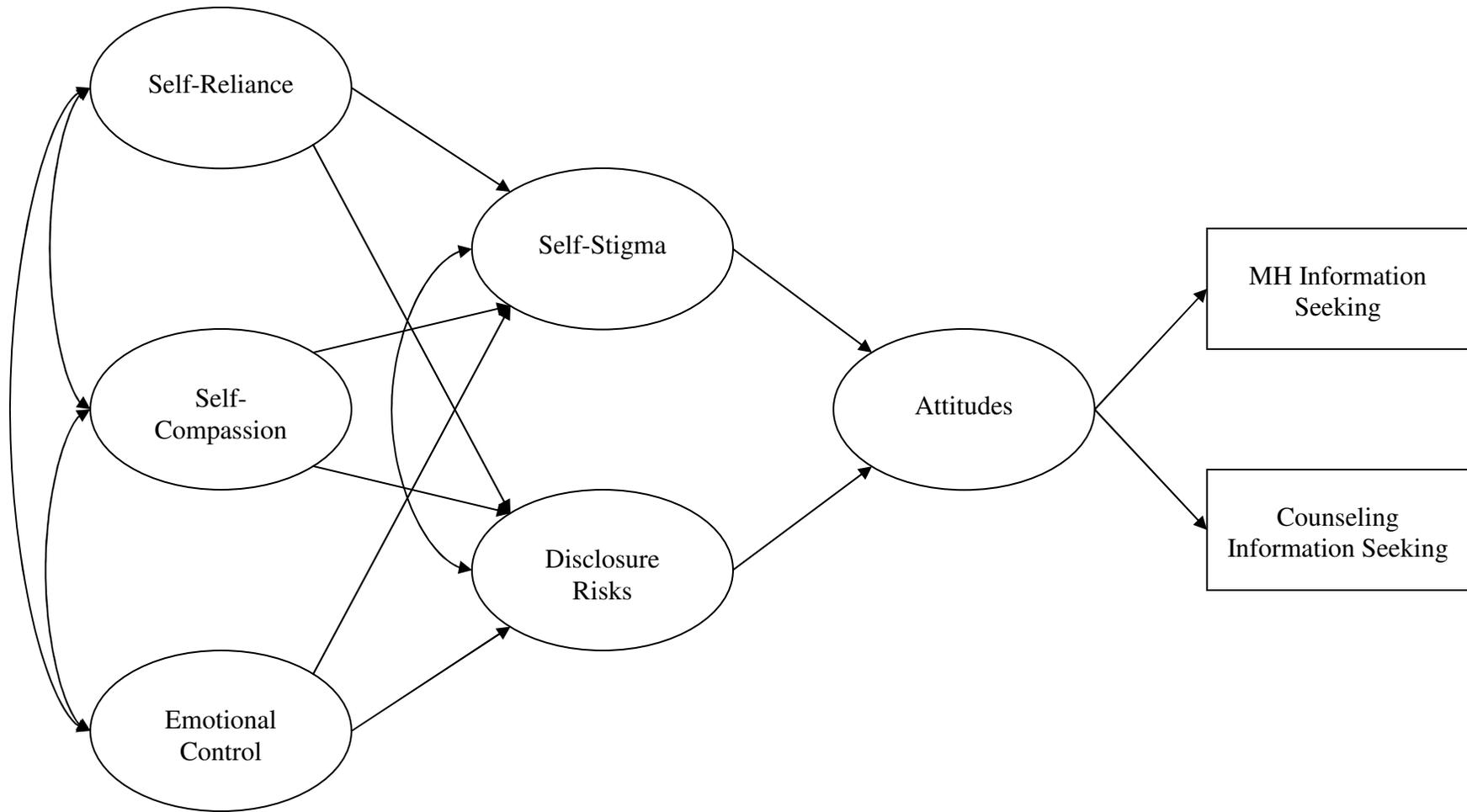


Figure 4. Full mediation model with behavioral outcomes

CHAPTER 3

STUDY INFORMATION

Methods

Participants

Two samples were collected for this study in order to increase the generalizability of findings.

Sample 1. Sample 1 included college students enrolled at a large Midwestern university. A list of enrolled students was obtained from the University's Registrar Office, and an email was sent inviting all students to participate in the study, which will help insure a representative sample. The email specified that those who completed the study would be offered a chance to win one of four \$25 Amazon Gift Cards. Students who were interested in participating voluntarily clicked on a link that redirected them to the online survey.

Sample 2. Sample 2 included community based participants invited to participate through Amazon's Mechanical Turk (MTurk) program. The MTurk program is an online service that helps connect potential participants to research studies (e.g., survey research). Participants are paid a small amount of money for each study they complete. Previous studies have noted that MTurk is a reliable data collection resource, noting that the data obtained through the program is as reliable as data obtained through established methods (e.g., Goodman, Cryder, & Cheema, 2013; Paolacci, Chandler, Ipeirotis, 2010; Shapiro, Chandler, & Mueller, 2013). Perhaps most importantly, MTurk allows researchers to sample a more diverse range of participants than "typical American college samples" (Buhrmester, Kwang, & Gosling, 2011, p. 3). For the current study, participants recruited through MTurk were paid \$0.10 for completing the study. Previous research notes that compensating participants \$0.10 yields data similar in

quality to lower (e.g., \$0.02) and higher (e.g., \$0.50) compensation levels, though low compensation levels tend to hinder participation rates (Buhrmester et al., 2011). Participants recruited through MTurk were required to be located in the United States.

Power Analysis

This study utilized Structural Equation Modeling (SEM) for the analyses (see Analytic Plan, pg. 46 of this document). Several different approaches to estimating sample size have been proposed for SEM, including a method that bases sample size estimates on the power to obtain a good model fit based on the Root Mean Square Error of Approximation (RMSEA; MacCullum, Brown, & Sugarwara, 1996), as well as a Monte Carlo simulation method that allows researchers to test whether certain sample sizes would result in statistically significant path estimates that are pre-set by the researcher (Muthén & Muthén, 2002).

According to MacCullum, Brown, & Sugarwara (1996), power analyses for structural equation modeling should be based on the close fit hypothesis. This is done by examining the power needed for a model's RMSEA value to be statistically the same as a null RMSEA value (i.e., exhibit a close fit). A null RMSEA (ϵ_0) is generally set at .05 (MacCullum et al., 1996), and determination of sample size requires an alternative RMSEA (ϵ_a), alpha, desired power, and degrees of freedom (df). When comparing two models for fit equivalency, Hu & Bentler (1999) suggested that a difference in RMSEA of $> .01$ signifies a significant fit difference, and as such, an alternate RMSEA (ϵ_a) of .06 will be used for this study. An alpha of .05 and power of .80 was used. Degrees of freedom (df) is determined using a formula that includes the number of manifest variables and distinct parameters being estimated in a structural model (MacCullum et al., 1996). Specifically, $df = p(p + 1)/2 - q$, where p is the number of manifest variables, and q is the number of distinct parameters being estimated. Preacher and Coffman (2006;

<http://quantpsy.org/rmsear/rmsear.htm>) created a web utility that allows researchers to generate code needed to run power analyses using this formula in R. To run this, researchers enter the necessary information required (ϵ_0 , ϵ_a , alpha, power, and df), and the appropriate code for R is generated (see Appendix A). While a number of models will be run in this study, sample size requirements are higher for models with lower df's, and as such the model with the lowest number of df's (i.e., a fully recursive model in which all paths are present, including distress and past help-seeking as controls; 264 df [$p = 26$, $q = 87$]), was used to estimate sample size requirements. Based on the Preacher and Coffman (2006) code, a sample size of 345 is recommended.

A power analysis was also conducted using the Monte Carlo simulation approach in Mplus (Wolf et al., 2013) to verify that this sample size would be appropriate for the proposed models. Again, the fully recursive model was used, and a conservative, small effect size (i.e., 16% explained variance) was specified for each of the latent variables (see Appendix B). Expected parameters for the relationships between latent variables were estimated based on previous research examining latent structural equation models with the variables included in the analyses (i.e., Heath et al., 2017; Pederson & Vogel, 2007). The number of observations for the Monte Carlo simulation was set at 345 based on the sample size generated by the Preacher and Coffman (2006) code. To conduct the Monte Carlo simulation, Mplus randomly generate 10,000 samples from the population parameter estimates, and the structural model is then run using each of those 10,000 samples. The output includes information on the number of samples in which each of the structural paths is significant. Based on the hypotheses that self-reliance and emotional control would predict stigma and disclosure risks, that stigma and disclosure risks would predict help-seeking attitudes, and that attitudes would predict intentions, these were the

paths that were looked at specifically. The results indicated that each of these paths would be significant in at least 80% of the samples, except for the path between attitudes and disclosure risks, which would be significant in 75.6% of the samples. The suggested cut-off for power analyses is to have at least 80% of the samples demonstrate significance for all expected paths (see Wolf et al., 2013), and as such, additional Monte Carlo simulations were conducted, adjusting the sample size. The Monte Carlo simulation was run three more times, sequentially increasing the sample size used from the original 345, to 350, 375, and finally to 400. Results indicated that a sample size of 400 led to significant paths in 80% of the samples for all expected paths. Given that previous research has indicated that approximately 10% of the data from participants is eventually dropped from analyses due to missing or incomplete responding (e.g., Meade & Craig, 2012), 440 ($400 \div 0.90$) participants need to be recruited. In order to run the model on both sample 1 and sample 2 separately, a minimum of 440 participants were needed for each sample.

Measures

Help-seeking intentions. The intentions of participants to seek out psychological help were measured using the *Intentions to Seek Counseling Inventory* (ISCI; Cash, Begley, McCown, & Weise, 1975; Cepeda-Benito & Short, 1998; see Appendix C). The ISCI is a 17-item scale that assesses intent to seek help across three general themes: Psychological and Interpersonal Concerns (PIC), Academic Concerns (AC), and Drug Use Concerns (DUC). For the purpose of this study, only the 10-item PIC will be used. Items ask how likely it would be for participants to seek psychological help for a variety of concerns, including depression, conflict with parents, or concerns with sexuality. Items are scored on a 4-point Likert scale ranging from 1 (*very unlikely*) to 4 (*very likely*), and composite scores are calculated by averaging the scores from

each subscales' items. Previous research using only the PIC items demonstrated internal consistency using undergraduate student samples (α 's = .86-.90; Cepeda-Benito & Short, 1998; Pederson & Vogel, 2007) and community based samples (α = .90; Wade, Vogel, Armistead-Jehle, Meit, Heath, & Strass, 2015). Previous research also suggests that lower intentions to seek help are related to more negative attitudes toward seeking help (Pederson & Vogel, 2007; Wade et al., 2015). In the current study, the internal consistency was α = .88 for the student sample and α = .90 for the MTurk community sample.

Help-seeking attitudes. Participants' attitudes toward seeking psychological help were assessed using the Attitudes Toward Seeking Professional Help Scale - Short Form (ATSPPH-SF; Fischer & Farina, 1995; see Appendix D). The ATSPPH-SF is an abbreviated, 10-item version of the original 29-item measure (Fischer & Turner, 1970). An example item includes: "I believed I was having a mental breakdown, my first inclination would be to get professional attention." Items are scores on a 4-point Likert scale ranging from 1 (*disagree*) to 4 (*agree*). Five of the items are reverse scored, and higher total scores indicate more positive attitudes about seeking psychological help. Composite scores are created by averaging the 10 items. The scale demonstrated internal consistency in the original publishing article (α = .84; Fischer & Farina, 1995), and has since demonstrated internal consistency across other studies (α 's ranging from .82 – .87; Hammer et al., 2013; Wade et al., 2015). Previous research has shown that lower scores on the ATSPPH-SF are related to lower intent to seek help (Pederson & Vogel, 2007; Wade et al., 2015), higher levels of help-seeking self-stigma (Vogel et al., 2006; 2007), and lower rates of seeking out online mental health and help-seeking information (Lannin, Vogel, Brenner, Abraham, & Heath, 2016). In the current study, the internal consistency was α = .84 for the student sample and α = .84 for the MTurk community sample.

Help-seeking self-stigma. Participants' levels of anticipated self-stigma associated with seeking psychological help were measured using the *Self-Stigma of Seeking Help* scale (SSOSH; Vogel et al., 2006; see Appendix E). The SSOSH is comprised of 10 items, including items such as, "It would make me feel inferior to ask a therapist for help" (Vogel et al., 2006, p. 328). Participants rate items using a 5-point Likert scale from 1 = *strongly disagree* to 5 = *strongly agree*. Five of the items are reversed scored, with higher total scores indicating higher levels of self-stigma related to seeking psychological help. The SSOSH has demonstrated both internal consistency ($\alpha = .86-.90$) and 2-month test-retest reliability (.72) using college student samples (Vogel et al., 2006). The scale has also demonstrated internal consistency using community samples ($\alpha = .90$; Vogel et al., 2011). In the current study, the internal consistency was $\alpha = .88$ for the student sample and $\alpha = .87$ for the MTurk community sample.

Disclosure risks. Participants' perceived risk associated with disclosing information to a counselor were measured using the *Disclosure Expectations Scale - Risks* subscale of the (DES-R; Vogel & Wester, 2003; see Appendix F). The DES-R is a 4-item subscale that includes items such as, "how difficult would it be for you to disclose personal information to a counselor?" Participants respond to items using a 5-point Likert scale from 1 = *not at all* to 5 = *very*, and composite scores are created by averaging the items. Higher scores indicating greater perceived risks associated with self-disclosing to a professional counselor. Previous studies show that the DES-R demonstrates internal consistency ($\alpha = .74 - .83$) in college student samples (Vogel et al., 2006; Vogel & Wester, 2003). The DES-R has also demonstrated internal consistency in community samples ($\alpha = .86$; Wester, Arndt, Sedivy, & Arndt, 2010). In the current study, the internal consistency was $\alpha = .84$ for the student sample and $\alpha = .85$ for the MTurk community sample.

Self-Reliance and Emotional Control. Participants' adherence to self-reliance and emotional control were measured using the *Conformity to Masculine Norms Inventory-46* (CMNI-46; Parent & Moradi, 2009; see Appendix G). The CMNI-46 is an abbreviated version of the original 94-item CMNI (Mahalik, Locke, et al., 2003), and measures nine facets of masculinity: Emotional Control, Winning, Playboy, Violence, Self-Reliance, Risk-taking, Power Over Women, Primacy of Work, and Heterosexual Self-Presentation. For the purpose of this study, only the 5-item Self-Reliance, and the 6-item Emotional Control subscales were utilized, as they have been theoretically and empirically linked to more negative help-seeking outcomes (e.g., Addis & Mahalik, 2003; Burns & Mahalik, 2011; Heath et al., 2017; Wong et al., 2017). These two subscales consist of items such as "I hate asking for help" (self-reliance) and "I never share my feelings" (emotional control). Participants rate items using a 4-point Likert scale from 1 = *strongly disagree* to 4 = *strongly agree*. Composite scores for each of the subscales is calculated by averaging the items for the subscales after reverse-coding two items from the self-reliance and three items from the emotional control subscales. Higher scores indicate greater adherence to these two masculine norms. The self-reliance and emotional control subscales have shown positive correlations (r 's = .24 to .49) with other assessments of masculine norms including the *Male Role Norms Inventory* and the *Brannon Masculinity Scale* (Parent & Moradi, 2011). The two subscales have also demonstrated internal consistency in college student samples (α 's = .84 – .89; Parent, Moradi, Rummell, & Tokar, 2011), and in community samples (α 's = .81-89; Parent & Smiler, 2013). In the current study, the internal consistency for the self-reliance measure was $\alpha = .88$ for the student sample and $\alpha = .83$ for the MTurk community sample. In the current study, the internal consistency for the emotional control measure was $\alpha = .91$ for the student sample and $\alpha = .86$ for the MTurk community sample.

Self-compassion. Participants' levels of self-compassion were measured using the *Self-Compassion Scale* (SCS; Neff, 2003; see Appendix H). The SCS is a 26-item scale with items such as "I try to be understanding and patient towards those aspects of my personality I don't like." Participants respond to items using a 5-point Likert scale from 1 = *almost never* to 5 = *almost always*. Neff (2003) originally suggested that a total composite score be calculated by averaging the 26 items after reverse coding 13 items, with higher scores indicating higher levels of self-compassion. However, recent research has called into question the most appropriate factor structure of the SCS, and how best to score the scale. Specifically, a bifactor model has been shown to be most appropriate when modeling the SCS (Brenner et al., 2017). This model suggested that the SCS is actually comprised of two general factors: self-compassion and self-coldness (Brenner et al., 2017). As the focus of this project is on self-compassion, only the 13-item self-compassion factor was used. Previous research utilizing the 13-item self-compassion factor suggests that the scale demonstrates internal consistency in both college ($\alpha = .90$) and community based ($\alpha = .91$) samples (Brenner et al., 2018). In the current study, the internal consistency of the 13-item self-compassion scale was $\alpha = .88$ for the student sample and $\alpha = .92$ for the MTurk community sample.

Distress. Participants levels of distress was measured using the 21-item version of the *Depression Anxiety Stress Scale* (DASS-21; Henry & Crawford, 2005; see Appendix I). This is a short form measure of the original *Depression, Anxiety, and Stress Scale* (Lovibond & Lovibond, 1995), and includes three seven-item subscales (Depression, Anxiety, and Stress). Sample items include "I felt I wasn't worth much as a person" (depression); "I was aware of dryness in my mouth" (anxiety); and "I found it hard to relax" (stress). Participants respond to items using a 4-point Likert scale, with higher scores indicating higher levels of depression,

anxiety, or stress. Previous research has shown that the subscales are correlated with other measures of distress, demonstrating convergent validity (Henry & Crawford, 2005). Previous research has demonstrated the internal consistency of the DASS subscales in college student samples (α 's = .81 - .91; Lovibond & Lovibond, 1995), and community samples (α 's = .87 - .94; Antony, Bieling, Cox, Enns, & Swinson, 1998). In the current study, the internal consistency values for the three subscales ranged from $\alpha = .84$ to .91 for the student sample, and from $\alpha = .87$ to .93 for the MTurk community sample.

Behavioral Measures. To assess initial behavioral decisions to seek help-seeking information, participants were asked two questions at the end of the survey. First, participants were asked if they would like to click on a link that will bring them to online information about mental health concerns. If participants selected 'yes,' a new internet window opened with information about mental health concerns. The survey also included a question asking participants if they would like more information on how to seek psychological services. Again, if participants selected 'yes,' a new internet window opened with information about how to seek out psychological services. These questions have been included in previous studies of psychological help seeking (Lannin et al., 2016).

Demographics. Participants were asked basic demographic information (see Appendix J), including information about their age, race/ethnicity, sexual orientation, and amount of education completed.

Analytic Plan

Quality Check

Throughout the survey, four 'random response items' were embedded in the scales at random. These included items such as, "Please respond with a '4,' for this item." Participants

who responded correctly to at least three of the four random response items were included in the analyses. In addition, participants who had more than 10% missingness across all items were removed from subsequent analyses. Finally, completion time for the survey was recorded, and participants who completed the questionnaires in less than 5 minutes were not included in subsequent analyses (Meade & Craig, 2012).

Normality

A Kolmogorov–Smirnov test of univariate normality was conducted using SPSS version 22 on the composite measures included in the analyses. Based on the assumptions of multivariate normality, should any of the individual measures violate univariate normality (i.e., $p < .05$ on the Kolmogorov-Smirnov test), multivariate normality will be precluded. Multivariate normality was not achieved (see results section), and as such, all models were estimated using the robust maximum-likelihood method (MLR) in Mplus, which utilizes an adjusted chi-square statistic that is robust to non-normality (Muthén & Muthén, 2010; Satorra & Bentler, 2001).

Missing Data

Any missing data was handled using the full information maximum likelihood (FIML) estimation method in Mplus. As noted previously, only cases with at least 90% of the data were included in analyses.

Structural Equation Modeling

Structural equation modeling (SEM) in Mplus version 6.11 was used to examine the proposed models (see Figure 1-3). SEM is a generally preferred method, especially when testing statistical models that include mediation effects (Frazier, Tix, & Barron, 2004; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). Compared to other methods of analysis, SEM is particularly flexible, allowing for the examination of both direct and indirect effects, using

multiple categorical or continuous predictor and outcome variables at the same time (Hoyle, 2012). Generally, a two-step procedure is used in SEM, first fitting a measurement model to the data, followed by the specification of structural paths (Anderson & Gerbing, 1988). Though SEM typically uses a chi-square statistic to assess model fit, the chi-square statistic is sensitive to large sample size (Bentler & Bonett, 1980). As such, a series of additional fit indices were used to examine whether each model adequately represents the data. These fit indices included the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), the Standardized Root-Mean-Square Residual (SRMR), and the Root-Mean-Square Error of Approximation (RMSEA). Cut-off values for these fit indices have been proposed to determine whether models show adequate fit to the data (see Brown, 2006; Hu & Bentler, 1999; Martens, 2005). For the CFI and TLI, values over .95 indicate good fit, while values over .90 indicate adequate fit. For the SRMR, values below .08 indicate good fit, and values less than .10 indicate adequate fit. For the RMSEA, values below .05 indicate good fit, and values less than .08 indicate adequate fit.

Parceling. Observed indicators, or parcels, were created for seven of the eight latent variables in the analyses. Parcels help reduce the number of parameters present in the analyses, and also help meet the assumptions of the maximum-likelihood method used in SEM by helping to account for possible violations of multivariate normality (see Russell, Kahn, Spoth, & Altmaier, 1998, for a discussion). To create the parcels, factor analyses were conducted for each variable using the maximum-likelihood method, and fitting to a one-factor solution. These analyses resulted in item loadings for each variable. Items for each variable were ranked in order from strongest factor loading to weakest factor loading. Subsequently, the highest and lowest ranking items were then parceled in pairs to better average the loading of each parcel on its respective latent factor. This method was chosen over other methods of parceling because

Russell and colleagues (1998) asserted that: “when this procedure is used, the resulting item parcels should reflect the underlying construct . . . to an equal degree” (p. 22). Three parcels were created for the self-reliance, emotional control, self-compassion, self-stigma, disclosure risks, attitudes, and intentions variables. The distress measure, which was used as a covariate, includes three subscales (depression, anxiety, and stress), which were used as the three indicator variables for the distress latent measure.

Models

For this study, five models were examined:

Model 1: A measurement model

Model 2: A fully-recursive structural model without interaction terms

Model 3: A fully-mediated structural model without interaction terms

Model 4: The best fitting mediation model with interaction terms added

Model 5: The best fitting mediation model without interactions terms, including behavioral outcomes instead of intentions

Model 1: Measurement model

An initial measurement model was tested to examine how well the parcels and item indicators represent each of the latent variables (Anderson & Gerbing, 1998). The measurement model included the seven latent variables in the model (self-reliance, emotional control, self-compassion, help-seeking stigma, disclosure risks, help-seeking attitudes, and intentions), as well as the distress measure which was included as a covariate in all models. The metric (i.e., indicator factor loadings) and scalar (i.e., indicator intercepts) invariance was also examined across the student and community sample models, as well as across men and women in each of the two samples separately, to determine if subsequent comparisons could be made across

sample, or across participant sex. Cheung and Lau (2012) suggesting examining the change in CFI (i.e., $\Delta CFI \leq .01$ indicating model invariance for Mplus) for invariance testing. Metric invariance between groups is necessary to test for differences between groups in the strengths of relationships, while scalar invariance between groups is required to assess mean group differences (Milfont & Fischer, 2010)

Models 2 and 3: Structural Mediation Models

Next, a structural model was tested in which self-reliance, emotional control, and self-compassion predicted self-stigma and disclosure risks, self-stigma and disclosure risks predicted help-seeking attitudes, and help-seeking attitudes predicted help-seeking intentions. Self-reliance and emotional control were allowed to correlate, as previous research suggests that the best approach to modeling the subfacets of the CMNI-46 is to allow each facet to correlate (Hammer, Heath, & Vogel, 2018). Additionally, the residuals for the self-stigma and disclosure risks variables were allowed to correlate, as previous research suggests the two constructs are related (Vogel et al., 2006). Distress, participant sex, and previous help seeking were included as control variables in the model.

First, a fully recursive (i.e., partially mediated) model was tested, which included direct paths between all study variables (see Figure 1). Next, a more parsimonious, full-mediation model was tested (see Figure 2), which only included the direct paths from self-reliance and emotional control to self-stigma and disclosure risks, the direct paths from self-stigma and disclosure risks to help-seeking attitudes, and the direct path from attitudes to help-seeking intentions. It has been recommended that both a fully mediated and partially mediated model be tested to see which model provides a better fit to the data (Holmbeck, 1997). To determine the

best fitting mediation model, a scaled chi-square difference test (Satorra & Bentler, 2001) between the fully recursive and full-mediation models will be conducted.

Indirect Effects. Once the best fitting mediation model was determined, the indirect effects between self-reliance and emotional control, and help-seeking intentions were examined. As suggested by Shrout and Bolger (2002), a bootstrap procedure was used to test for the specific indirect effects. Bootstrapping empirically determines the significance of statistical estimates (Efron & Tibshirani, 1993), by running the mediation model separately with a number of bootstrapped samples. This method is considered an effective method for measuring indirect effects in three-path mediation models, and has the benefit of providing confidence intervals for effect sizes (Taylor, MacKinnon, & Tien, 2008). For this study, bias-corrected bootstrapping was conducted by creating 1,000 bootstrap data samples. This is done by the Mplus program which randomly samples with replacement from the original data set. The best fitting mediation model (i.e., full-mediation or partial mediation) was then run using each of the 1,000 samples to estimate each path coefficient. Then, Mplus calculated an indirect effect by multiplying the 1,000 path coefficients for each indirect path, and provided confidence intervals based on the 1,000 iterations.

Sex Comparison. In order to examine differences between men and women, a SEM multiple-group comparison analysis was used to test the invariance of each structural path coefficient in the best fitting mediation model. To compare men and women, a model was run in which the structural path coefficients were freely estimated for men and women separately, followed by a model in which the structural path coefficients were set to be equal (i.e., fixed). Then, a scaled chi-square difference test was used to determine if the two models (the freely estimated and fixed path models) were statistically equivalent. The invariance of each path was

tested if the two models were not equivalent (i.e., the chi-square difference test is significant), by comparing the fully fixed model with a model in which one of the structural paths was allowed to be freely estimated.

Model 4: Mediation Model with Interaction Terms

After testing the mediation model, two interaction terms were added. Specifically, an interaction term between self-reliance and self-compassion and an interaction term between emotional control and self-compassion were added to the model. To create the interaction term in Mplus, the latent moderated structural equations (LMS; Klein & Moosbrugger, 2000) method was used. This method has received support in the literature; with Monte Carlo simulation results indicating that LMS reduces the likelihood of biased estimates compared to other methods of estimating interaction effects (Maslowsky, Jager, & Hemken, 2015), and has previously been used to examine interactions between masculine norms and help-seeking outcomes (Heath et al., 2017). Paths were added from each of the two interaction terms to both self-stigma and disclosure risks. One challenge associated with modeling latent interaction terms is that the MLR method in Mplus does not allow for modeling latent interactions. As such, the default maximum likelihood (ML) method was used to estimate the model that included the interaction term. Additionally, models including latent variable interactions do not allow for the examination of common model fit indices (i.e., CFI, IFI, RMSEA, SRMR). However, two other fit indices, the Akaike's information criterion (AIC) and Bayesian information criterion (BIC), can be calculated, and were used to assess whether the models with interaction terms were significantly different from the models that did not include the interaction terms. Because traditional fit indices are not calculated for models including interaction terms, sex comparisons for the interaction terms will also rely on the use of the AIC and BIC fit indices. If men or

women had significant interaction terms, a model in which the paths for the interaction terms were fixed for both men and women were compared to a series of models in which each interaction path was freely estimated. Differences of 10 or greater on the AIC and BIC indicate model fit difference (Burnham & Anderson, 2002; Kass & Raftery, 1995).

Model 5: Behavioral Outcome Model

The final model that was examined substituted two behavioral outcomes for the help-seeking intentions variable (see Figure 4). Specifically, the decision to click on a link to get more information about mental health concerns and the decision to click on a link to get more information about counseling services were assessed. This type of model was previously examined using the probit regression function in Mplus (Lannin et al., 2016). Use of this method requires a robust weighted least squares estimation in Mplus (i.e., WLSMV estimator), which has been shown to work well with samples greater than 200 cases (Brown, 2006; Muthén, du Toit, & Spisic, 1997). Unfortunately, since this method requires the WLSMV estimator, interaction terms cannot be included in this model, and were dropped for this portion of the analyses. Sex comparisons were conducted in the same way as those conducted for the mediation model.

CHAPTER 4

RESULTS

Participants

Sample 1. Sample 1 was composed of college students enrolled at Iowa State University. Two emails were sent out to potential participants inviting participation, one week apart. In total, these emails were sent to 31,195 students at Iowa State University who had their email addresses publicly listed through the University Registrar Office. A total of 2,466 students started and completed a portion of the survey. Of those, a total of 1,041 completed the survey and responded correctly to at least three of the four attention check items, and had less than 10% missing data across all scales. Sample 1 included 576 women (55.3%), 370 men (35.5%), seven (0.7%) who responded 'other,' and 88 (8.5%) who did not provide a response. The sample included five participants (0.5%) who identified as African American, three (0.3%) who identified as American Indian or Alaskan Native, 60 (5.8%) who identified as Asian or Asian American, 33 (3.2%) who identified as Hispanic or Latino/a, one (0.1%) who identified as Native Hawaiian or Pacific Islander, 34 (3.3%) who identified as multi-racial, 803 (77.1%) who identified as White or European American, 11 (1.0%) who entered a self-identifying response (e.g., Croatian, African), and 91 (8.7%) who did not respond. Seventy-three participants (7.0%) reported they were bisexual, 30 (2.9%) reported they were gay or lesbian, 788 (75.7%) reported they were heterosexual, 22 (2.1%) reported they were questioning, 38 (3.7%) chose to self-identify (e.g., asexual), and 90 (8.6 %) did not respond. The sample included 120 (11.5%) first year students, 165 (15.9%) second year students, 217 (20.8%) third year students, 219 (21.0%) fourth year students, 232 (22.3%) students who reported 'other' (e.g., fifth year, graduate student), and 88 (8.5%) who did not respond. Roughly 38.7% of the sample reported that they

had sought help from a mental health professional at some point in their life. The mean age was 22.52 years old (SD = 4.60; range: 18 – 62).

Sample 2. Sample 2 was composed of community adults that were registered with the Amazon Mechanical Turk (MTurk) website. Participants from Sample 2 were collected through MTurk, where the study information was posted for two months. A total of 1,701 individuals accessed and completed a portion of the survey. Of those, a total of 1,007 completed the survey and responded correctly to at least three of the four attention check items. Sample 2 included 682 women (67.7%), 245 men (24.4%), two (0.2%) who responded ‘other,’ and 78 (7.7%) who did not provide a response. The sample included 80 participants (7.9%) who identified as African American, seven (0.7%) who identified as American Indian or Alaskan Native, 51 (5.1%) who identified as Asian or Asian American, 63 (6.3%) who identified as Hispanic or Latino/a, one (0.1%) who identified as Native Hawaiian or Pacific Islander, 31 (3.1%) who identified as multi-racial, 685 (68.0%) who identified as White or European American, 11 (1.1%) who entered a self-identifying response (e.g., Croatian, African), and 78 (7.7%) who did not respond. One-hundred and one participants (10.0%) reported they were bisexual, 45 (4.5%) reported they were gay or lesbian, 741 (73.6%) reported they were heterosexual, 13 (1.3%) reported they were questioning, 29 (2.9%) chose to self-identify (e.g., asexual), and 78 (7.7 %) did not respond. Roughly 48.9% of the sample reported that they had sought help from a mental health professional at some point in their life. The mean age was 35.91 years old (SD = 12.20; range: 18 – 82).

Normality

A Kolmogorov–Smirnov test of univariate normality was conducted using SPSS version 22 on the composite measures included in the analyses (i.e., emotional control, self-reliance, self-

compassion, self-stigma, disclosure risks, help-seeking attitudes, and help-seeking intentions). This test was conducted for the student and MTurk samples separately. Results indicated that, for each group, each measure violated univariate normality (i.e., $p < .05$), precluding multivariate normality. To address this non-normality, subsequent structural equation modeling in Mplus utilized the robust maximum-likelihood estimator (MLR) in Mplus, which utilizes an adjusted chi-square statistic that is robust to non-normality (Muthén & Muthén, 2010; Satorra & Bentler, 2001).

Initial Analyses

The means and standard deviations for all study variables are reported in Table 1, and are broken apart by group (i.e., student sample and MTurk sample). There were significant group differences across nine of the measures, with students reporting lower levels of self-compassion ($p < .05$; Cohen's $d = .11$), help-seeking attitudes ($p < .001$; Cohen's $d = .23$), help-seeking intentions ($p < .001$; Cohen's $d = .27$), stress ($p < .001$; Cohen's $d = .28$), anxiety ($p < .001$; Cohen's $d = .27$), and depression ($p < .001$; Cohen's $d = .26$), than the community sample. In contrast, the community sample reported lower levels of emotional control ($p < .05$; Cohen's $d = .09$), self-stigma ($p < .001$; Cohen's $d = .32$), and disclosure risks ($p < .01$; Cohen's $d = .15$), than the student sample. All group differences displayed small to medium effects. Zero-order correlations between all continuous study variables (i.e., not including the behavioral information seeking outcomes) are summarized in Table 2, and are split by group.

Structural Equation Modeling

Structural equation modeling (SEM) in Mplus version 6.11 was used to examine the hypothesized mediation models (Frazier, Tix, & Barron, 2004; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002).

Table 1. Means and standard deviations of variables, by group

Variable	Sample				Mean Difference		
	Sample 1: Students (n = 1,041)		Sample 2: MTurk (n = 1,007)		<i>t</i>	<i>p</i>	<i>d</i>
	Mean	SD	Mean	SD			
Self-Compassion	3.10	0.70	3.18	0.78	-2.48	.01	.11
Emotional Control	2.52	0.68	2.46	0.60	2.39	.02	.09
Self-Reliance	2.53	0.62	2.56	0.62	-1.20	.23	.05
Self-Stigma	2.56	0.74	2.32	0.74	7.16	.00	.32
Disclosure Risks	3.15	1.08	2.99	1.11	3.26	.00	.15
Help-Seeking Attitudes	2.76	0.59	2.96	0.58	-7.60	.00	.23
Help-Seeking Intentions	2.96	1.07	3.26	1.19	-6.01	.00	.27
Stress	0.94	0.65	1.14	0.77	-6.18	.00	.28
Anxiety	0.62	0.62	0.80	0.73	-5.73	.00	.27
Depression	0.82	0.75	1.03	0.85	-6.09	.00	.26

Table 2. Zero-order correlations between all study variables

	DASS	SS	SC	Risk	EC	SeReli	ATT	INT
DASS	--	.05	-.35***	.22***	.14***	.27***	.11***	.27***
SS	.10**	--	-.22***	.44***	.36***	.40***	-.66***	-.47***
SC	-.33***	-.05	--	-.25***	-.23***	-.28***	.06	.07*
Risk	.20***	.36***	-.16***	--	.38***	.38***	-.33***	-.18***
EC	.10**	.30***	-.16***	.33***	--	.52***	-.37***	-.29***
SeReli	.22***	.22***	-.25***	.29***	.45***	--	-.31***	-.19***
ATT	.03	-.68***	-.07*	-.30***	-.28***	-.15**	--	.63***
INT	.32***	-.33***	-.05	-.10**	-.17***	-.10**	.49***	--

Note. Student correlations above diagonal, community correlations below diagonal. DASS = Distress, SS = Self-Stigma, SC = Self-Compassion, Risk = Disclosure Risks, EC = Emotional Control, SeReli = Self Reliance, ATT = Help-Seeking Attitudes, INT = Help-Seeking Intentions.

* $p < .05$ ** $p < .01$ *** $p < .001$

Parceling. Observed indicators, or parcels, were created for seven of the eight latent variables to help reduce the number of parameters present in the analyses, and to help meet the assumptions of the maximum-likelihood method used in SEM by helping to account for possible violations of multivariate normality (see Russell, Kahn, Spoth, & Altmaier, 1998, for a discussion). The distress measure includes three subscales which were used as indicators in the subsequent analyses, and as such, was not parceled. To create the parcels for the other seven variables, factor analyses were conducted for each variable separately using the maximum-likelihood method, and fitting to a one-factor solution. This process resulted in item loadings for each variable, which were then ranked in order from strongest factor loading to weakest factor loading. The highest and lowest ranking items were then parceled in pairs, until all items were assigned to one of the three parcels. This method helped insure that the loading of each parcel on its respective latent factor was relatively equal (Russell et al., 1998). The items assigned to each parcel were then averaged to create the overall parcel score. These parcels were then used as indicator variables in the subsequent latent variable structural equation models.

Model 1: Measurement model

An initial measurement model was examined to assess how well the indicator variables estimated their respective latent variables. The measurement model did not include participant sex and whether they had previously sought professional psychological help, which were observed manifest variables that were added to subsequent structural models as control variables. Using the full sample (i.e., both the student and community samples), the model demonstrated acceptable fit to the data, Satorra-Bentler Adjusted (SB) χ^2 (224) = 1,481.82, $p < .001$; CFI = .95; TLI = .94; RMSEA = .05, 90% CI [.05, .06]; SRMR = .04. Next, the measurement model was examined for the student and community samples separately. The student sample demonstrated

an adequate fit to the data, SB χ^2 (224) = 760.07, $p < .001$; CFI = .96; TLI = .95; RMSEA = .05, 90% CI [.04, .05]; SRMR = .05, as did the MTurk sample, SB χ^2 (224) = 909.66, $p < .001$; CFI = .95; TLI = .94; RMSEA = .06, 90% CI [.05, .06]; SRMR = .05. The parcel loadings for the student and community samples are presented in Table 3 and Table 4, respectively. The latent variable correlations, split by sample, are included in Table 5.

Invariance Testing The equivalence of indicator loadings (i.e., metric invariance) and intercepts (i.e., scalar invariance) were then examined to determine if subsequent between group comparisons could be made (Vandenberg & Lance, 2000). To test metric invariance, a model in which all loadings are allowed to freely estimate between groups is compared to a model in which the loadings are constrained to be equal across groups. Next, to test scalar invariance, a model in which all intercepts are allowed to freely estimate between groups is compared to a model in which all intercepts are constrained to be equal across groups. These models are compared by examining the change in model CFI, as recommended by Cheung and Lau (2012). Per recommendation, the free and constrained models are considered equivalent (i.e., invariance is met), if the change in CFI values is less than .01 between the two models.

The metric invariance for the student and community samples was tested first. The change in CFI was less than .01 between the model in which all indicator loadings were fixed between groups (CFI = .954) and the model in which all indicator loadings were allowed to freely estimate between groups (CFI = .955), indicating that the student and community samples had equivalent indicator loadings. Next, the free and fixed scalar invariance models were examined. The change in CFI was more than .01 between the model in which all indicator intercepts were fixed between groups (CFI = .942) and the model in which all indicator loadings were allowed to freely estimate between groups (CFI = .954), indicating that scalar invariance

was not achieved. Overall, these results indicate that, while the loadings of the indicator variables on their latent factors were equivalent across the student and community samples, the intercepts of the indicator variables were not equivalent. As such, latent mean differences could not be examined due to the lack of intercept equivalence.

Table 3. Parcel loadings on the latent variables in the measurement model for the student sample (N = 1,041)

Measured Variable	Unstandardized Factor Loading	SE	Z	Standardized Factor Loading
Emotional Control				
Parcel 1	1.00	0.00	----	0.89 ^{***}
Parcel 2	1.02	0.03	41.22	0.91 ^{***}
Parcel 3	1.02	0.03	41.60	0.89 ^{***}
Self-Reliance				
Parcel 1	1.00	0.00	----	0.88 ^{***}
Parcel 2	0.99	0.03	29.65	0.84 ^{***}
Parcel 3	1.07	0.04	27.78	0.77 ^{***}
Self-Compassion				
Parcel 1	1.00	0.00	----	0.88 ^{***}
Parcel 2	0.98	0.03	31.61	0.85 ^{***}
Parcel 3	1.06	0.04	28.66	0.79 ^{***}
Self-Stigma				
Parcel 1	1.00	0.00	----	0.86 ^{***}
Parcel 2	0.87	0.03	31.37	0.81 ^{***}
Parcel 3	0.99	0.03	31.05	0.86 ^{***}
Disclosure Risks				
Parcel 1	1.00	0.00	----	0.77 ^{***}
Parcel 2	1.05	0.04	27.07	0.76 ^{***}
Parcel 3	1.06	0.05	20.54	0.81 ^{***}
Attitudes				
Parcel 1	1.00	0.00	----	0.82 ^{***}
Parcel 2	1.03	0.04	25.69	0.81 ^{***}
Parcel 3	0.96	0.04	23.74	0.74 ^{***}
Intentions				
Parcel 1	1.00	0.00	----	0.90 ^{***}
Parcel 2	1.00	0.03	34.11	0.83 ^{***}
Parcel 3	0.93	0.03	30.79	0.79 ^{***}
Distress				
Parcel 1	1.00	0.00	----	0.90 ^{***}
Parcel 2	0.84	0.03	26.93	0.81 ^{***}
Parcel 3	0.98	0.04	25.81	0.77 ^{***}

^{***} $p < .001$

Table 4. Parcel loadings on the latent variables in the measurement model for the community sample (N = 1,007)

Measured Variable	Unstandardized Factor Loading	SE	Z	Standardized Factor Loading
Emotional Control				
Parcel 1	1.00	0.00	----	0.87***
Parcel 2	0.92	0.03	30.07	0.86***
Parcel 3	0.90	0.03	28.26	0.81***
Self-Reliance				
Parcel 1	1.00	0.00	----	0.87***
Parcel 2	0.82	0.04	18.55	0.72***
Parcel 3	0.98	0.05	21.35	0.69***
Self-Compassion				
Parcel 1	1.00	0.00	----	0.92***
Parcel 2	0.98	0.03	37.66	0.87***
Parcel 3	1.07	0.03	37.49	0.87***
Self-Stigma				
Parcel 1	1.00	0.00	----	0.85***
Parcel 2	0.99	0.03	34.70	0.86***
Parcel 3	1.00	0.03	29.24	0.84***
Disclosure Risks				
Parcel 1	1.00	0.00	----	0.77***
Parcel 2	1.08	0.04	25.24	0.77***
Parcel 3	1.08	0.06	18.40	0.82***
Attitudes				
Parcel 1	1.00	0.00	----	0.74***
Parcel 2	1.08	0.06	18.15	0.79***
Parcel 3	1.10	0.06	17.12	0.74***
Intentions				
Parcel 1	1.00	0.00	----	0.90***
Parcel 2	1.04	0.03	34.11	0.86***
Parcel 3	1.04	0.03	30.79	0.84***
Distress				
Parcel 1	1.00	0.00	----	0.91***
Parcel 2	0.85	0.03	34.65	0.82***
Parcel 3	1.05	0.03	34.93	0.87***

p < .001

Table 5. Latent variable correlations

	DASS	SS	SC	Risk	EC	SeReli	ATT	INT
DASS	--	.03	-.39***	.23***	.12**	.28***	.15***	.33***
SS	.10**	--	-.24***	.52***	.40***	.46***	-.78***	-.54***
SC	-.38***	-.05	--	-.27***	-.24***	-.31***	.06	.06
Risk	.22***	.44***	-.15***	--	.46***	.45***	-.42***	-.25***
EC	.12**	.34***	-.18***	.41***	--	.58***	-.43***	-.32***
SeReli	.25***	.26***	-.25***	.34***	.54***	--	-.37***	-.22***
ATT	.02	-.80***	-.10*	-.39***	-.33***	-.20**	--	.73***
INT	.36***	-.36***	-.06	-.13*	-.20***	-.11*	.56***	--

Note. Student correlations above diagonal, community correlations below diagonal. DASS = Distress, SS = Self-Stigma, SC = Self-Compassion, Risk = Disclosure Risks, EC = Emotional Control, SeReli = Self Reliance, ATT = Help-Seeking Attitudes, INT = Help-Seeking Intentions.
* $p < .05$ ** $p < .01$ *** $p < .001$

Metric and scalar invariance were also examined across the men and women in both the student and community sample in order to determine whether comparisons of path strengths and latent means were possible across men and women in each sample. These analyses were conducted in the same fashion as the previous comparison between the student and community samples. In the student sample, the change in CFI was less than .01 between the models where indicator loadings were freely estimated (CFI = .961) and constrained (CFI = .958), suggesting that the indicator loadings were invariant across men and women. Next, the model in which all intercepts were freely estimated was compared to a model in which all the intercepts were constrained to be equal. Results indicated that the freely estimated (CFI = .958) and the constrained (CFI = .944) models were not equivalent, suggesting differences in the indicator intercepts across men and women.

In the community sample, the change in CFI was less than .01 between the models where indicator loadings were freely estimated (CFI = .944) and constrained (CFI = .944), suggesting that the two models were equivalent and metric invariance was met across men and women.

Next, the model in which all intercepts were freely estimated was compared to a model in which all the intercepts were constrained to be equal. Results indicated that the freely estimated (CFI = .944) and the constrained (CFI = .939) models were equivalent, suggesting that the indicator intercepts were statistically equivalent across men and women. As such, the latent means of each study variable were compared across men and women in the community sample only. Results indicated that men reported significantly higher latent means of self-stigma ($p < .001$) and emotional control ($p < .01$), relative to women. In contrast, women reported significantly higher latent means of self-reliance ($p < .05$) and help-seeking attitudes ($p < .001$), than men.

Overall, these results indicate that, while the loadings of the indicator variables on their latent factors were equivalent across men and women in the student and community samples, the intercepts of the indicator variables were only equivalent across men and women in the community sample. As such, latent mean comparisons were only possible across the men and women in the community sample. Despite this, subsequent analyses examining the relative strengths of the path models across men and women in both samples, and across the general student and community samples, were still conducted as only factor loading equivalence is needed to compare groups on the strengths of relationships between latent factors (Bauer, 2017).

Models 2 and 3: Structural Mediation Models

Next, two structural models were tested in which self-reliance, emotional control, and self-compassion predicted self-stigma and disclosure risks, self-stigma and disclosure risks predicted help-seeking attitudes, and help-seeking attitudes predicted help-seeking intentions. Distress, participant sex, and previous help-seeking behavior from a mental health professional were added as control variables, and regressed onto all exogenous variables (i.e., help-seeking intentions, self-stigma, disclosure risks, and help-seeking attitudes). First, the hypothesized,

fully-mediated model was tested in which only the direct paths from self-reliance, emotional control, and self-compassion to self-stigma and disclosure risks, the direct paths from self-stigma and disclosure risks to help-seeking attitudes, and the direct path from attitudes to help-seeking intentions were included. Second, a fully recursive, partial mediation, model was tested in which all direct paths were included. Second, This is in line with previous recommendations that both a fully mediated and partially mediated model should be tested when attempting to identify the best fitting model (Holmbeck, 1997).

For the student sample, the fully mediated model demonstrated adequate fit to the data, $SB \chi^2 (272) = 992.26, p < .001$; CFI = .95; TLI = .94; RMSEA = .05, 90% CI [.05, .05]; SRMR = .07. The fully recursive (i.e., partial mediation) model also demonstrated adequate fit to the data, $SB \chi^2 (264) = 956.36, p < .001$; CFI = .95; TLI = .94; RMSEA = .05, 90% CI [.05, .06]; SRMR = .06. The difference in fit between the two models was examined using a scaled chi-square difference test (Satorra & Bentler, 2001). The results of the scaled chi-square difference test suggested a significant difference in fit between the two models, $\Delta \chi^2 (8) = 35.80, p < .001$. Specifically, the scaled chi-square difference test indicated that the fully mediated model was a worse fit than the fully recursive model, and as such, the fully recursive (partially mediated) model was retained for subsequent analyses. Figure 5 presents the standardized path coefficients for the fully recursive model. Examination of the fully recursive model suggests that there were three direct paths that led to the full mediation model to fail. These were the direct paths from self-compassion to help-seeking attitudes, from self-compassion to help-seeking intentions, and from emotional control to help-seeking attitudes.

For the community sample, the fully mediated model demonstrated adequate fit to the data, $SB \chi^2 (272) = 1,051.89, p < .001$; CFI = .94; TLI = .93; RMSEA = .06, 90% CI [.05, .06];

SRMR = .06. The fully recursive model also demonstrated adequate fit to the data, $SB \chi^2 (264) = 1,015.03, p < .001$; CFI = .94; TLI = .93; RMSEA = .06, 90% CI [.05, .06]; SRMR = .05. The results of the scaled chi-square difference test suggested a significant difference in fit between the two models as well, $\Delta \chi^2 (8) = 36.55, p < .001$. Specifically, the chi-square difference test indicated that the fully mediated model was a worse fit than the fully recursive model, and as such, the fully recursive (i.e., partially mediated) model was retained for subsequent analyses. Figure 6 presents the standardized path coefficients for the fully recursive model. Examination of the fully recursive model suggests that there were three direct paths that led to the full mediation model to fail. These were the direct paths from self-compassion to help-seeking attitudes, from self-compassion to help-seeking intentions, and from self-stigma to help-seeking intentions. Interestingly, self-stigma was positively associated with help-seeking intentions in the community model, though this was likely due to a suppression effect. Specifically, there was a large beta coefficient for the path from self-stigma to help-seeking attitudes which may have forced the beta coefficient of the self-stigma to intentions path to flip directions. This is further supported by the significant, negative, latent variable correlation between the two constructs.

Indirect Effects. Bootstrap sampling (Shrout & Bolger, 2002), was used to examine the indirect effects from self-reliance, emotional control, and self-compassion to help-seeking intentions. The fully recursive model was used for both the student and community samples, as this was the best fitting model from the structural mediation model tests. The mediation model was run with 1,000 bootstrap samples to examine the total and specific indirect effects from each of the three predictors to help-seeking intentions. This generated non-standardized indirect effect beta coefficients. Additionally, 95% confidence intervals were generated for each of the

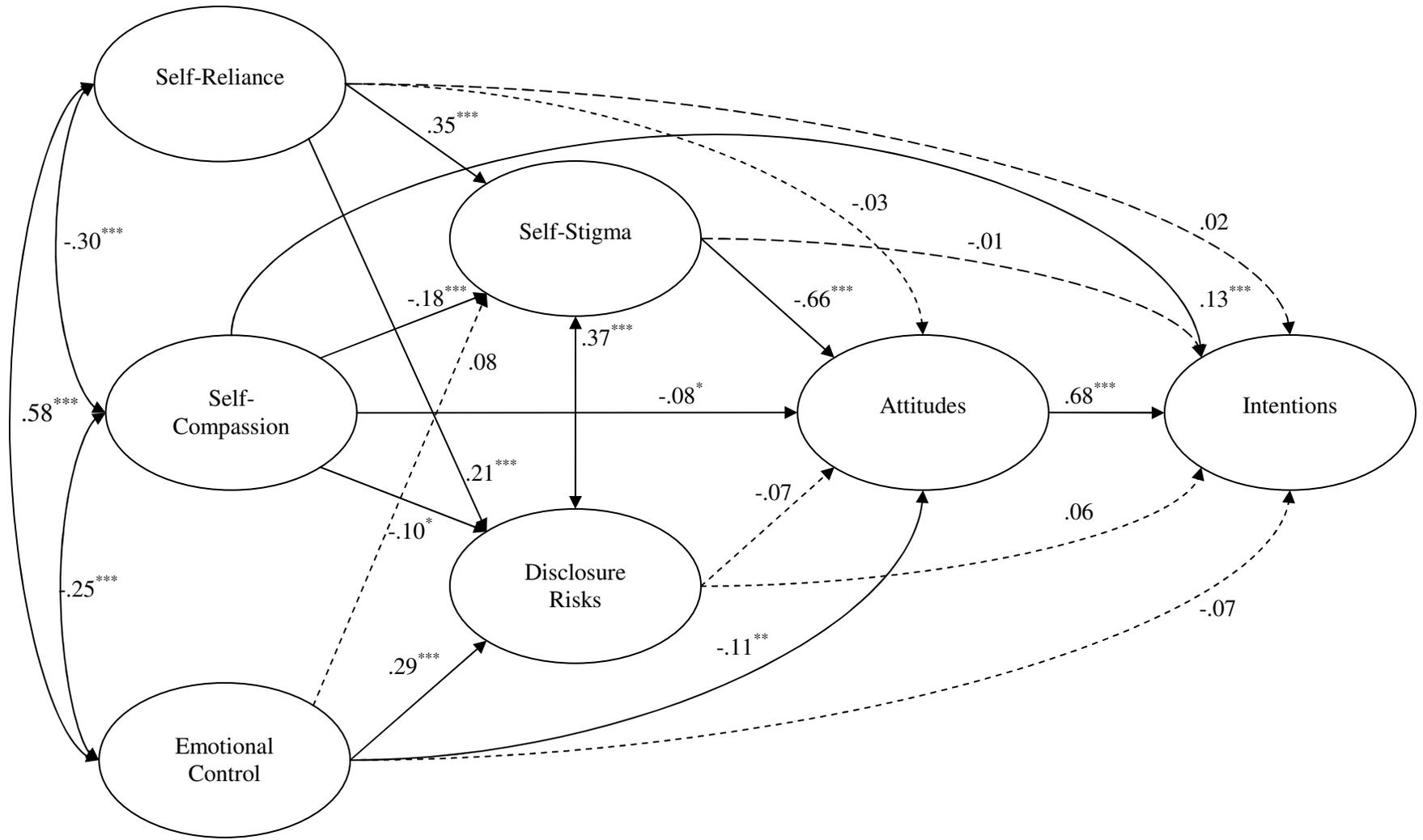


Figure 5. Fully-recursive model for student sample

Note. Distress and previous help seeking are included as controls, not included in figure for ease of presentation.

* $p < .05$ ** $p < .01$ *** $p < .001$

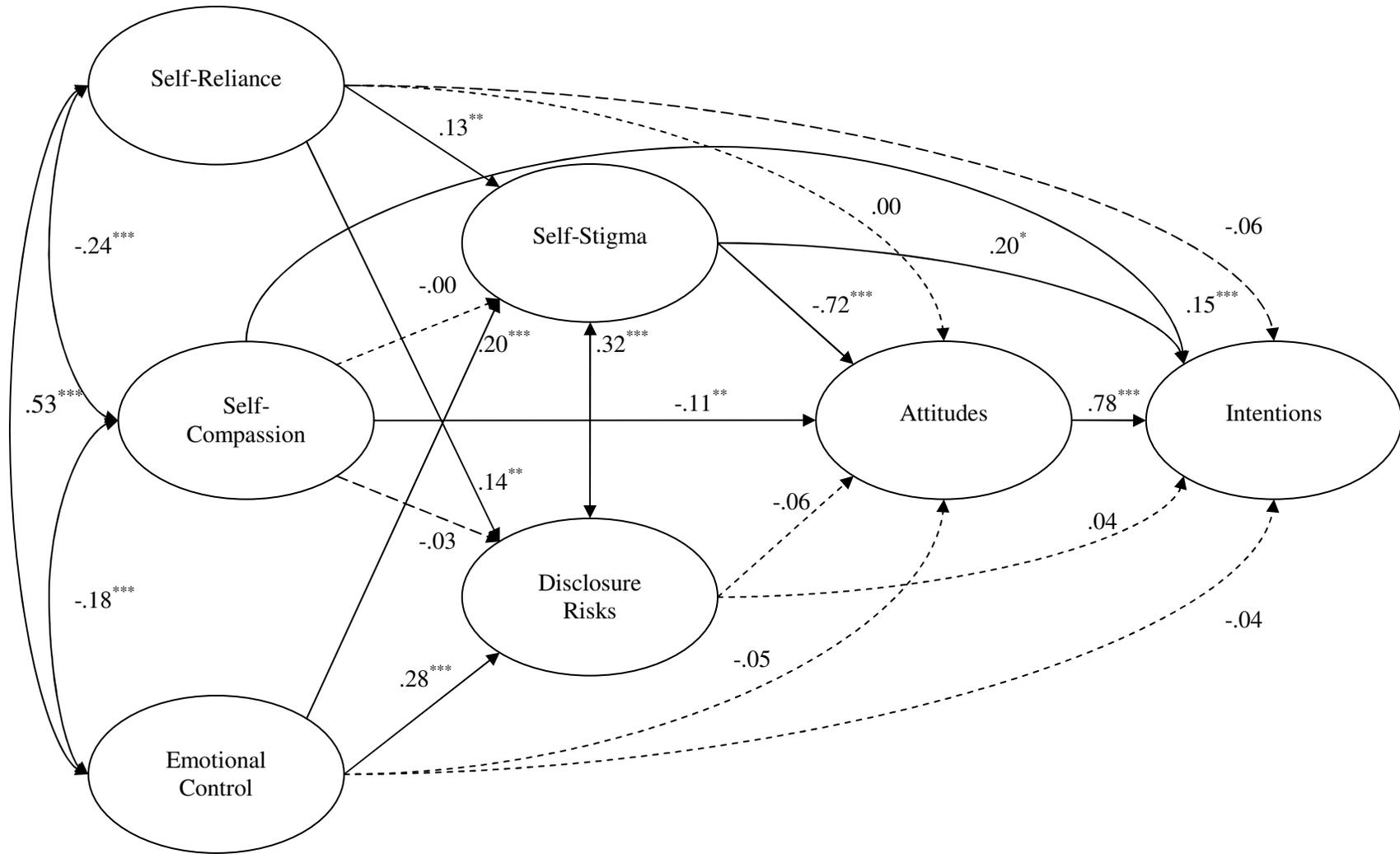


Figure 6. Fully-recursive model for community sample

Note. Distress and previous help seeking are included as controls, not included in figure for ease of presentation.

* $p < .05$ ** $p < .01$ *** $p < .001$

indirect effects to determine the significance of each effect. If the confidence interval included 0, the indirect effect was not significantly different from 0. For the student sample, results indicated that the total indirect effects from self-reliance ($B = -.30$; 95% CI $[-.43, -.18]$), and emotional control ($B = -.17$; 95% CI $[-.27, -.06]$), to help-seeking intentions were significant. Specifically, both self-reliance and emotional control significantly predicted lower help-seeking intentions through the mediating variables of self-stigma, disclosure risks, and help-seeking attitudes. In contrast, the indirect effect from self-compassion to help-seeking intentions was not statistically significant ($B = .04$; 95% CI $[-.06, .13]$), indicating that self-compassion did not significantly predict help-seeking intentions through the mediating variables of self-stigma, disclosure risks, and help-seeking attitudes.

The specific indirect effects for the student sample were also examined (Table 6). Results indicated that self-reliance had a significant, inverse, indirect relationship with help-seeking intentions through self-stigma and attitudes. Emotional control had a significant, inverse, indirect relationship with intentions through attitudes. Interestingly, self-compassion had a significant, inverse, indirect relationship with intentions through attitudes, and had a significant, positive, indirect relationship with intentions through stigma and attitudes.

For the community sample, results indicated that the total indirect effects from emotional control ($B = -.21$; 95% CI $[-.36, -.08]$), and self-compassion ($B = -.12$; 95% CI $[-.22, -.04]$), to help-seeking intentions were significant. In contrast, the indirect effect from self-reliance to help-seeking intentions was not statistically significant ($B = -.08$; 95% CI $[-.22, .05]$). Specifically, both emotional control and self-compassion significantly predicted lower help-seeking intentions through the mediating variables of self-stigma, disclosure risks, and help-seeking attitudes.

Table 6. Indirect effects from self-reliance, emotional control, and self-compassion to intentions for the student sample

Predictor	Mediator	Mediator	Outcome	B	95% CI
Self-Reliance	→ Stigma		→ Intentions	-.00	-.09, .08
			→ Intentions	.02	-.01, .06
	→ Risks	→ Attitudes	→ Intentions	-.03	-.13, .07
		→ Attitudes	→ Intentions	-.27	-.38, -.18
	→ Risks	→ Attitudes	→ Intentions	-.02	-.05, .00
	Total Indirect			-.30	-.43, -.18
Total Effect			-.27	-.42, -.11	
Emotional Control	→ Stigma		→ Intentions	-.00	-.02, .02
			→ Intentions	.03	-.02, .07
	→ Risks	→ Attitudes	→ Intentions	-.11	-.20, -.03
		→ Attitudes	→ Intentions	-.06	-.14, .00
	→ Risks	→ Attitudes	→ Intentions	-.02	-.06, .01
	Total Indirect			-.17	-.27, -.06
Total Effect			-.27	-.40, -.12	
Self-Compassion	→ Stigma		→ Intentions	.00	-.04, .04
			→ Intentions	-.01	-.03, .00
	→ Risks	→ Attitudes	→ Intentions	-.09	-.17, -.02
		→ Attitudes	→ Intentions	.13	.07, .20
	→ Risks	→ Attitudes	→ Intentions	.01	-.00, .03
	Total Indirect			.04	-.06, .13
Total Effect			.24	.11, .36	

Note. Significant indirect effects in bold. All values are non-standardized. Total effects represent the combination of the total direct and total indirect effect.

The specific indirect effects for the community sample were also examined (Table 7). Results indicated that self-reliance had a significant, inverse, indirect relationship with help-seeking intentions through self-stigma and attitudes. Self-reliance had small but statistically significant, positive, indirect effect on help-seeking intentions through stigma. Emotional control also had a significant, inverse, indirect relationship with intentions through stigma and attitudes, however, it had a significant, positive, indirect relationship with intentions through stigma. This might also be due to a suppression effect, as the zero-order correlation between the two variables is negative. Similar to the student sample, self-compassion again had a significant, inverse, indirect relationship with intentions through attitudes.

Table 7. Indirect effects from self-reliance, emotional control, and self-compassion to intentions for community sample

Predictor	Mediator	Mediator	Outcome	B	95% CI
Self-Reliance	→ Stigma		→ Intentions	.05	.00, .12
			→ Intentions	.01	-.01, .04
	→ Risks	→ Attitudes	→ Intentions	.00	-.11, .12
		→ Attitudes	→ Intentions	-.13	-.25, -.03
		→ Attitudes	→ Intentions	-.01	-.04, .00
	Total Indirect			-.08	-.22, .05
Total Effect			-.19	-.37, -.00	
Emotional Control	→ Stigma		→ Intentions	.07	.01, .17
			→ Intentions	.02	-.02, .07
	→ Risks	→ Attitudes	→ Intentions	-.08	-.21, .04
		→ Attitudes	→ Intentions	-.21	-.34, -.10
		→ Attitudes	→ Intentions	-.02	-.07, .01
	Total Indirect			-.21	-.36, -.08
Total Effect			-.29	-.45, -.12	
Self-Compassion	→ Stigma		→ Intentions	-.00	-.04, .02
			→ Intentions	-.00	-.02, .00
	→ Risks	→ Attitudes	→ Intentions	-.13	-.23, -.05
		→ Attitudes	→ Intentions	.01	-.06, .08
		→ Attitudes	→ Intentions	.00	-.00, .02
	Total Indirect			-.12	-.22, -.04
Total Effect			.10	-.02, .21	

Note. Significant indirect effects in bold. All values are non-standardized. Total effects represent the combination of the total direct and total indirect effect.

Sex Comparison. Next, the invariance of the fully-recursive model across men and women was examined using a SEM multiple group comparison analysis on the student and MTurk samples, separately. Participant sex was dropped as a control variable for these analyses, as this was the grouping variables. To conduct the multiple group comparison analysis, a free model in which all paths were allowed to freely estimate between men and women was compared with a fixed model in which all the paths were constrained to be equal across men and women. Then, a scaled chi-square difference test was used to determine whether the free and fixed models were equivalent. For the student sample, the freely estimated model showed adequate fit to the data, $SB \chi^2(520) = 1,265.88, p < .001$; CFI = .94; TLI = .94; RMSEA = .06, 90% CI [.05, .06]; SRMR = .06. The fixed model also demonstrated adequate fit, $SB \chi^2(549) =$

1,297.02, $p < .001$; CFI = .94; TLI = .94; RMSEA = .05, 90% CI [.05, .06]; SRMR = .07.

Results from the scaled chi-square difference test indicated that the two models were statistically equivalent, $\Delta \chi^2(29) = 32.54$, $p = .30$, suggesting that the structural model was invariant across men and women.

For the community sample, the freely estimated model showed adequate fit to the data, SB $\chi^2(520) = 1,287.64$, $p < .001$; CFI = .94; TLI = .93; RMSEA = .06, 90% CI [.05, .06]; SRMR = .06. The fixed model also demonstrated adequate fit, SB $\chi^2(549) = 1,334.65$, $p < .001$; CFI = .94; TLI = .93; RMSEA = .06, 90% CI [.05, .06]; SRMR = .06. Results from the scaled chi-square difference test indicated that the two models were not-equivalent, $\Delta SB \chi^2(29) = 47.72$, $p = .02$, suggesting that the structural model was not invariant across men and women. As a result, the invariance of each path was tested by comparing the fully fixed model with a model in which one of the structural paths was allowed to be freely estimated. This process was repeated for each path in the model. Results indicated that there were two paths that were not equivalent across the groups, though neither of these paths were hypothesized paths in the model. One was the path from the covariate of distress to disclosure risks, $\Delta SB \chi^2(1) = 6.21$, $p = .01$, and the other was the correlation between self-stigma and disclosure risks, $\Delta SB \chi^2(1) = 6.49$, $p = .01$. The path from distress to disclosure risks was higher for men ($\beta = .28$, $p < .001$) than for women ($\beta = .13$, $p < .01$); and the correlation between self-stigma and disclosure risks was higher for women ($\beta = .37$, $p < .001$) than for men ($\beta = .15$, $p = .06$). While neither of these paths were part of the direct or indirect links between masculine norms and help-seeking outcomes, the indirect paths were again tested for men and women separately (with the two non-invariant paths allowed to freely estimate) to determine if these non-invariant paths would effect the indirect effects

between masculine norms and help-seeking outcomes. Results indicated that there were no differences in the pattern of significance of the indirect effects for men and women separately.

Sample Comparison. Next, to examine any path differences across the two samples, the invariance of the fully recursive model was examined across the student and community samples. Participant sex was added back into the model, as it was no longer used as the grouping variable. The freely estimated model, $SB \chi^2(560) = 2,213.33, p < .001$; CFI = .94; TLI = .93; RMSEA = .06, 90% CI [.05, .06]; SRMR = .06, and the fixed model, $SB \chi^2(593) = 2,287.82, p < .001$; CFI = .94; TLI = .93; RMSEA = .06, 90% CI [.05, .06]; SRMR = .07, yielded a significant scaled chi-square difference test, $\Delta SB \chi^2(33) = 75.41, p < .001$, suggesting that the structural model was not invariant across the two samples. As a result, the invariance of each path was tested by comparing the fully fixed model with a model in which one of the structural paths was allowed to be freely estimated. This process was repeated for each path in the model. Results indicated that there were eight paths that were not equivalent across the groups. Five of the non-invariant paths involved the control variables of distress, participant sex, or previous professional help-seeking behavior, and one of the non-invariant paths was the correlation between self-reliance and emotional control, meaning two of the non-invariant paths involved predictor variables in the model. Specifically, these were the paths from self-reliance to self-stigma, $\Delta SB \chi^2(1) = 5.39, p = .02$, and from self-compassion to self-stigma, $\Delta SB \chi^2(1) = 6.92, p < .01$. The path from self-reliance to self-stigma was more positive for students ($\beta = .30, p < .001$) than for community adults ($\beta = .19, p < .001$); and the path from self-compassion to self-stigma was more negative for students ($\beta = -.15, p < .001$) than for community adults ($\beta = -.03, p > .05$).

The other path differences were found in paths from control variables or for correlations between latent factors in the models. These included significant differences for the path from

previous help-seeking behavior to intentions, $\Delta SB \chi^2(1) = 5.25, p < .05$; from participant sex to intentions, $\Delta SB \chi^2(1) = 6.06, p < .05$; from distress to help-seeking attitudes, $\Delta SB \chi^2(1) = 6.13, p < .05$; from participant sex to help-seeking attitudes, $\Delta SB \chi^2(1) = 8.68, p < .01$; from participant sex to disclosure risks, $\Delta SB \chi^2(1) = 8.49, p < .01$; and for the correlation between emotional control and self-reliance, $\Delta SB \chi^2(1) = 3.97, p < .05$. Specifically, the path from previous help-seeking behavior to intentions was significantly more negative for the community sample ($\beta = -.10, p < .01$) than for the student sample ($\beta = -.02, p = .56$); the path from participant sex to intentions was significantly more negative for the community sample ($\beta = -.10, p < .001$) than for the student sample ($\beta = -.02, p = .46$); the path from distress to help-seeking attitudes was significantly larger in the student sample ($\beta = .12, p < .001$) than for the community sample ($\beta = .04, p = .25$); the path from participant sex to help-seeking attitudes was significantly larger in the student sample ($\beta = .12, p < .001$) than in the community sample ($\beta = .01, p = .66$); the path from participant sex to disclosure risks was significantly larger in the student sample ($\beta = .14, p < .001$) than the community sample ($\beta = -.00, p = .90$); and the correlation between emotional control and self-reliance was significantly stronger in the student sample ($\beta = .57, p < .001$) than the community sample ($\beta = .54, p < .001$).

Model 4: Mediation Model with Interaction Terms

A series of models were then conducted to examine whether self-compassion moderated the effects of self-reliance and emotional control on self-stigma and disclosure risks. Two interaction terms were added to the fully recursive model for both the student and the Mturk samples. For the student and Mturk samples, respectively, a model was first tested that included everyone together, and then separate models were examined for men and women specifically. In each of the six models tested, the interaction terms were non-significant. Non-standardized beta

weights are presented below, as Mplus does not provide standardized beta weights in the output for latent variable interaction terms. The path from the self-reliance x self-compassion interaction term to self-stigma was non-significant in the general student sample ($B = -.10, p = .27$), and general community sample ($B = .08, p = .30$), as well as for the student men ($B = -.15, p = .25$), student women ($B = -.04, p = .75$), community men ($B = .35, p = .06$), and community women ($B = .04, p = .68$). The path from the self-reliance x self-compassion interaction term to disclosure risks was non-significant in the general student sample ($B = -.03, p = .81$), and general community sample ($B = -.14, p = .18$), as well as for the student men ($B = -.00, p = .99$), student women ($B = -.06, p = .71$), community men ($B = .17, p = .47$), and community women ($B = -.18, p = .14$). The path from the emotional control x self-compassion interaction term to self-stigma was non-significant in the general student sample ($B = -.08, p = .39$), and general community sample ($B = -.05, p = .56$), as well as for the student men ($B = .04, p = .78$), student women ($B = -.15, p = .20$), community men ($B = -.02, p = .91$), and community women ($B = -.08, p = .37$). Finally, the path from the emotional control x self-compassion interaction term to disclosure risks was non-significant in the general student sample ($B = .11, p = .32$), and general community sample ($B = .07, p = .50$), as well as for the student men ($B = .13, p = .56$), student women ($B = .09, p = .51$), community men ($B = -.21, p = .49$), and community women ($B = .08, p = .47$). Because of these non-significant findings, sex differences in the strengths of the interaction paths were not examined.

Model 5: Behavioral Outcome Model

Finally, a fully recursive model was examined which included the two behavioral measures (i.e., whether or not participants clicked on a link to receive information about mental health and whether or not participants clicked on a link to receive information about how to seek

out psychological help) as outcome variables, instead of help-seeking intentions. The WLSMV estimator was used in Mplus due to the categorical nature of the outcomes. The WLSMV estimator also accounts for non-normality. Again, distress, participant sex, and previous help-seeking behavior were included as control variables in the model. The WLSMV estimator provides chi-square, CFI, TLI, and RMSEA fit statistics, similar to the MLR estimator. However, the WLSMV estimator does not provide a SRMR index, instead providing a WRMR index. Typically, WRMR values below 1.0 indicate a good fit (Yu, 2002). The model for the general student sample showed a poor fit to the data, $SB \chi^2 (232) = 1,063.12, p < .001$; CFI = .85; TLI = .81; RMSEA = .06, 90% CI [.06, .07]; WRMR = 1.39. The model was also examined using the community sample, and again showed poor fit to the data, $SB \chi^2 (232) = 978.54, p < .001$; CFI = .85; TLI = .81; RMSEA = .06, 90% CI [.06, .06]; WRMR = 1.36.

While the WLSMV is believed to be robust to non-normality, one possible explanation for the poor fitting models was the relatively low number of individuals who indicated that they would like to access online information about mental health or how to seek out psychological help. Specifically, only 17.8% and 10.6% of those in the student sample accessed online information about mental health and how to seek help, respectively. In the community sample, 20.3% sought out online mental health information while only 8.3% sought out information on how to seek psychological help. Another possible explanation for the poor model fit was that latent variable model was overly complex to accurately estimate given the relatively low number of individuals that elected to seek out online information. As such, an exploratory model was examined that combined the two samples, and also combined the two behavioral outcome measures (i.e., 0 = no information sought, 1 = any information sought). Again, the model

showed a poor fit to the data, $SB \chi^2 (219) = 1,788.83, p < .001$; CFI = .83; TLI = .79; RMSEA = .06, 90% CI [.06, .06]; WRMR = 1.93

Due to the poor fitting latent variable models, another exploratory model was examined using standardized manifest variables. The Lannin and colleagues (2016) study, which used similar behavioral outcomes, also used standardized manifest variables for their model. First, the model was conducted for the student sample. The fully recursive model was a good fit to the data, $SB \chi^2 (0) = 0.00, p = .00$; CFI = 1.00; TLI = 1.00; RMSEA = .00, 90% CI [.00, .00]; WRMR = .001. A mediation model was also examined in which help-seeking attitudes fully mediated the links between the predictor variables and the behavioral outcome measures, which also showed a good fit to the data, $SB \chi^2 (10) = 11.814, p = .30$; CFI = 1.00; TLI = 1.00; RMSEA = .01, 90% CI [.00, .04]; WRMR = .47. As this model showed a non-significant chi-square, and thus was not significantly different from the baseline, fully recursive model, this model is presented in Figure 7, as it was the more parsimonious model. The figure displays the values of the path coefficients, which represent an increase or a decrease in the z-score, which corresponds with the probability of seeking out mental health or help-seeking information (Lannin et al., 2016). Lannin and colleagues noted that the coefficients represent a change in z-score for an individual who scores one standard deviation above the mean on the predictor variable (in this case, help-seeking attitudes), compared to someone at the mean of the predictor variable.

Next, the model was conducted for the community sample. The fully recursive model was a good fit to the data, $SB \chi^2 (0) = 0.00, p = .00$; CFI = 1.00; TLI = 1.00; RMSEA = .00, 90% CI [.00, .00]; WRMR = .001. A mediation model was also examined in which help-seeking attitudes fully mediated the links between the predictor variables and the behavioral outcome measures, which also showed a good fit to the data, $SB \chi^2 (10) = 18.68, p < .05$; CFI = .97; TLI

= .98; RMSEA = .03, 90% CI [.01, .05]; WRMR = .61. As this model showed a significant chi-square, and thus was significantly different from the baseline, fully recursive model, the fully recursive model is presented in Figure 8.

Indirect effects were also examined using the same bootstrapping procedure (n = 1,000 samples) as described above, to test the hypothesized links between self-reliance and emotional control, and mental health and help-seeking information seeking. For the student sample, results indicated that the total indirect effects from self-reliance (B = -.04; 95% CI [-.08, -.02]) and emotional control (B = -.04; 95% CI [-.07, -.02]), to mental health information seeking (i.e., clicking on a link to online information about mental health), were significant. Specifically, self-reliance was associated with less mental health information seeking through self-stigma and help-seeking attitudes (B = -.03; 95% CI [-.06, -.01]). In turn, emotional control was associated with less mental health information seeking through help-seeking attitudes (B = -.02; 95% CI [-.05, -.01]), and through self-stigma and attitudes (B = -.01; 95% CI [-.03, -.00]).

The total indirect effects from self-reliance (B = -.05; 95% CI [-.07, -.02]) and emotional control (B = -.04; 95% CI [-.07, -.01]) to help-seeking information seeking (i.e., clicking on a link to online information about how to seek out psychological help), were also significant in the student sample. Specifically, self-reliance was associated with less help-seeking information seeking through self-stigma and help-seeking attitudes (B = -.03; 95% CI [-.06, -.01]). In turn, emotional control was associated with less help-seeking information seeking through help-seeking attitudes (B = -.02; 95% CI [-.05, -.01]), as well as through self-stigma and attitudes (B = -.01; 95% CI [-.03, -.00]).

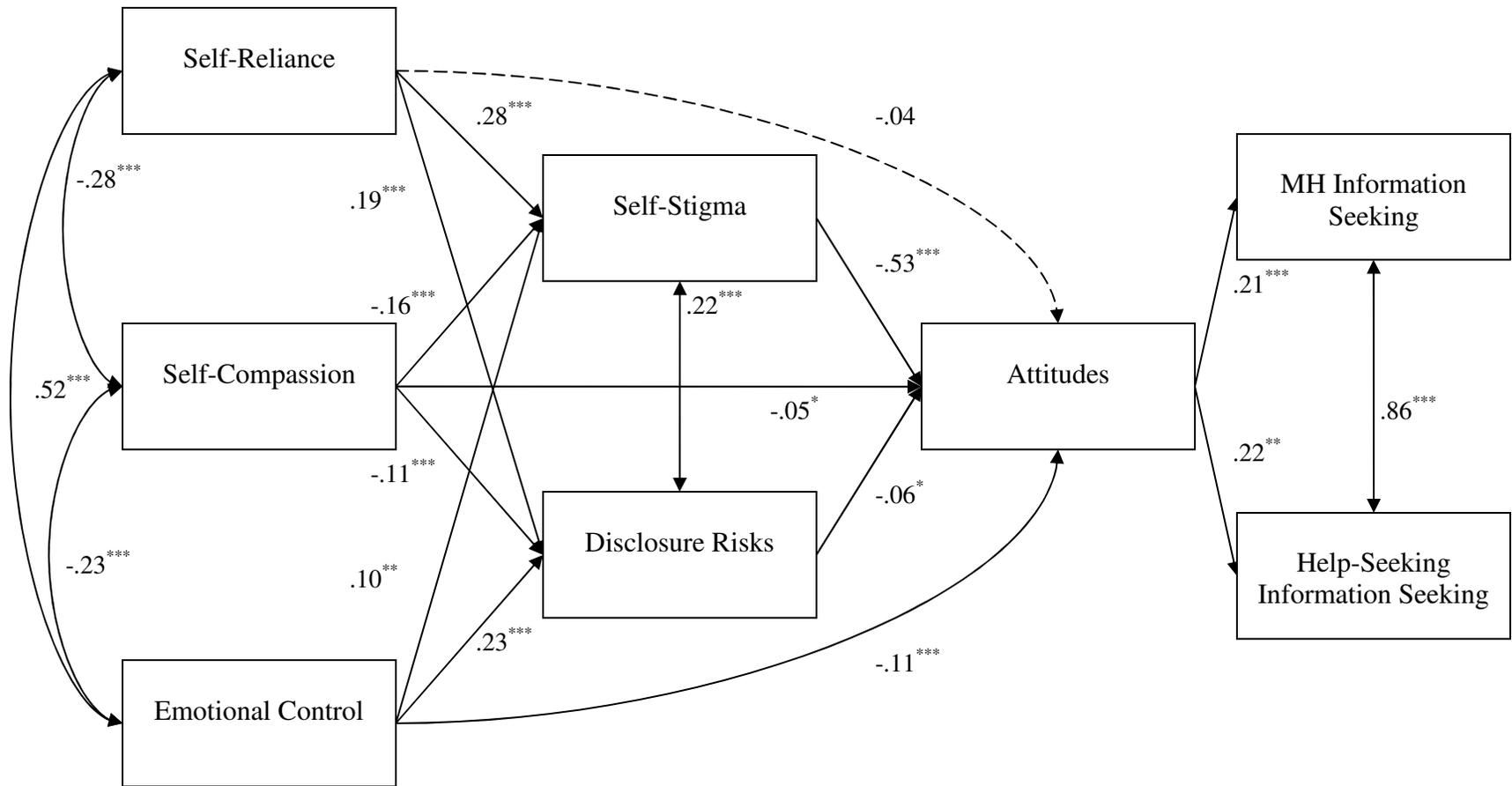


Figure 7. Behavioral outcome model for the student sample

Note. Distress, participant sex, and previous help seeking are included as controls, and not included in figure for ease of presentation.

* $p < .05$ ** $p < .01$ *** $p < .001$

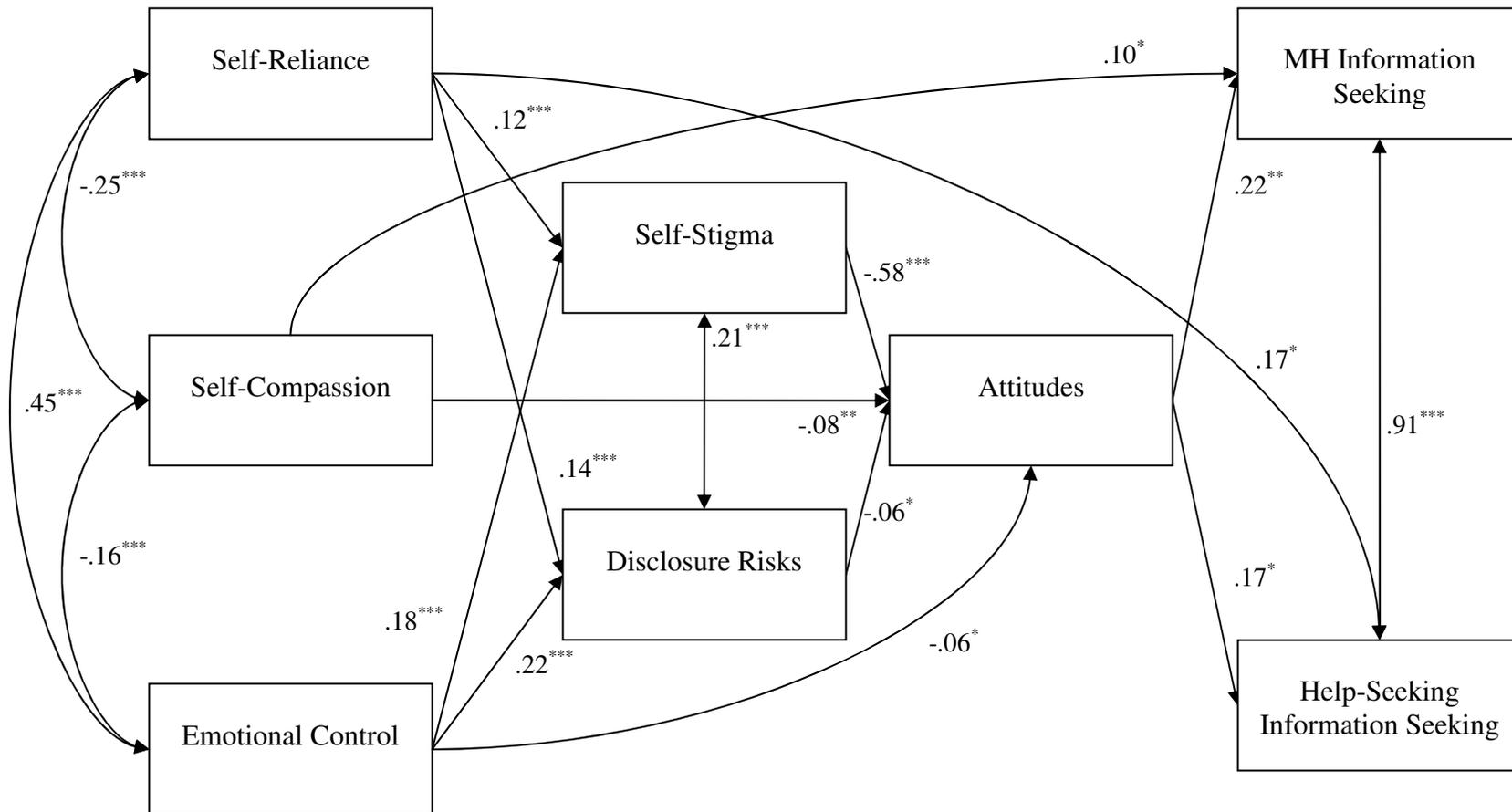


Figure 8. Behavioral outcome model for the community sample

Note. For ease of presentation, non-significant paths are not presented in the figure, despite all directional paths being present in the model. Distress, participant sex, and previous help seeking are included as controls as well, though also not pictured.

* $p < .05$ ** $p < .01$ *** $p < .001$

Interestingly, in the community sample, results indicated that the total indirect effects from self-reliance ($B = -.01$; 95% CI $[-.04, .01]$) and emotional control ($B = -.03$; 95% CI $[-.06, .00]$), to mental health information seeking were non-significant. However, there were significant specific indirect effects. In particular, self-reliance was associated with less mental health information seeking through self-stigma and help-seeking attitudes ($B = -.02$; 95% CI $[-.03, -.01]$), and emotional control was associated with less mental health information seeking through help-seeking attitudes ($B = -.01$; 95% CI $[-.04, -.00]$), self-stigma and help-seeking attitudes ($B = -.02$; 95% CI $[-.05, -.01]$), and through disclosure risks and help-seeking attitudes ($B = -.00$; 95% CI $[-.01, -.00]$).

Results indicated that the total indirect effects from self-reliance ($B = .01$; 95% CI $[-.03, .03]$) and emotional control ($B = -.01$; 95% CI $[-.05, .03]$), to help-seeking information seeking were also non-significant in the community sample. However, there were significant specific indirect effects. Self-reliance was associated with less help-seeking information seeking through self-stigma and help-seeking attitudes ($B = -.01$; 95% CI $[-.03, -.00]$), and emotional control was associated with less mental health information seeking through self-stigma and help-seeking attitudes ($B = -.02$; 95% CI $[-.04, -.00]$).

Next, to test the hypothesis that there would be sex differences in the strengths of the associations between masculine norms and the behavioral help-seeking outcomes, a series of multiple group comparison tests were conducted. For the student sample, sex differences were examined for the paths between help-seeking attitudes and the behavioral outcomes, as these were the only two new paths in this model, and results from the previous latent variable structural models showed that there were no sex differences in the model leading up to the help-seeking attitudes variable. A scaled chi-square difference test indicated that, compared to a

freely estimated model, there was not a significant difference between the model in which the path from attitudes to mental health information was constrained across participant sex, nor for the model in which the path from attitudes to help-seeking information was constrained.

For the community sample, six paths were tested (i.e., the paths from attitudes, self-reliance, and emotional control to both of the behavioral outcomes), the two paths from attitudes to the behavioral outcomes, as above, as well as four direct paths between self-reliance, emotional control, and the two behavioral outcomes as attitudes did not fully mediate the association between masculine norms and the behavioral outcomes. Only the path from attitudes to mental health information showed a significant difference, $\Delta SB \chi^2(1) = 5.04, p < .05$, with men reporting a stronger association between attitudes and mental health information seeking ($B = .38, p < .01$) than women ($B = .18, p < .05$).

CHAPTER 5

DISCUSSION

The primary aim of this study was to examine sex differences in how adherence to masculine gender role norms relates to help-seeking barriers (i.e., self-stigma, disclosure risks, help-seeking attitudes), and behavioral help-seeking outcomes (i.e., help-seeking intentions, deciding whether or not to access online information about mental health or how to seek psychological help). This examination was based on tenets of Social Identity Theory (SIT), which suggests that individuals' beliefs and behaviors are more influenced by their in-group norms than by out-group norms. This implies that the association between masculine norms (i.e., expectations for how *men* 'should' think and behave) and related constructs should be stronger for men than for women. Indeed, much of the literature on masculinity and help-seeking patterns has focused almost exclusively on male samples, making the implicit assumption that women are not impacted by these same norms, or that the impact is negligible. This has resulted in a general paucity of research examining masculine norms in female samples, with one recent meta analysis noting that there were no known studies examining masculinity and psychological help-seeking patterns that included women in their sample (Wong et al., 2017). Some evidence suggests that women's help-seeking beliefs might also be negatively related to conformity to masculine norms (Heath et al., 2016), contradicting tenets of Social Identity Theory, though the study failed to directly compare these relationships between men and women. As such, this study examined sex differences in the relationships between self-reliance and emotional control (two masculine norms related to help-seeking beliefs), help-seeking barriers (i.e., self-stigma and disclosure risks), and help-seeking attitudes and intentions, across a model of help-seeking beliefs used in previous research (i.e., Heath et al., 2017; Pederson & Vogel, 2007). In addition, self-

compassion has been proposed as one mechanism that may buffer the effect of masculine norm adherence on help-seeking beliefs for men (Heath et al., 2017), but it is unclear if it would have the same effect for women. As such, this study also sought to test the moderating effect of self-compassion for women as well. Finally, to further generalize findings, this study used both student and community samples, and also assessed behavioral outcome measures.

Masculinity and Help-Seeking Beliefs

In general, results indicated that higher adherence to the masculine norms of self-reliance and emotional control predicted higher levels of help-seeking self-stigma and disclosure risks, more negative attitudes towards seeking help, lower intentions to seek psychological help, and less likelihood to access online information about mental health and seeking psychological services. These results are generally consistent with the extant literature, which suggest that Masculine norms, such as self-reliance and emotional control, are incongruent with the process of seeking psychological help (Addis & Mahalik, 2003). Specifically, self-reliance and emotional control seemingly contradict the processes of seeking help from, and discussing emotions with, another person during the counseling process. As such, it was not surprising that those who prefer to do things on their own (i.e., self-reliance) or those who do not like to openly acknowledge their emotional experiences (i.e., emotional control), would associate more stigma and risk with seeking out help, and generally view help-seeking less favorably. This is congruent with meta-analyses that have found that self-reliance and emotional control predict more reluctance to seek out psychological help (e.g., Wong et al., 2017).

Importantly, the results from this study indicate that the links between conformity to masculine norms and help-seeking outcomes were not specific to men, and that the strengths of the associations between self-reliance, emotional control, and help-seeking outcomes are not

impacted by whether or not an individual is a man or a woman. This contradicts expectations based on the tenets of SIT, which posits that individuals' beliefs and behaviors are more influenced by their in-group norms than by out-group norms. In the student sample, results of the multiple group comparison analysis suggested that there were no significant path differences between men and women across the entirety of the model. Like men, women in the student sample reported significant, positive, associations between self-reliance and emotional control, and disclosure risks, and between self-reliance and self-stigma. In the community sample, women reported significant, positive, associations between self-reliance and emotional control, and self-stigma and disclosure risks. In addition, adherence to these two norms also resulted in more negative behavioral outcomes (i.e., lower levels of accessing online information about mental health and help-seeking) for both men and women across each sample.

In theory, men should have displayed stronger, more negative associations between self-reliance and emotional control and help-seeking outcomes than women, as seeking psychological help should be more tied to their identity as a man (e.g., “seeking help will make me less of a man”). Instead, self-reliance and emotional control were important factors for both men and women. More specifically, adherence to ‘in-group’ normative behaviors did not impact those in the ‘in-group’ (i.e., men) more than those in the ‘out-group’ (i.e., women). One possibility for these findings is that sex identity was not the most salient identity driving men’s and women’s responses to the items about seeking help, and other aspects of their identities may have been more important. For example, identity tied to presenting as a mentally healthy individual may have been more salient in this context. Previous research supports this idea, suggesting that ‘psychological help-seeker’ may be an identity that is avoided by many individuals (Hammer & Vogel, 2017). As such, though there might be other situations in which SIT applies to masculine

identity and related behavioral outcomes (e.g., drinking behavior, drive for muscularity; Iwamoto et al., 2011; Hunt, Gonsalkorale, & Murray, 2013), seeking psychological help may not be one of those situations. One way to further test this is to enhance the salience of masculine identity in the context of psychological help seeking. Future research might benefit from priming masculine identity to see if that elicits the hypothesized sex differences in the relationships between masculine norms and help-seeking outcomes. Previous studies have primed masculinity by asking men to write brief statements about what it means to be a man (Wong et al., 2015), or by giving male participants false feedback about how prototypically masculine they were (Hunt et al., 2013). Though these studies utilized all male samples and procedures may need to be adapted to apply to both men and women, priming studies may further enhance the fields' understanding of how masculinity impacts help-seeking outcomes for men and women.

Additionally, while these results were not expected based on the tenets of SIT, they may be in line with other theories related to gender and behavior. For example, social constructivist theory views gender identity as something that is constructed by each individual, rather than as a set of proscribed attributes (Courtenay, 2000). Specifically, Gerson and Peiss (1985) noted that gender identity is not comprised of static categories (e.g., self-reliance, emotional control), but rather is constructed by each individual's view of their actions. As such, while self-reliance and emotional control may be associated with more negative help-seeking outcomes for everyone, men and women may explain the connection between these factors differently. For example, self-reliant men might avoid seeking help because they think it will make them look feminine, while self-reliant women might avoid seeking help because they want to solve their problems on their own. Future research might benefit from utilizing qualitative designs to better understand gender differences in explanations for help-seeking avoidance.

These findings have important implications for future research examining masculinity and psychological help-seeking patterns. Primarily, these findings suggest that women should be included in future research on masculinity and help seeking, as the impact of masculine gender role norms is not limited to just men. This also calls into question the explanation of many previous researchers that conformity to masculine gender role norms is responsible for sex differences in rates of psychological help-seeking behavior (e.g., Addis & Mahalik, 2003; Smith et al., 2008; Wong et al., 2017), as adherence to these norms equally predicted help-seeking outcomes across both men and women. As such, it appears likely that there are other contextual factors that influence any differences in help-seeking rates between men and women. For example, factors such as differences between how men and women are referred to seek psychological services (Vogel et al., 2014), the amount of social support women and men receive (Flaherty & Richman, 1989), and the ability to recognize mental health concerns (i.e., mental health literacy; Cotton, Wright, Harris, Jorm, & McGorry, 2006), are all factors that could impact sex differences in help-seeking rates. Future research could examine these factors across both men and women, in addition to assessing masculine norms, to identify if they contribute to any sex differences in help-seeking outcomes.

More Nuanced than Originally Thought

Though findings generally indicated that self-reliance and emotional control were linked to more negative help-seeking outcomes, there were more nuanced findings that require discussion. For example, in the student sample, both self-reliance and emotional control predicted higher levels of disclosure risks, though only self-reliance predicted higher levels of self-stigma. This was not the case in the community sample, where higher levels of self-reliance and emotional control predicted higher levels of both self-stigma and disclosure risks. These

findings differed slightly from previous research examining similar constructs (Heath et al., 2017; Pederson & Vogel, 2007). First, the Heath and colleagues (2017) study found that emotional control, and not self-reliance, directly predicted self-stigma, which was opposite in this study. One possibility for this difference is that the current study included help-seeking attitudes as an outcome variable, which was not included by Heath and colleagues (2017). Self-stigma and help-seeking attitudes are highly related to one another (as evidenced both by previous research and the high beta coefficients from the current results), indicating that, in the absence of help-seeking attitudes, stigma may act as a proxy variable for attitudes. These findings suggest that, for students, emotional control may be more important for predicting help-seeking attitudes rather than self-stigma.

Second, the current results indicated that self-reliance significantly predicted higher levels of disclosure risks, which was not found in previous research examining this model (Heath et al., 2017). This is not wholly surprising, as other research has found that general adherence to masculine norms is related to higher disclosure risks (e.g., Pederson & Vogel, 2007), and that, at face value, it is likely that those who are more self-reliant would perceive more risks with disclosing information to a counselor (which may be seen as an act of relying on someone else). Additionally, a closer examination of the Heath and colleagues (2017) study shows that the zero-order correlation between the two constructs was significant ($r = .36$), and that its association was only lost after controlling for emotional control. This zero order correlation is roughly equivalent to those in this study (r 's ranging from .29 to .38), and as such, one possibility is that the larger sample in this study yielded more statistical power to detect unique effects.

Another nuanced finding from this research was that one path in the model was significantly different between the student and community models. Specifically, students

reported a stronger link between self-reliance and self-stigma than those in the community sample. This seems to suggest that students who are self-reliant are more likely to anticipate self-stigma for seeking out help than community adults who are self-reliant. Previous research has not directly tested the strength of this association across student and community samples, though this finding is consistent with previous literature suggesting that masculinity impacts behavior differently as men age (Courtenay, 2000). For example, Courtenay (2000) notes that, “although men may endorse similar masculine ideals, different men may enact these ideals in different ways” (p. 1390), and continues by noting that age may be one factor that leads to differential enactment. Though Courtenay’s analysis was specific to men, it illustrates the idea that the association between masculinity and related outcomes will shift and change as a result of other factors. It’s possible that as individuals get older, regardless of their level of self-reliance, they are less prone to experience shame when seeking out help due to more positive experiences of receiving help from others.

Self-reliance and emotional control also showed a different pattern of associations with the behavioral outcome measures across the student and community samples. Specifically, while self-reliance and emotional control significantly predicted lower levels of the behavioral outcomes through self-stigma and help-seeking attitudes across both samples, emotional control predicted lower levels of mental health information seeking through disclosure risks and help-seeking attitudes in the community sample. This suggests that, while self-stigma and help-seeking attitudes were the most important mediating factors overall, disclosure risks still had some importance for the community adults. Furthermore, men reported a stronger relationship between help-seeking attitudes and mental health information seeking than women in the community sample, suggesting that community men’s attitudes about seeking help are more tied

to their initial decision to seek out online information about mental health than community women.

Overall, these nuanced findings highlight the importance of assessing individual masculine norms when examining masculinity and psychological help seeking outcomes. This has also been noted in a recent meta-analysis by Wong and colleagues (2017), who found evidence that many masculine norms have some unique association with psychological help-seeking beliefs and behaviors. These include the norms of winning, emotional control, violence, playboy, self-reliance, power over women, and disdain for homosexuals/heterosexual self-presentation. Future research could build off of this study by examining additional masculine norms.

Though the meta-analysis by Wong and colleagues (2017) was an important first step in identifying the relative strength of the association between different masculine norms and psychological help-seeking beliefs, the authors collapsed all psychological help-seeking constructs (e.g., stigma, attitudes, intentions) into one general outcome variable. This was necessary to conduct the meta-analysis, but the results of this study suggest that collapsing these outcomes may impact the ability of both researchers and clinicians to see the nuanced relationships between masculine norms and help-seeking outcomes. Specifically, both self-reliance and emotional control were indirectly related to more negative help-seeking intentions in the student sample, though only emotional control was indirectly relate to more negative help-seeking intentions in the community sample. This seems to suggest that, for community adults, emotional control is a more salient predictor of someone's intent to seek out psychological services than whether or not someone values self-reliance. These nuanced findings warrant the

inclusion of both self-stigma and disclosure risks in future research, as they both played some mediating role in the models.

Further illustrating the need for future research to examine specific masculine norms and multiple mediating variables, was the finding that a number of direct paths were significant in the model (i.e., the model was not fully mediated by the hypothesized mediating factors).

Specifically, results indicated that emotional control had a direct, inverse, association with help-seeking attitudes, beyond its indirect association through help-seeking stigma and disclosure risks, in both samples. Interestingly, self-reliance did not have a direct association with help-seeking attitudes in either sample. The partial mediation results support previous literature that also found that self-stigma and disclosure risks partially mediated the relationship between masculine norms and help-seeking attitudes and intentions (i.e., Pederson & Vogel, 2007; Vogel et al., 2011). As such, though the results of this study did not support a fully mediated model (as was hypothesized), they are somewhat consistent with previous findings. Taken as a whole, the association between masculine norms and help-seeking outcomes is nuanced, and varies according to the individual masculine norm and mediator being examined.

Self-Compassion, Masculinity, and Help-Seeking Beliefs

Another goal of this study was to examine self-compassion in the context of masculinity and help-seeking beliefs. Previous research suggests that self-compassion is directly linked to lower levels of self-stigma (Heath et al., 2017; 2018; Wasylkiw & Clairo, 2018) and higher levels of help-seeking attitudes (Wasylkiw & Clairo, 2018), and also moderates the relationship between emotional control and disclosure risks for men (Heath et al., 2017). However, previous research did not examine differences between these links between men and women, and across student and community samples. Results from this study partially supported previous research,

and also shed new light on the role of self-compassion in the context of masculinity and psychological help-seeking outcomes.

In the student sample, self-compassion was directly related to less self-stigma, lower disclosure risks, and more intent to seek psychological help, consistent with hypotheses. In the community sample, self-compassion significantly predicted more intent to seek psychological help for both men and women (also consistent with hypotheses), but was not related to self-stigma or disclosure risks. These results are surprising, in that they suggest that self-compassion is linked to lower help-seeking barriers in students but not community members. Previous research has only examined these relationships with students, and thus, these findings suggest that community adults might not experience similar benefits from self-compassion as students (i.e., reduced barriers to seeking help). One possibility is that other factors become more important predictors of help-seeking barriers than self-compassion as individuals' age. For example, factors like the amount of support from one's social network (Rickwood & Braithwaite, 1994; Vogel & Wei, 2005), or whether one has access to mental health services (Eisenberg, Golberstein, & Gollust, 2007), may take on more importance over time, making self-compassion less relevant. This latter explanation may be especially true, as structural barriers to seeking help have been noted to detrimentally impact help-seeking rates (Sareen et al., 2007), though appear to be more prevalent for adults. Specifically, the majority of students have access to free or reduced price counseling through campus resources (Eisenberg et al., 2007), and as such, structural barriers (i.e., access to services) may not predict whether or not they seek out psychological services (Gulliver, Griffiths, & Christensen, 2010) as they might for adults. In turn, individual differences in factors like self-compassion may become more salient to help-

seeking outcomes for students. Future research might benefit from including additional factors that might account for these differences, like structural barriers (e.g., access to services).

Despite these differences, the direct link between self-compassion and higher levels of help-seeking intent across both samples indicates that self-compassion is still a potentially useful tool to encourage individuals to seek psychological services. Ultimately, as intent to seek help is considered a more proximal factor impacting actual help-seeking behavior than barriers like stigma, disclosure risks, or help-seeking attitudes (e.g., Vogel et al., 2007), this finding may be the most compelling argument for continuing to examine the potential impact of self-compassion on psychological help-seeking behavior. Individuals who have higher levels of self-compassion feel less defensiveness (Gilbert, 2005) and self-blame (Terry & Leary, 2011), and thus, may report higher intent to seek out services as they feel less at fault for their concerns. Previous studies have found that self-compassionate individuals are more likely to engage in health related behavior (Sirois et al., 2015), explaining that self-compassion encourages positive health behavior by helping people maintain positive emotions necessary to motivate more adaptive behavior. Other researchers suggest that self-compassion may play an important role in motivating self-regulatory behavior (Terry & Lear, 2011), which might also result in higher intent to seek psychological services. Specifically, those who are self-compassionate might view counseling as an important step towards self-regulation. This has not been directly tested, however, and future research is needed to further clarify this possibility.

As previously noted, there were some self-compassion results that were not consistent with hypotheses. First, self-compassion was inversely related to help-seeking attitudes in both the student and community samples. The inverse relationship with help-seeking attitudes was surprising, given that previous research has found that self-compassion is positively related to

help-seeking attitudes (Wasylikiw & Clair, 2018). One possibility for this difference is that self-compassion was assessed differently in this study than it had been in previous research examining self-compassion and help-seeking outcomes. Specifically, previous research has utilized a total score of the self-compassion scale (SCS), as had been recommended by Neff (2003). However, this study assessed self-compassion using only the positively worded items in the measure, as some note that this is a more pure assessment of self-compassion, and that the negatively worded items in the scale represent a separate, 'self-coldness' construct (Brenner et al., 2017). As such, one possible reason why previous research found a positive link between self-compassion and help-seeking attitudes was that self-compassion was confounded with self-coldness. It's possible that self-coldness has a strong, negative, association with help-seeking attitudes, which would lead the total score of the SCS (which reverse scored the negatively worded items) to display a positive association with attitudes. Future research is needed to assess the differences in the association between self-compassion, self-coldness, and help-seeking attitudes to further clarify this possibility.

Importantly, there were no differences between men and women across either of the two samples regarding self-compassion and help-seeking outcomes. Previous research had found that self-compassion was associated with lower levels of self-stigma for both men and women (Heath et al., 2018), though studies examining self-compassion and other help-seeking outcome variables had used all-male samples. As such, it was less clear how self-compassion would predict outcomes such as disclosure risks, help-seeking attitudes, and help-seeking intentions for women. These results indicate that women in the student sample who reported higher self-compassion also reported lower self-stigma and disclosure risks, though this was not the case for women in the community sample. However, in both samples, self-compassion predicted more

negative help-seeking attitudes and higher intent to seek out psychological services. As will be discussed in more detail in the next paragraph, it's possible that removing the self-coldness items from the measure of self-compassion could have led to these seemingly contradictory results, and additional research is needed using both the self-compassion and self-coldness scales to further explore this possibility. However, in general, these results indicate that self-compassion appears to promote fewer help-seeking barriers, and increased intent to seek psychological services for women, as it does for men.

Beyond direct relationships between self-compassion and help-seeking outcomes, this study also examined self-compassion as a potential moderating variable for the links between self-reliance and emotional control, and self-stigma and disclosure risks. Results indicated that self-compassion was not a significant moderator for any of these relationships, across any of the general (i.e., student and community), and specific (i.e., men and women) samples. This is surprising, as previous research found that self-compassion moderated the link between a general conformity to masculine norms variable and self-stigma and disclosure risks, and between the specific masculine norm of emotional control and disclosure risks, in a sample of male students (Heath et al., 2017). As noted above, the confounding of self-compassion and self-coldness in previous research is a possible explanation for these results, as Heath and colleagues (2017) utilized the total score of the SCS. Previous research suggests that self-compassion and self-coldness relate differently to positive and negative outcomes (Brenner et al., 2018), and as such, utilizing only the self-compassion subscale (i.e., eliminating the self-coldness items) may have led to different moderation results. Self-coldness has been found to relate more strongly to negative outcomes than self-compassion (Brenner et al., 2018), and as such, might actually be the construct that moderates the relationship between masculinity and help-seeking barriers. To

examine this possibility, future research is needed that examines both self-compassion and self-coldness as moderators.

Limitations and Future Directions

There are several important limitations to this study. First, both the student and community samples were generally white, heterosexual, and had a larger proportion of women than men. These demographic characteristics could impact the results, and future research is needed to help identify whether these findings generalize to other demographic groups. For example, researchers have noted that masculinity does not exist within a vacuum and that other identity factors intersect with masculinity to impact the lives of individuals (i.e., multicultural masculinity; Wester, 2008). Factors like age, sexual orientation, race/ethnicity, and able-bodiedness, could influence how masculinity is demonstrated on a day to day basis (Courtenay, 2000). In addition, some scholars have argued that the masculine norms examined in this study are based upon hegemonic masculinity, which is inherently more representative of groups of men that traditionally hold more social privilege (e.g., white, heterosexual, men; Mahalik et al., 2003). Future research could utilize additional, or alternative, measures of masculinity that are more tailored to specific cultural groups, like the Machismo and Caballerismo Scale which examine Latino masculinity (Arciniega, Anderson, Tovar-Blank, & Tracey, 2008).

Second, this study utilized convenience samples, which may not be representative of the general population. For example, recruitment materials specified that the study was examining gender and help-seeking beliefs, which may have influenced the decision for some individuals to participate. This might be reflected in the fact that previous help-seeking rates were relatively high across both samples. Specifically, nearly 39% of participants in the student sample and nearly 49% of participants in the community sample had previously sought help from a

professional (e.g., counselor, therapist). It is possible that those who had previously sought out mental health treatment would be more willing to respond to a survey about help-seeking beliefs. Thus, while previous help-seeking behavior was controlled for in the analyses, it does not fully eliminate this potential bias. In addition, research might also examine whether the timing of seeking help influences results. Specifically, the item in this study asked if individuals had ever sought help in the past, but did not specify a time range. However, individuals whose parents had them see a therapist as a child might not be equivalent to those who sought help under their own volition as adults. This needs to be addressed in future studies.

Third, this study examined only two specific masculine norms, self-reliance and emotional control. Though these two norms have been most commonly connected to help-seeking avoidance in theory and empirical research (e.g., Wong et al., 2017), a number of additional masculine norms exist that might also relate to help-seeking patterns in men and women (e.g., heterosexual self-presentation, violence, primacy of work; Mahalik et al., 2003; Parent & Moradi, 2009). In addition, this study only assessed masculine norms, and did not examine feminine gender role norms. This is an area of research that has yet to be pursued in the literature, as there have been fewer theoretical ties between femininity and help-seeking patterns. However, this remains a gap in the literature. Some suggest that women are socialized to be more open to seeking help from others and to be more emotionally expressive (e.g., Kring & Gordon, 1998), which may lead to fewer help-seeking barriers (e.g., lower levels of disclosure risks) or more openness to seeking psychological services. These norms might also account for women's higher rates of psychological service use than men. Future research could address this by including measure of stereotypically feminine norms (e.g., Conformity to Feminine Norms Inventory; Mahalik et al., 2005; Parent & Moradi, 2010) in addition to masculine norms.

Fourth, a large portion of the individuals that expressed interest in completing the study (i.e., clicked on the link directing them to the survey) ended up quitting the survey before completing the full questionnaire. One possibility is that the length of time it took people to complete the survey (approximately 20 minutes) was taxing on participants and led to the high rates of premature dropout. Future research might utilize a shorter survey, or provide higher amounts of compensation for survey completion. In addition, the demographic questions were included at the end of the survey, and as such, it is unclear if there were any demographic factors that predicted premature dropout. Future research might include demographics at the beginning of the survey in order to assess for any patterns of missingness.

Fifth, as previously noted, other factors likely mediate and moderate the relationships between masculine norm adherence and help-seeking outcomes. Though this study assessed two commonly cited mediating factors, self-stigma and disclosure risks (Vogel, Wester, & Larson, 2007), a number of other mediating factors still need to be assessed. This is especially true given that men and women displayed equivalent relationships between masculine norms and the help-seeking outcomes, indicating that other factors are likely responsible for any sex differences in help-seeking rates. These might include factors such as social support (Vogel & Wei, 2007) or mental health/help-seeking literacy (Swami, 2012). In addition, self-compassion was not found to moderate the relationships between masculine norms and help-seeking barriers, as was the case in previous research. Future research is needed to examine the possible moderating effects of other factors, such as self-coldness, as this has been confounded with self-compassion in previous assessments. Also, though this study did examine differences between students and community adults, future research might examine age as a moderating factor, as there were subtle differences in the structural models between the student and community samples.

Finally, future longitudinal research is needed to address a number of limitations of the current studies research design. While this study utilized immediate behavioral outcome measures (i.e., accessing online information about mental health and help seeking), future research is needed to examine the impact of masculinity, help-seeking barriers, and self-compassion, on actual help-seeking behavior. Results also indicated that there were some differences in whether or not certain structural paths were significant between the student and community samples, suggesting that age could influence the relationships between the study variables. Additionally, structural equation modeling is correlational in nature, and thus, causal conclusions cannot be made. Research using a longitudinal design could address each of these concerns.

Conclusion

Despite the noted limitations, this is the first known study to examine sex differences in the relationships between masculine norms and help-seeking outcomes. This is an important addition to the literature, as until this study was conducted, an implicit assumption in the field of men's help-seeking behavior was that men, and not women, were influenced negatively by adherence to masculine norms. This was in line with tenets of Social Identity Theory, which suggested that members of an in-group would be more influenced by their in-group normative beliefs than those in out-groups. Indeed, men's adherence to masculine norms had been a prevailing argument for why men sought out psychological services less frequently than women. The results of this study dispute these arguments, suggesting that masculine norm adherence impacts both men *and* women, and to an equal degree.

Additionally, this study also examined the potential for self-compassion to mitigate the effect of masculine norm adherence on two barriers to seeking help, help-seeking self-stigma and

disclosure risks. Contrary to previous findings, self-compassion did not buffer the effects of masculine norms on help-seeking barriers. This is an important contribution to the nascent body of literature examining self-compassion and help-seeking behavior. Importantly, while self-compassion was not found to moderate the relationships, it did predict lower self-stigma and disclosure risks in the student sample, and higher levels of help-seeking intent in both samples. This suggests that while self-compassion may not mitigate the effects of masculinity on help-seeking variables, it is still a useful tool to encourage individuals to seek out psychological help for their concerns.

Finally, this study's use of a student and community sample, as well as behavioral outcome measures, extends the generalizability of previous research. Specifically, results highlight that, while masculine norm adherence is related to help-seeking outcomes for both men and women in student and community samples, there are some slight differences in the relationships between these norms across students and community adults. In addition, though help-seeking attitudes predicted higher rates of seeking out online information about mental health and how to seek help (consistent with previous research), results suggested that masculine norms did not significantly predict initial decisions to seek out online information. This is a novel contribution to the literature, and suggests that future research is needed to further examine masculine norms and other behavioral outcomes (i.e., actual help-seeking behavior).

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APPENDIX A

POWER ANALYSIS IN R

```
rmsea0 <- 0.05 #null hypothesized RMSEA
rmseaa <- 0.06 #alternative hypothesized RMSEA
d <- 279 #degrees of freedom
alpha <- 0.05 #alpha level
desired <- 0.8 #desired power
```

```
#Code below need not be changed by user
#initialize values
pow <- 0.0
n <- 0
#begin loop for finding initial level of n
while (pow<desired) {
  n <- n+100
  ncp0 <- (n-1)*d*rmsea0^2
  ncpa <- (n-1)*d*rmseaa^2
  #compute power
  if(rmseaa<rmsea0) {
    cval <- qchisq(alpha,d,ncp=ncp0,lower.tail=F)
    pow <- pchisq(cval,d,ncp=ncpa,lower.tail=F)
  }
  else {
    cval <- qchisq(1-alpha,d,ncp=ncp0,lower.tail=F)
    pow <- 1-pchisq(cval,d,ncp=ncpa,lower.tail=F)
  }
}
```

```
#begin loop for interval halving
foo <- -1
newn <- n
interval <- 200
powdiff <- pow - desired
while (powdiff>.001) {
  interval <- interval*.5
  newn <- newn + foo*interval*.5
  ncp0 <- (newn-1)*d*rmsea0^2
  ncpa <- (newn-1)*d*rmseaa^2
  #compute power
  if(rmseaa<rmsea0) {
    cval <- qchisq(alpha,d,ncp=ncp0,lower.tail=F)
    pow <- pchisq(cval,d,ncp=ncpa,lower.tail=F)
  }
  else {
```

```
cval <- qchisq(1-alpha,d,ncp=ncp0,lower.tail=F)
pow <- 1-pchisq(cval,d,ncp=ncpa,lower.tail=F)
}
powdiff <- abs(pow-desired)
if (pow<desired) {
  foo <- 1
}
if (pow>desired) {
  foo <- -1
}
}

minn <- newn
print(minn)
```

APPENDIX B**POWER ANALYSIS IN MPLUS (MONTE CARLO SIMULATION)**

TITLE: Monte Carlo simulation for mediation model explaining 16 percent variance in outcomes

MONTECARLO: NAMES ARE A1-A3 B1-B5 C1-C4
 D1-D3 E1-E4 F1-F3
 G1-G3;

NOBSERVATIONS = 375; !sample size
 NREPS = 10000; !number of reps
 SEED = 53487;
 NGROUPS = 1;

MODEL POPULATION:

Z1 BY A1-A3*.65; !self-compassion
 Z2 BY B1-B5*.65; !emotional control
 Z3 BY C1-C4*.65; !self-reliance
 Z4 BY D1-D3*.65; !self-stigma
 Z5 BY E1-E4*.65; !disclosure risks
 Z6 BY F1-F3*.65; !attitudes
 Z7 BY G1-G3*.65; !intentions

Z1@1.0; ! sets factor variance
 Z2@.84; ! sets residual factor variance
 Z3@.84;
 Z4@.84;
 Z5@.84;
 Z6@.84;
 Z7@.84;

[Z1-Z7@0]; ! sets latent means to 0
 A1-A3*.5775;
 B1-B5*.5775;
 C1-C4*.5775;
 D1-D3*.5775;
 E1-E4*.5775;
 F1-F3*.5775;
 G1-G3*.5775;

Z7 ON Z6*.5; ! sets regressive path estimate
 Z6 ON Z4*-.5;
 Z6 ON Z5*-.25;
 Z4 ON Z1*-.2;

Z4 ON Z2*.25;
 Z4 ON Z3*.25;
 Z5 ON Z1*-.2;
 Z5 ON Z2*.25;
 Z5 ON Z3*.25;
 Z2 WITH Z3*.16;
 Z4 WITH Z5*.22;
 Z7 ON Z5*.00;
 Z7 ON Z4*.00;
 Z7 ON Z3*.00;
 Z7 ON Z2*.00;
 Z7 ON Z1*.00;
 Z6 ON Z3*.00;
 Z6 ON Z2*.00;
 Z6 ON Z1*.00;

[A1-A3@0]; ! sets indicator intercepts to 0
 [B1-B5@0];
 [C1-C4@0];
 [D1-D3@0];
 [E1-E4@0];
 [F1-F3@0];
 [G1-G3@0];

MODEL:

Z1 BY A1-A3*.65;
 Z2 BY B1-B5*.65;
 Z3 BY C1-C4*.65;
 Z4 BY D1-D3*.65;
 Z5 BY E1-E4*.65;
 Z6 BY F1-F3*.65;
 Z7 BY G1-G3*.65;

Z1@1.0;
 Z2@.84;
 Z3@.84;
 Z4@.84;
 Z5@.84;
 Z6@.84;
 Z7@.84;

[Z1-Z7@0];

A1-A3*.5775;
 B1-B5*.5775;

C1-C4*.5775;
 D1-D3*.5775;
 E1-E4*.5775;
 F1-F3*.5775;
 G1-G3*.5775;

Z7 ON Z6*.5; ! sets regressive paths
 Z6 ON Z4*-.5;
 Z6 ON Z5*-.25;
 Z4 ON Z1*-.2;
 Z4 ON Z2*.25;
 Z4 ON Z3*.25;
 Z5 ON Z1*-.2;
 Z5 ON Z2*.25;
 Z5 ON Z3*.25;
 Z2 WITH Z3*.16;
 Z4 WITH Z5*.22;
 Z7 ON Z5*.00;
 Z7 ON Z4*.00;
 Z7 ON Z3*.00;
 Z7 ON Z2*.00;
 Z7 ON Z1*.00;
 Z6 ON Z3*.00;
 Z6 ON Z2*.00;
 Z6 ON Z1*.00;

[A1-A3@0]; ! sets indicator intercepts to 0
 [B1-B5@0];
 [C1-C4@0];
 [D1-D3@0];
 [E1-E4@0];
 [F1-F3@0];
 [G1-G3@0];
 OUTPUT: TECH9;

APPENDIX C**INTENTIONS TO SEEK COUNSELING INVENTORY (ISCI)**

Below is a list of issues people commonly bring to counseling. How likely would you be to seek counseling/therapy if you were experiencing these problems?

1 (very unlikely) to 6 (very likely)

1. Relationship difficulties
2. Concerns about sexuality
3. Depression
4. Conflict with parents
5. Difficulty in sleeping
6. Inferiority feelings
7. Difficulty with friends
8. Self-understanding
9. Loneliness
10. Difficulties dating

APPENDIX D**ATTITUDES TOWARD SEEKING PROFESSIONAL PSYCHOLOGICAL HELP****SCALE – SHORT FORM (ATSPPH-SF)**

Directions: Please read each statement and check the circle corresponding to the scale number that indicates how much you agree or disagree with the statement.

0 = disagree, 1 = probably disagree, 2 = probably agree, 3 = agree

1. If I believed I was having a mental breakdown, my first inclination would be to get professional attention.
2. The idea of talking about problems with a psychologist strikes me as a poor way to get rid of emotional conflicts.
3. If I were experiencing a serious emotional crisis at this point in my life. I would be confident that I could find relief in psychotherapy.
4. There is something admirable in the attitude of a person who is willing to cope with his or her conflicts and fears without resorting to professional help.
5. I would want to get psychological help if I were worried or upset for a long period of time.
6. I might want to have psychological counseling in the future.
7. A person with an emotional problem is not likely to solve it alone; he or she is likely to solve it with professional help.
8. Considering the time and expense involved in psychotherapy, it would have doubtful value for a person like me.
9. A person should work out his or her own problems; getting psychological counseling would be a last resort.
10. Personal and emotional troubles, like many things, tend to work out by themselves.

APPENDIX E

SELF-STIGMA OF SEEKING HELP SCALE (SSOSH)

Directions: People at times find that they face problems that they consider seeking help for. This can bring up reactions about what seeking help would mean. Please use the 5-point scale to rate the degree to which each item describes how you might react in this situation.

1 = Strongly Disagree, 2 = Disagree, 3 = Agree/Disagree Equally, 4 = Agree, 5 = Strongly Agree

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

APPENDIX F

DISCLOSURE EXPECTATIONS SCALE (DES)

INSTRUCTIONS: For the following questions, you are asked to respond using the following scale:

(1) Not at all, (2) Slightly, (3) Somewhat, (4) Moderately, or (5) Very.

1. **How difficult would it be for you to disclose personal information to a counselor?**
2. **How vulnerable would you feel if you disclosed something very personal you had never told anyone before to a counselor?**
3. If you were dealing with an emotional problem, how beneficial for yourself would it be to self-disclose personal information about the problem to a counselor?
4. **How risky would it feel to disclose your hidden feelings to a counselor?**
5. **How worried about what the other person is thinking would you be if you disclosed negative emotions to a counselor?**
6. How helpful would be to self-disclose a personal problem to a counselor?
7. Would you feel better if you disclosed feelings of sadness or anxiety to a counselor?
8. How likely would you get a useful response if you disclosed an emotional problem you were struggling with to a counselor?

Note. Bolded items belong to the Risks subscales used in this study

APPENDIX G

CONFORMITY TO MASCULINE NORMS SCALE – 46 (CMNI-46)

Thinking about your own actions, feelings and beliefs, please indicate how much you personally agree or disagree with each statement by circling SD for "Strongly Disagree", D for "Disagree", A for "Agree," or SA for "Strongly agree" to the left of the statement. There are no right or wrong responses to the statements. You should give the responses that most accurately describe your personal actions, feelings and beliefs. It is best if you respond with your first impression when answering.

[Response scale: Strongly Disagree – Disagree – Agree – Strongly Agree]

1. In general, I will do anything to win
2. If I could, I would frequently change sexual partners
3. I hate asking for help
4. I believe that violence is never justified
5. Being thought of as gay is not a bad thing
6. In general, I do not like risky situations
7. Winning is not my first priority
8. I enjoy taking risks
9. I am disgusted by any kind of violence
10. I ask for help when I need it
11. My work is the most important part of my life
12. I would only have sex if I was in a committed relationship
13. I bring up my feelings when talking to others
14. I would be furious if someone thought I was gay
15. I don't mind losing
16. I take risks
17. It would not bother me at all if someone thought I was gay
18. I never share my feelings
19. Sometimes violent action is necessary
20. In general, I control the women in my life
21. I would feel good if I had many sexual partners
22. It is important for me to win
23. I don't like giving all my attention to work
24. It would be awful if people thought I was gay
25. I like to talk about my feelings
26. I never ask for help
27. More often than not, losing does not bother me
28. I frequently put myself in risky situations
29. Women should be subservient to men
30. I am willing to get into a physical fight if necessary
31. I feel good when work is my first priority
32. I tend to keep my feelings to myself
33. Winning is not important to me

- 34. Violence is almost never justified
- 35. I am happiest when I'm risking danger
- 36. It would be enjoyable to date more than one person at a time
- 37. I would feel uncomfortable if someone thought I was gay
- 38. I am not ashamed to ask for help
- 39. Work comes first
- 40. I tend to share my feelings
- 41. No matter what the situation I would never act violently
- 42. Things tend to be better when men are in charge
- 43. It bothers me when I have to ask for help
- 44. I love it when men are in charge of women
- 45. I hate it when people ask me to talk about my feelings
- 46. I try to avoid being perceived as gay

Self-Reliance Subscale

- 3. I hate asking for help
- 10. I ask for help when I need it
- 26. I never ask for help
- 38. I am not ashamed to ask for help
- 43. It bothers me when I have to ask for help

Emotional Control Subscale

- 13. I bring up my feelings when talking to others
- 18. I never share my feelings
- 25. I like to talk about my feelings
- 32. I tend to keep my feelings to myself
- 40. I tend to share my feelings
- 45. I hate it when people ask me to talk about my feelings

Note. The Self-Reliance and Emotional Control subscales are the only scales being used in this study's analysis.

APPENDIX H

SELF-COMPASSION SCALE (SCS)

Please read each statement carefully before answering. Indicate how often you behave in the stated manner, using the following scale:

Rated from 1 = almost never to 5 = almost always

1. I'm disapproving and judgmental about my own flaws and inadequacies.
2. When I'm feeling down I tend to obsess and fixate on everything that's wrong.
- 3. When things are going badly for me, I see the difficulties as part of life that everyone goes through.**
4. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.
- 5. I try to be loving towards myself when I'm feeling emotional pain.**
6. When I fail at something important to me I become consumed by feelings of inadequacy.
- 7. When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am.**
8. When times are really difficult, I tend to be tough on myself.
- 9. When something upsets me I try to keep my emotions in balance.**
- 10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.**
11. I'm intolerant and impatient towards those aspects of my personality I don't like.
- 12. When I'm going through a very hard time, I give myself the caring and tenderness I need.**
13. When I'm feeling down, I tend to feel like most other people are probably happier than I am.
- 14. When something painful happens I try to take a balanced view of the situation.**
- 15. I try to see my failings as part of the human condition.**
16. When I see aspects of myself that I don't like, I get down on myself.
- 17. When I fail at something important to me I try to keep things in perspective.**
18. When I'm really struggling, I tend to feel like other people must be having an easier time of it.
- 19. I'm kind to myself when I'm experiencing suffering.**
20. When something upsets me I get carried away with my feelings.
21. I can be a bit cold-hearted towards myself when I'm experiencing suffering.
- 22. When I'm feeling down I try to approach my feelings with curiosity and openness.**
- 23. I'm tolerant of my own flaws and inadequacies.**
24. When something painful happens I tend to blow the incident out of proportion.
25. When I fail at something that's important to me, I tend to feel alone in my failure.
- 26. I try to be understanding and patient towards those aspects of my personality I don't like.**

Note. Bolded items belong to the Self-Compassion subscale used in this study's analyses.

APPENDIX I

DEPRESSION ANXIETY STRESS SCALE (DASS)

Please read each statement and select a number 0, 1, 2 or 3 that indicates how much the statement applied to you over the past week. There is no right or wrong answer. Do not spend too much time on any statement.

0 - Did not apply to me at all

1 - Applied to me to some degree, or some of the time

2 - Applied to me to a considerable degree, or a good part of time

3 - Applied to me very much, or most of the time

1. I found it hard to wind down
2. I was aware of dryness of my mouth
3. I couldn't seem to experience any positive feeling at all
4. I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)
5. I found it difficult to work up the initiative to do things
6. I tended to over-react to situations
7. I experienced trembling (e.g., in the hands)
8. I felt that I was using a lot of nervous energy
9. I was worried about situations in which I might panic and make a fool of myself
10. I felt that I had nothing to look forward to
11. I found myself getting agitated
12. I found it difficult to relax
13. I felt down-hearted and blue
14. I was intolerant of anything that kept me from getting on with what I was doing
15. I felt I was close to panic
16. I was unable to become enthusiastic about anything
17. I felt I wasn't worth much as a person
18. I felt that I was rather touchy
19. I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)
20. I felt scared without any good reason
21. I felt that life was meaningless

APPENDIX J**DEMOGRAPHIC ITEMS****-Age:** ____**-Sex:**

- Male
- Female
- Other

-Race:

- African American
- American Indian/Alaskan Native
- Asian American/Asian
- Hispanic/Latino/a
- Native Hawaiian/Pacific Islander
- Multi-racial
- European American/White
- Self-Identify (please specify):

-Sexual Orientation:

- Heterosexual
- Lesbian
- Gay
- Bisexual
- Questioning
- Self-Identify (please specify):

- Years of Education:**-Previous Help Seeking:**

Have you ever sought help for a mental health concern from ...

- a. Internet websites (yes/no)
- b. Friends (yes/no)
- c. Family members (yes/no)
- d. A religious or spiritual advisor (e.g., priest, minister, rabbi) (yes/no)
- e. A family physician (yes/no)

Have you ever sought help from a mental health professional (e.g., psychologist, psychiatrist, social worker, counselor)? If yes, how many months after you first noticed signs of a mental health concern did you seek help from a professional?

- a. No
- b. Yes (number of months):_____