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Reducing barriers to psychotherapy via an online self-affirmation intervention

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Reducing barriers to psychotherapy via an online self-affirmation intervention

by

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

Major: Psychology

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ABSTRACT

This research developed and tested online self-affirmation interventions to reduce psychological barriers associated with seeking help for mental health issues in two studies. There is evidence that reflecting on personal values (values-affirmation) and reflecting on close social relationships (social-affirmation) may both be effective approaches to eliciting self-affirmation—a psychological process that temporarily bolsters self-worth in order to forestall maladaptive, self-protective threat-responses. Study 1 ($N = 384$) experimentally examined the strategies of values-affirmation, social-affirmation, and type of help-seeking information presented to potential help-seekers. This study utilized a $2 \times 2 \times 2$ factorial design with two self-affirmation manipulations (i.e., values-affirmation vs. no-affirmation and social-affirmation vs. no-affirmation), as well as an information manipulation (reassuring help-seeking information vs. standard help-seeking information). It was predicted that values-affirmation, social-affirmation and reassuring help-seeking information would (1) reduce threat-responses associated with reading the help-seeking information, and (2) increase positive help-seeking beliefs. Results indicated that values-affirmation and reassuring information both reduced negative affect and perceived help-seeking information threat, but did not affect time spent reading help-seeking information. Social-affirmation had no statistically significant effects on any dependent variable. No experimental manipulation directly increased positive help-seeking beliefs, but values-affirmation and reassuring information both had beneficial indirect effects on positive help-seeking beliefs, via reductions in threat and self-stigma. No main effects were found two weeks posttest, but a social-affirmation \times information interaction effect indicated that the combination of social-affirmation and standard information or no-affirmation and reassuring information was

associated with decreased self-stigma two weeks after the manipulation. Study 2 tested the values-affirmation developed in Study 1 with an online sample of clinically distressed adults. Study 2 utilized a two-group between-subjects design with a sample from Amazon's MTurk ($N = 186$). In contrast to Study 1, for more distressed adults, values-affirmation did not reduce threat-responses associated with reading the help-seeking information, but it did increase positive help-seeking beliefs. Overall, the combination of results in the present research suggests that values-affirmation and reassuring information about help-seeking might be effective approaches for eliciting self-affirmation online. Additionally, the salience of psychological distress and demographic characteristics may influence the outcome of self-affirmation interventions conducted to promote help-seeking. For those for whom distress is less salient, encouraging self-affirmation may reduce threat associated with relevant help-seeking information, but doing so may also decrease the urgency to seek help. In contrast, for those whose distress is more salient, encouraging self-affirmation may not directly reduce threat, but may enable more objective assessments of messages that encourage the benefits of seeking professional help for mental health concerns.

Keywords: self-affirmation theory, online, help-seeking, psychotherapy

CHAPTER 1

OVERVIEW

Millions of North Americans who suffer from mental health concerns do not seek treatment in a timely manner despite substantial evidence that mental health treatment can effectively address a broad range of mental health concerns for clients of different ages and cultural backgrounds (American Psychological Association, 2012). Approximately one in four American adults (26.2%) suffer from mental illness over the course of a year (Kessler, Chiu, Demler, & Walters, 2005), but less than half (41.1%) of those with a mental illness seek any sort of medical or psychological treatment during that time to address their concerns (Wang, Lane, Olfson, Pincus, Wells, & Kessler, 2005). Those who eventually seek services often delay doing so, with a median delay of 11 years for those experiencing chronic mental health concerns (Wang, Berglund, Olfson, & Kessler, 2004). In addition, yearly utilization rates of psychotherapy—separate from other types of mental health services—has remained low, ranging from 3.4% in 1998 to 3.2% in 2007 (Olfson & Marcus, 2010). In order to mitigate this underutilization of psychotherapy it may be beneficial for psychologists to develop theoretically-based strategies to mitigate the barriers that people confront when deciding whether to seek help.

Any type of offered help involves a mixture of elements that are perceived to benefit and threaten self-worth (Fisher, Nadler, & Witcher-Alagna, 1982). Individuals with mental health concerns may perceive psychotherapy to be beneficial, threatening, neither, or a combination of both. For example, one person may believe that therapy will relieve their depression (beneficial), another person might believe that therapy will “fill their head with all sorts of funny ideas” and make things worse (threatening), another person might believe that

therapy is nice for some people but doesn't really work for them (benign; neither threatening nor beneficial), or still another person might believe that therapy might help them, but it is something that means they have very serious mental health problems (combination of beneficial and threatening). It follows that when help is primarily perceived as beneficial, reactions are positive and in-line with seeking help. Conversely, when help is primarily perceived as threatening, reactions are generally negative, self-protective, and avoidant (Fisher et al., 1982).

Indeed, psychological help may often be perceived as threatening, particularly when it appears to conflict with other socialized values such as independence and self-reliance (Fisher et al., 1982), or if it is too closely aligned with stigmatizing labels associated with mental illness or help-seeking (Lannin, Vogel, Brenner, Abraham, & Heath, 2016; Link, Cullen, Struening, Shrout, & Dohrenwend, 1989). Negative labels associated with help-seeking—such as insecure, inadequate, inferior, weak, and disturbed (King, Newton, Osterlund, & Baber, 1973; Sibicky & Dovidio, 1986; Vogel, Wade, & Haake, 2006; Vogel, Wade, & Ascherman, 2009)—may threaten positive self-worth, which individuals are strongly motivated to protect (Lannin, Guyll, Vogel, & Madon, 2013; Steele, 1988). There is justification for developing interventions that reduce the threat inherent to the help-seeking process so that self-protective responses, which may hinder intentional efforts to address mental health concerns—can be minimized.

For many people the first step toward seeking help for mental health concerns may consist of consulting online resources because they offer convenience and anonymity (Fox & Duggan, 2013). Thus, the current research develops a brief online intervention based on self-affirmation theory (Sherman & Cohen, 2002, 2006; Sherman & Hartson, 2011; Steele, 1988;

Steele & Liu, 1983) designed to 'set the stage' for educational help-seeking information that can be accessed online. Interventions that elicit self-affirmation may enable individuals with mental health concerns in need of professional help to feel less threatened by the prospect of therapy, which in turn may allow them to better engage help-seeking information in order to make an informed decision about treatment options.

Self-affirmation theory holds promise for understanding the psychological processes associated with encouraging the accommodation of information about seeking psychological help. According to self-affirmation theory any information that suggests that one might be incompetent, inadequate, or unstable can threaten a person's self-worth, which in turn evokes responses fueled by the motivation to restore that self-worth (Sherman & Cohen, 2006; Steele, 1988). Such self-protective responses are enacted in the service of maintaining positive self-perceptions, but often preclude accommodating information that is threatening to one's identity. However, in line with other well-established psychological processes (see Allport, 1961), self-affirmation theory also posits that individuals may be able to preemptively compensate for identity-threat (Sherman & Hartson, 2011). That is, if individuals are able to affirm an unthreatened area of their identity (i.e., engage in self-affirmation) prior to encountering personally threatening information there is then less motivation to utilize self-protective strategies such as avoiding or distorting information. It is thus more likely that an individual who utilizes self-affirmation would be more accommodating, less rejecting, and less avoidant of threatening information.

There is robust evidence that self-affirmation attenuates self-protective responses to information about physical health-risks, increasing attention paid to health-risk messages and reducing the extent to which individuals dismiss health-risk messages (see Harris & Epton,

2009, 2010 for reviews). This health-risk literature provides justification for exploring the potential efficacy of self-affirmation interventions as means for increasing acceptance of help-seeking information, which may often be perceived as threatening due to stigma (Lannin et al., 2016). To date, only one empirical study has examined the effects of self-affirmation on variables related to psychological help-seeking (Lannin et al., 2013). This study found that a brief writing task about an important personal value (values-affirmation) indirectly increased willingness to seek help by significantly reducing the psychological barrier of therapy-related stigma. However, more work is needed to develop a self-affirmation intervention that can be employed online to mitigate the underutilization of therapy. Therefore, the current research developed and tested a brief online self-affirmation intervention aimed at reducing barriers to help-seeking information.

In order to employ self-affirmation interventions online to reduce help-seeking barriers, it is important to further test strategies by which self-affirmation may be elicited to produce the strongest effects. Most self-affirmation studies have employed manipulations that elicit self-affirmation by promoting reflection on personal values (i.e. values-affirmation; McQueen & Klein, 2006). These studies often entail either rank-ordering a list of personal values, writing an essay on an important value, or utilizing both activities. However, it is conceivable that self-affirmation enhances the perception that a person is secure in their positive social relationships, precluding the need to defend against external threats to self-worth (Baumeister & Leary, 1995; Knowles, Lucas, Molden, Garner, & Dean, 2010; Shnabel, Purdie-Vaughns, Cook, Garcia, & Cohen, 2013; Walton & Cohen, 2011). This possibility—that self-affirmation interventions might be effective because they ultimately encourage a sense of social belonging—has implications for the methods of manipulating

self-affirmation so that it could be effectively employed online to reduce the threat associated with mental health and help-seeking information. Manipulations that elicit reflection on positive personal relationships (i.e., social-affirmation) may also be effective. Therefore, Study 1 tested two potential online self-affirmation strategies—values-affirmation and social-affirmation—to investigate which self-affirming strategy or combination of strategies is most effective in reducing help-seeking barriers.

Most self-affirmation studies present participants with information that may potentially threaten positive self-perceptions after participants are encouraged to self-affirm or perform a control activity (Sherman & Cohen, 2006; Cohen & Sherman, 2014; McQueen & Klein, 2006). This paradigm is intended to threaten positive self-perceptions, and prior self-affirmation is predicted to decrease perceptions of threat and, therefore, reduce self-protective responses to being threatened such as avoiding, rejecting, or denying the personal importance of the message (Good & Abraham, 2007). However, less research has examined the effects of employing more reassuring health-related messages, that is, messages that provide relevant information while also providing support and encouragement. This omission leaves it unknown whether reassuring information may be paired with self-affirmation interventions to increase efficacy in reducing help-seeking barriers. This is an important gap because many individuals who seek online health-related information are motivated by the desire for reassurance (Powell, Inglis, Ronnie, & Large, 2011). The few self-affirmation studies manipulating health-risk information have found contradicting results when manipulating the degree to which messages are either reassuring or threatening (Schüz, Schüz, & Eid, 2013; Van Koningsbruggen & Das, 2009). To address this omission, Study 1 examined whether more reassuring help-seeking messages would be perceived as less

threatening. In this study, standard help-seeking information described mental health concerns as serious illnesses, while describing treatment as beneficial in addressing these concerns. In contrast, reassuring information described mental health concerns as normal coping responses to stressors, and also described treatment as beneficial in addressing these concerns.

Informed by the results of Study 1, Study 2 compared values-affirmation paired with reassuring help-seeking information against a no-treatment group. This randomized online experiment tested the effects of a self-affirmation intervention in an online convenience sample of distressed U.S. adults. The results of Study 2 provided generalizability and provided implications as to the further development of self-affirmation interventions aimed at increasing therapy utilization.

CHAPTER 2.

LITERATURE REVIEW

The present research focused on the development of a theory-based approach to mitigate help-seeking barriers via a brief online intervention. An online format was chosen because Internet use is increasingly pervasive for all age groups, with 85% of all American adults using the Internet (Zickuhr, 2013), and 57% of adults using their cell phone to go online (Dugan & Smith, 2013). Consulting online resources appears to constitute an important initial step for finding health-related information and exploring treatment options. Fifty-nine percent of U.S. adults have looked online for health information in the past year, and 35% of U.S. adults report that they have gone online to diagnose their own or someone else's medical condition (Fox & Duggan, 2013). Moreover, 31% of young adults reported previously searching online for help-seeking information (Horgan & Sweeney, 2010). Despite the potential usefulness of help-seeking information, engaging with it may be threatening due to therapy-related stigma (Lannin et al., 2016). In line with these trends, the present studies developed and tested a brief online intervention based on self-affirmation theory (Sherman & Cohen, 2002, 2006; Sherman & Hartson, 2011; Steele, 1988; Steele & Liu, 1983) that proposes to reduce help-seeking threat, which in turn, may increase the likelihood that individuals will be motivated to seek psychological help.

Self-Affirmation Theory and Help-seeking

Mental health and help-seeking information may jeopardize individuals' self-worth by suggesting that they are incompetent, inadequate, or unstable (Lannin et al., 2016; Vogel et al., 2006). Stigmatizing labels associated with seeking psychological help include insecure, inadequate, inferior, weak, and disturbed (King, Newton, Osterlund, & Baber,

1973; Sibicky & Dovidio, 1986). Such labels directly contradict positive labels that people try to maintain—such as competent, adequate, and stable (Sherman & Cohen, 2006). As such, in order to protect positive self-conceptions people may avoid therapy-related information to reduce the threat of being negatively labeled (Fisher, Nadler, & Witcher-Alagna, 1982; Lannin et al., 2013; Lannin et al., 2016).

Self-affirmation theory holds promise not only for providing a conceptualization for the psychological processes associated with encountering help-seeking information, but also for suggesting means by which threat associated with help-seeking information might be reduced (Sherman & Cohen, 2006). According to self-affirmation theory, individuals are motivated to maintain a global sense of self-worth by holding onto favorable self-conceptions and positive beliefs. In turn, information that threatens the self-image motivates responses to protect the self-image by addressing the threat.

For some, the term *self-affirmation* may evoke images of Al Franken’s satirical Saturday Night Live who hosts a show titled, “Daily Affirmation with Stuart Smalley.” Stuart’s attempts to bolster his self-esteem involve therapeutic clichés and the mantra, “I’m good enough. I’m smart enough. And doggone it, people like me!” (Franken & Smalley, 1992). The arc of Franken’s satirical portrayal implies that engaging in explicit self-affirming activity with the awareness that it is intended to directly counter a threat to one’s identity is futile, as his self-affirmations typically end with Stuart’s personal failings looming even larger than before he began affirming himself. For example, in one sketch (Franken, 1991) Stewart attempts to boost his self-worth, but it backfires. Moments after “self-affirming” he decompensates, admitting, “I am just a fool ... I ... I don't know what I'm doing ... they're gonna cancel the show... I'm gonna die homeless and penniless and twenty

pounds overweight ... and no one will ever love me." Empirical evidence supports the psychological processes that underlie this satirical portrayal, suggesting that direct attempts to 'self-affirm' often intensify anxiety and awareness of failure (Crocker & Park, 2004).

In contrast to Franken's satirical barbs, self-affirmation does not represent a conscious attempt to directly contradict threatened domains of self-worth, nor attempts of improving positive moods (Schmeichel & Martens, 2005; Schmeichel & Vohs, 2009; Sherman & Hartson, 2011). Instead, self-affirmation occurs beneath conscious awareness, and involves a form of compensation wherein affirming a specific aspect of one's identity that is not under threat offsets a more vulnerable aspect (see Allport, 1961; Brown & Smart, 1991; Sherman & Cohen, 2006). Hence, self-affirmation can be considered a process that is inherent to a larger psychological system that identifies threat and engages self-protective behaviors. Theorists have utilized metaphors such as an "immune system" (Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998; Sherman & Hartson, 2011) or "security system" (Hart, 2014) to conceptualize the dynamics of psychological systems that function to identify and neutralize identity-threats. Within this conceptualization, self-affirmation is a process predicted to reduce self-protective responses to potentially threatening stimuli by making salient the safety of important unthreatened personal domains (Sherman & Cohen, 2006).

Possible Responses to Help-Seeking Information

Self-affirmation theory proposes three processes by which an individual might satisfy motivation to maintain a sense of self-worth when exposed to help-seeking information—information which itself may activate self-evaluative concerns that one is incompetent, inadequate, unstable, or inconsistent (Lannin et al., 2016). By way of illustrating these processes, consider the example of an individual with depressive symptoms who searches

online for help-seeking information. The first process by which an individual may satisfy motivations to maintain self-worth corresponds to when that person encounters threatening help-seeking information and accommodates that information in an adaptive manner—rather than denying, rejecting, or avoiding it (Sherman & Cohen, 2006). In this case, the person considering help-seeking information might possibly be aware that the information could suggest personal weakness or failure. However, recognizing that dealing with the present concerns might benefit from professional help, this person may thus more deliberately and objectively consider the information despite its potential threat to self-worth. Many health-related educational interventions are undergirded by the assumption that individuals will be able to rationally accept and accommodate useful help-seeking information, despite the identity-threat it can evoke (de Hoog, Stroebe, & de Wit, 2007). However, as described earlier, accommodating help-seeking information can be difficult; accepting that one has a mental health concern that could benefit from professional help can endanger key positive aspects of one's identity, such as beliefs about one's independence, adequacy, and self-reliance (Fisher et al., 1982; Steele, 1988).

The second process by which an individual may satisfy motivations to maintain self-worth corresponds to when directly accepting and accommodating information may be too threatening to an individual's self-worth. This individual may be motivated to maintain positive self-perceptions by utilizing self-protective responses (Sherman & Cohen, 2002, 2006). In order to repair or protect the self-conception of competency, adequacy, and stability—a self-protective response counteracts or neutralizes the threatening information by ignoring, denying, or contradicting it. For example, a person with depressive symptoms may view psychological help as threatening, and might protect their self-worth by derogating the

benefits of psychological help (Lannin et al., 20013) or avoiding potentially useful help-seeking information (Lannin et al., 2016). Self-protective responses like these may allow a person to temporarily maintain a more positive self-view, but may also decrease the likelihood of seeking psychological help, even if doing that could be beneficial. Therefore, despite providing temporary protection against threats to self-worth, self-protective responses may often preclude accommodating potentially useful information that could lead to making adaptive behavioral changes.

In contrast, there is a third process that can occur, and that may mitigate the need to protect self-worth from identity-threatening information. This can occur when—prior to encountering threatening information—individuals first bolster their self-worth through self-affirmation by increasing the salience of a positive and relevant personal value or characteristic. Specifically, salient positive self-evaluations in one domain of the identity are theorized to compensate for threats that “attack” a different domain, allowing a person to retain adequate self-worth in a global sense (Sherman & Cohen, 2006). When self-affirmation occurs prior to the presentation of threatening information, the positive self-image is maintained, eliminating the need to protect the self from negative self-evaluations that threatening information might otherwise have elicited. For example, consider a person with depressive symptoms who has just received a thank you card and reflects on the positive and self-relevant personal characteristic such as the fact that they are generous. Then, if this person subsequently encounters help-seeking information they might have less need to defend their self-worth from threat because another positive self-aspect, their generosity, is salient. By reducing the perceived threat to self-worth, self-affirmation may enable this person to be able to more objectively evaluate help-seeking information.

Reducing Barriers Associated with Help-Seeking Information

Self-affirmation theory provides a useful conceptualization of how affirming the self may attenuate the threat associated with help-seeking information and lead to favorable outcomes. Research demonstrating self-affirmation's efficacy in reducing threat associated with health-risk information may support the potential usefulness of self-affirmation interventions with respect to seeking psychological help. Self-affirmation manipulations have exhibited positive effects in at-risk groups in reducing self-protective responses to threatening health-risk information. In comparison to control activities, self-affirmation manipulations have been found to increase variables related to accepting health-risk messages such as message-processing, perceived personal relevance of the message, perceptions of message quality, accessibility of threat-related cognitions, attention paid to the message, intentions to change health-damaging behaviors, personal control, and self-efficacy, while reducing tendencies to derogate health-risk messages (Harris & Epton, 2009, 2010). There is reason to believe that self-affirmation may offer similar effects to help-seeking information, which the current research begins to address.

Due to the strong inverse relationship between help-seeking threat and positive attitudes toward seeking help, interventions that elicit self-affirmation to reduce the threat inherent to help-seeking information could also potentially allow individuals to challenge negative beliefs about psychological help (Lannin et al., 2016). As a means of reducing the threat associated with seeking professional psychological help—advocacy, government, and public-service groups have attempted to directly alter stigmatizing attitudes toward mental illness (Corrigan, 2004). Theory-based approaches have typically utilized attitude-altering interventions (for reviews see Corrigan, Morris, Michaels, Rafacz, & Rüsçh, 2012; Gulliver,

Griffiths, Christensen, & Brewer, 2012; Mittal, Sullivan, Chekuri, Allee, & Corrigan, 2012), or have attempted to improve mental health literacy through psychoeducation (Fox, Blank, Rovnyak, & Barnett, 2001; Jorm et al. 2000; Teng & Friedman, 2009).

Unfortunately, many attempts to explicitly alter help-seeking attitudes directly or via psychoeducation have resulted in mixed success. This may possibly be due to a “rebound” effect, in which direct attempts to contradict negative stereotypes may counter-intentionally induce greater activation and recall of those negative stereotypes (Corrigan, 2004; Macrae, Bodenhausen, Milne, & Jetten, 1994). Some intervention research has described success in preventing rebound effects. Namely, two cognitive restructuring interventions (Luoma et al., 2008; Masuda et al., 2007) avoided rebound effects and decreased self-stigma associated with mental illness, but the interventions also required between 2 and 6 hours. Additionally, Wade and colleagues (2011) found that attending a single group therapy session significantly decreased self-stigma.

Interventions that have succeeded in reducing help-seeking threat present a quandary. By requiring participation in therapeutic activities, attempts to reduce help-seeking threats have implicitly required participants to at least partially overcome personal barriers to seeking psychological help before they receive an intervention designed to reduce personal barriers to seeking psychological help. Indeed, in order to participate in any intervention designed to reduce barriers associated with the help-seeking process, there is no way to remove all personal barriers. In order to participate in any help-seeking intervention any participant must overcome *some* barriers—whether that involves participating in an intensive in-person therapy session or clicking on an online link to read information about mental health and treatment options—but those barriers to participation can be reduced.

Consequently, there is justification for developing brief interventions based on self-affirmation theory, which may reduce barriers to psychotherapeutic treatment while also minimizing the barriers associated with participating in the intervention itself because self-affirmation interventions do not involve activities related to therapy.

Developing a Brief, Online Self-Affirmation Intervention

Research aimed at adapting laboratory-tested methods of eliciting self-affirmation to naturalistic settings is still in its nascent stages. In a study by Lannin and colleagues' (2013), distressed undergraduates were asked to self-affirm by rank-ordering important personal values and wrote for five minutes about why their top-rated value was important to them. In comparison to a group that engaged in a control writing-task, this values-affirmation activity reduced the extent to which clinically distressed undergraduates' internalized stigma associated with seeking psychological help. Some have argued that these types of self-affirmation writing-tasks could be employed in therapeutic settings (Ehret, LaBrie, Santerre, & Sherman, 2014), but it is unlikely that writing interventions would be brief enough to utilize online. Even five minutes may be too long for many typical online users, especially when considering that the average length of time spent on any given webpage is less than one minute (Nielsen, 2011). If lab-tested self-affirmation manipulations are to become viable online interventions alternative methods may be necessary.

An important step in translating an effective self-affirmation intervention for online populations involves developing an effective method for enabling individuals to reflect on unthreatened aspects of their identities in a brief format that can be applied online. There are numerous methods of encouraging self-affirmation. Although many of them may be effective, most are not brief. Approximately 28% of reviewed studies utilized a value essay

writing-task in which participants wrote about why a particular value they selected was important to them, and approximately 19% of studies utilized other writing-tasks (McQueen & Klein, 2006). Alternative methods of eliciting self-affirmation have included inserting self-defining terms into sentence stems (Schimel, Arndt, Banko, & Cook, 2004), asking participants if they had ever performed different behaviors that demonstrate kindness (Reed & Aspinwall, 1998), offering positive feedback on performance tasks (Ben-Ari, Florian, & Mikulincer, 1999), encouraging participants to visualize a person who liked them unconditionally (De Cremer & Sedikides, 2005), completing self-affirming sentence scrambles (Stone & Cooper, 2003), and completing self-esteem scales (Kimble, Kimble, & Croy, 1998). There is also evidence that self-affirmation can be elicited by activities such as viewing one's Facebook profile page (Toma & Hancock, 2013), by completing a survey about one's personal virtues (Napper, Harris, & Epton, 2009), or by completing sentence stems such as, "If I feel threatened or anxious, then I will..." with self-affirming clauses, such as "remember things I have succeeded in" (Armitage, Harris, & Arden, 2011).

Values-affirmation, which entails reflecting on an important personal value, is the most common self-affirmation manipulation (30% of all reviewed studies) and may be particularly effective at eliciting self-affirmation (McQueen & Klein, 2006; Sherman & Cohen, 2006). Reflecting on values may help make individuals more certain of their identity and their priorities, which in turn could bolster self-worth and make them less vulnerable to threats to the identity such as help-seeking stigma (Cohen & Sherman, 2006; Lannin et al., 2013). By providing an alternative source of self-worth, reflecting on personal values may enable individuals to evaluate the threatening information in a less biased and self-protective manner. The most common values-affirmation manipulation asks individuals to identify

their most important value by rank-ordering the personal importance of a list of values such as sense of humor, relations with friends/family, musical ability/appreciation, physical attractiveness, creativity (Allport, Vernon, & Lindzey, 1960; Harber, 1995). For an online application, adapting a rank-ordering values-affirmation activity may represent an effective and brief method of encouraging individuals to reflect on intrinsic aspects of their identity that could temporarily bolster their self-worth.

An online intervention designed to reduce threats associated with help-seeking may benefit from considering alternative effective methods of bolstering self-worth in help-seeking contexts. While the most common method of self-affirmation manipulation is values-affirmation (McQueen & Klein, 2006), another notable self-affirming process may involve encouraging perceptions that one experiences a secure sense of social belonging (Shnabel et al., 2013; Walton & Cohen, 2011). The idea that there is a fundamental need for social belonging has an enduring history in psychology (Baumeister & Leary, 1995; Maslow, 1954; Thoits, 1984), with related constructs ranging from affection between people (Murray, 1938), need for unconditional positive regard (Rogers, 1951), attachment (Bowlby, 1979), the need for relatedness (Kohut, 1977; Ryan & Deci, 2000), and affiliation motivation (McClelland, 1987). Baumeister and Leary (1995) note that a great extent of behavior, emotion, and thought can be attributed to the “pervasive drive to form and maintain at least a minimum quantity of lasting, positive, and significant interpersonal relationships” (p. 497).

The psychological subsystems that monitor threats to close relationships may be closely related to the systems that monitor self-worth (Cross, Bacon, & Morris, 2000; Hart, 2014; Leary & Downs, 1995). There is evidence that self-worth may be more sensitive to perceptions of others’ evaluations than it is to seemingly objective indicators of ability or

‘goodness’ (Leary & Baumeister, 2000). For many people with mental distress, information that makes their mental health salient may evoke a threat to self-worth because it threatens the stability of important close relationships. Information that threatens an individual’s ability to maintain the esteem of close others could evoke self-protective strategies aimed at keeping themselves from being socially excluded. In other words, some people may deny their need for help or avoid help-seeking information as a way of protecting their perceived social value. Conversely, if individuals can bolster a sense that their close social relationships are safe, positive, and stable (i.e., social-affirmation) prior to encountering information that threatens their ability to maintain the esteem of close others, they may be less motivated to utilize strategies to protect their perceived social value. These individuals would have bolstered their self-worth (i.e., self-affirmation) by bolstering a sense of social belonging, (Cox & Arndt, 2012; Hart, 2014). In other words, believing that they are “loved and secure” may protect more global appraisals that they are still good, adequate, stable, and competent.

There is empirical support for the notion that eliciting perceptions that one’s social relationships are safe, positive, and stable (i.e., social-affirmation) may mitigate certain maladaptive self-protective strategies elicited by threats to identity. Walton & Cohen (2011) conducted an intervention in which college freshmen wrote an essay predicting a future state where they would feel a sense of belonging at college. In comparison to control groups, this social-affirmation intervention halved the minority achievement gap and reduced Black students’ self-reported number of doctor visits over a three year period. Additionally, Shnabel et al. (2013) found that social belonging themes mediated the beneficial effects of

self-affirmation writing-tasks on outcomes such as GPA for ethnic minorities and on math performance for females.

It is possible that affirming personal values (values-affirmation) might reduce identity-threat because it increases the salience of social resources, or entails social-affirmation. Therefore, the role that social-affirmation may play in encouraging self-affirmation holds important implications for the types of brief manipulations that could effectively be employed in help-seeking contexts. To empirically examine the role of social-affirmation in values-affirmation manipulations, a mediation analysis was conducted on archival data from a previous self-affirmation experiment (Lannin et al., 2013; see Appendix A for full mediation analysis). Results indicated that writing about social belonging was a statistically significant mediator of the values-affirmation manipulation's effects on decreases in self-stigma over time. This suggests that effective self-affirmation interventions may be effective when they also elicit thinking about unthreatened social resources. This suggests that a manipulation that affirms social belonging, which I refer to as *social-affirmation*, could offer a direct and potent method of reducing threats associated with help-seeking information. Therefore, it is predicted that social-affirmation would elicit self-affirmation effects to reduce help-seeking barriers and increase positive help-seeking beliefs.

However, an important limitation should be noted about the archival data analysis just described. Self-affirming participants who reported decreased self-stigma self-selected to write about social-affirmation themes, and were not randomly assigned to a social-affirmation manipulation. Consequently, the results could mean that writing about positive social relationships is an indicator that self-affirmation has taken place, not that writing about positive social relationships necessarily encourages self-affirmation. In other words, social-

affirmation may represent a “manipulation check” of sorts, but may not necessarily elicit self-affirmation in and of itself. In fact, it is plausible that a manipulation that required individuals to affirm close personal relationships could actually exacerbate identity-threat in a help-seeking context, particularly if those social-affirming individuals believe that their close relationships might be jeopardized by the knowledge that they had serious mental health concerns or needed therapy. In order to more conclusively examine the possibility of social-affirmation as a means of eliciting self-affirmation, it is necessary to compare the effects of both experimentally manipulated social-affirmation and values-affirmation (Sherman & Cohen, 2006).

Identifying Optimal Messaging for Online Help-Seeking Interventions

While it is important to examine the type of self-affirmation interventions that might be most useful in reducing help-seeking barriers, it is also important to examine the effects of the information itself. Most self-affirmation studies utilize a two-part paradigm wherein after completing either a self-affirmation or control activity participants are then presented with information that threatens participants’ positive self-perceptions (Harris & Epton, 2009; Sherman & Cohen, 2006; Cohen & Sherman, 2014; McQueen & Klein, 2006). For example, after facilitating either a self-affirmation or control activity, health-risk self-affirmation studies typically present information that describes the health-risks related to a behavior in which a participant engages such as drinking coffee, smoking, or overeating (Harris & Epton, 2009). Whereas the majority of self-affirmation research has focused on elements related to manipulating self-affirmation, less research has observed the effect of manipulating the information that occurs after the self-affirmation intervention (but see Schüz, Schüz, & Eid, 2013; Van Koningsbruggen & Das, 2009).

In addition to the standard health-risk messages that are commonly utilized, it may also be useful to explore help-seeking information that is more reassuring, i.e., information that also provides support and encouragement. Testing the effects of reassuring information is important because many individuals who seek online health-related information are motivated by the desire for reassurance, and specifically relief from their fears and knowledge that they are not alone in what they are experiencing (Powell, Inglis, Ronnie, & Large, 2011). However, it is difficult to predict how utilizing both self-affirmation and subsequent reassuring information would affect help-seeking outcomes.

The few self-affirmation studies that have manipulated both self-affirmation and the content of subsequent health-risk messages have found contradicting results. Findings of Van Koningsbruggen and Das (2009) suggest that self-affirmation may be useful only when individuals are under “moderate threat”, that is they (a) engage in behaviors that put them at risk for an illness but do not receive information about their susceptibility to the illness or (b) do not engage in behaviors that put them at risk for an illness but do receive information about their susceptibility to the illness. In line with this, two additional studies found that women under similar “moderate threat” were less likely to reject “scientific” information linking caffeine consumption to breast cancer after completing a self-affirmation intervention (Harris & Napper, 2005; Sherman, Nelson, & Steele, 2005). In contrast to these studies, Schüz, Schüz, and Eid (2013) found that self-affirmation was most effective in reducing reactant behavior among those under “high identity-threat”, those exhibiting high-risk behaviors who also received personal feedback concerning their susceptibility to an illness such as skin cancer.

These contradictory findings suggest that more study is needed in order to ascertain the benefit of employing reassuring help-seeking information with a self-affirmation manipulation. To date, no studies have examined the type of help-seeking information that follows self-affirmation manipulations. Accordingly, Study 1 manipulated the degree of reassurance help-seeking information contains (reassuring vs. standard information), to examine whether information may influence the efficacy of self-affirmation strategies on outcome variables relevant to seeking psychological help.

Generalizing Self-Affirmation Effects to Online Populations

In order to translate broader strategies for eliciting self-affirmation into effective online interventions, it may also be beneficial to test interventions in more diverse samples. Researchers in the field of counseling psychology, in particular, have often emphasized the importance of external validity (Sue, Bingham, Porché-Burke, & Vasquez, 1999), noting that findings from basic research should be hesitant in generalizing findings from undergraduate samples across population subgroups, settings, and time (Tebes, 2000). Peterson's (2001) meta-analysis supported this notion, finding that undergraduate populations are more homogeneous than non-student populations, and often exhibit effect sizes that differ in size and magnitude from non-student populations in non-systematic ways. Although well-established universal theories—such as self-affirmation theory—may be able explain individual differences both within and across cultures (Guyll & Madon, 2000), specific findings may not generalize to naturalistic environments where unpredictable situational variables and individual and group differences may exhibit greater variation, sometimes moderating theoretically-established effects.

In order to extend generalizability self-affirmation interventions may require sampling other populations to confirm their external validity. The majority of self-affirmation studies have been conducted in laboratory settings and have exhibited favorable outcomes (McQueen & Klein, 2006), but implementations outside of the laboratory have found mixed results. For example, Burgess et al. (2013) found that completing a brief survey (adapted from Napper et al., 2009) about personal virtues in a health care setting produced unintended iatrogenic effects, actually reducing Black individuals' self-esteem and ability to communicate with doctors. Burgess and colleagues posited that the self-affirmation intervention may have unintentionally primed participants' own perceived shortcomings, highlighting their perceived lack of personal virtues, a process that was not observed in Napper and colleagues' laboratory experiments. Interestingly, while Burgess and colleagues' finding contradicts most published laboratory-based self-affirmation studies; their findings are actually in line with some clinical self-affirmation studies that have not always demonstrated positive results (Charlson et al., 2007; Mancuso et al., 2012; Ogedegbe et al., 2012). The contradictory results between self-affirmation experiments conducted in the laboratory experiments versus in clinical settings suggest that more study is needed in order to generalize the efficacy of self-affirmation interventions into non-student populations who may benefit from psychological services.

Overview of Present Studies

Previous testing of self-affirmation theory's applicability to applied intervention strategies (Lannin et al., 2013) provide the foundation for the next two phases in the development of self-affirmation as a health promotion intervention. Study 1 consisted of exploratory research to hypothesize new approaches to mitigate psychological barriers

toward psychological help-seeking (see hypothesis development; Flay, 1986), experimentally examining the strategies of values-affirmation vs. social-affirmation. This study utilized a 2×2×2 factorial design with two self-affirmation manipulations (values-affirmation vs control and social-affirmation vs control), and a manipulation of help-seeking information (reassuring vs. standard). Conducted online using a sample of undergraduates, Study 1 is classified as an online experimental design with moderate internal validity and low external validity (Gelso, 1979). First, it was hypothesized that values-affirmation, social-affirmation, and reassuring information would reduce threat-responses immediately following the experimental manipulations. Second, it was hypothesized that values-affirmation, social-affirmation, and reassuring information were predicted to increase in positive help-seeking beliefs.

To test external validity, Study 2 tested the online values-affirmation intervention that was developed in Study 1, in a national convenience sample of distressed adults. Study 2 is classified as an online experimental field study with moderate internal and external validity (Gelso, 1979). It was hypothesized that, compared to the no-affirmation group, people completing the values-affirmation intervention would report (a) decreased threat and (b) increased positive help-seeking beliefs.

CHAPTER 3

STUDY 1

Overview and Design

Self-affirmation is a psychological process that buffers one's global sense of self-worth from subsequent identity-threats (Sherman & Cohen, 2006; Sherman & Hartson, 2011). Study 1 utilized a 2×2×2 between-subjects experimental design with two self-affirmation manipulations (*values vs. control*, *social vs. control*) and one manipulation of information (*reassuring vs. standard*). In line with the majority of self-affirmation studies (McQueen & Klein, 2006), those completing *values-affirmation* identified a relevant value and reflect upon the personal importance of that value. In line with manipulations that elicit a sense of social belonging without using values scales (Lambert et al., 2013), those completing *social-affirmation* listed people or groups of people with whom they feel they really belong, and described those relationships. Participants assigned to both *values-affirmation* and *social-affirmation* completed both affirmation activities—first *values-affirmation* then *social-affirmation*. Participants assigned to complete *no-affirmation* alphabetized a list of last names, an activity that neither made salient personal values, nor elicited a sense of social belonging.

The information factor was comprised of a *reassuring information* and a *standard information* level. *Reassuring information* described therapy as a means for self-exploration and coping with normal stressors that are part of the college experience, and then described its benefits. In line with national mental health websites (e.g., APA, 2015; NIMH, 2014), *standard information* described the susceptibility and severity of common mental illnesses such as depression and anxiety, and then described the benefits of therapy.

Outcome measures included assessments of threat such as perceptions of help-seeking information threat (Witte, 2013), the time spent reading information, and negative mood (PANAS; Watson, Clark, & Tellegen, 1988). Help-seeking beliefs were also assessed, and included the Self-Stigma of Seeking Help scale (SSOSH; Vogel et al., 2006) and the Inventory of Attitudes Toward Seeking Professional Psychological Help Scale (IATSPPHS; Mackenzie, Knox, Gekoski, & Macaulay, 2004).

First, it was hypothesized that values-affirmation, social-affirmation, and reassuring information would reduce threat-responses immediately following the experimental manipulations. Second, it was hypothesized that values-affirmation, social-affirmation, and reassuring information would increase positive beliefs about help-seeking. Exploratory analyses were also conducted to (a) test structural models to examine cross-sectional psychological processes related to how the experimental manipulations affected the outcome variables and (b) to examine potential effects two weeks posttest.

Method

Power Analysis

To date there has been only one published self-affirmation study that assessed outcome variables associated with seeking psychological help, which utilized the Self-Stigma of Seeking Help scale as an outcome variable (Lannin et al., 2013). Utilizing Cohen's (1988) formula to calculate effect size F (see Figure 1 below), a reanalysis of Lannin and colleagues' data found an effect size F equal to .25 between posttest self-stigma scores of those who self-affirmed ($M = 2.84$, $SD = 0.74$) versus those who did not self-affirm ($M = 2.49$, $SD = 0.61$).

$$F = \sqrt{\frac{\eta^2}{1 - \eta^2}} \quad F = \sqrt{\frac{.06^2}{1 - .06^2}} \quad F = .25$$

Figure 1. Calculation of effect size F for analyses utilizing the general linear model.

G-Power version 3.1.9 (Faul, Erdfelder, Lang, & Buchner, 2007) was employed to predict a sample size based on the effect size F found in Lannin and colleagues' (2013) study. However, because the present study is conducted online and greater measurement error is expected, an estimate of sample size was calculated to predict a sample size using more conservative parameters for effect size and power, $F = .20$, $\alpha = .05$, $1 - \beta = .95$, *numerator df* = 1, and *number of groups* = 8. The results indicated that a minimum total sample size of $N = 328$ (with 41 participants in each cell) would be required to achieve a critical F -value equal to 3.87. Our sample size ($N = 384$) exceeded this minimum because we collected data until term's end to enable students to fulfill course requirements.

Participants

A total of 384 undergraduates at Iowa State University were recruited to participate in the study through announcements in their psychology and communication studies classes (*Women* = 64.6%; *Age*, $M = 19.2$, $SD = 1.5$, *Range* = 18-28). The sample included first-year students (55.5%), second-year students (25.5%), third-year students (10.9%), fourth-year students (7.6%), and other (0.5%). Participants were European American (88.5%), African American (3.6%), Asian American/Pacific Islander (2.9%), Other (2.6%), Latino/a (2.1%), and American Indian or Alaskan Native (0.3%). More than one-third (35.2%) of the sample had previously sought psychological help such as psychotherapy.

Measures and Materials

Threat. Responses to threat were assessed via two self-report measures (help-seeking information threat and negative mood) and a behavioral indicator (time spent reading information).

Help-seeking information threat. The measure assessing help-seeking information threat was composed of 8 items adapted from Witte (2013) that provided a self-reported assessment of how threatening the mental health and treatment information was to participants. All items are rated on a 7-point Likert scale, coded such that 1 = *strongly disagree* and 7 = *strongly agree*. Five items assess fear, with a sample item being, “How much did this message make you feel tense?” Three questions assess susceptibility, with a sample item being, “If I do not seek psychological help, I am at risk for a mental illness.” As shown in Appendix K, one susceptibility item was removed to improve internal reliability, “It is possible that I will develop a mental illness.” Correlations between help-seeking information threat and other study measures provide evidence of construct validity, indicating that individuals reporting greater help-seeking information threat also tended to report greater self-stigma ($r = .14, p = .006$), negative mood ($r = .37, p < .001$), and psychological distress ($r = .33, p < .001$). However, threat was negatively linked to positive attitudes toward therapy ($r = -.14, p = .006$) and time spent reading help-seeking information ($r = -.16, p = .002$). Internal consistency for this measure in this sample was high, $\alpha = .90$.

Negative mood. The negative affect subscale of the Positive and Negative Affect Schedule (Watson et al., 1988) assessed state negative mood after participants had completed study procedures. The 10-item subscale measures negative mood with emotional labels such as distressed, upset, and scared (Watson et al., 1988). Items are rated on a 5-point Likert

scale where 1 = *very slightly or not at all* and 5 = *extremely*, with higher scores indicating greater experience of the corresponding affect. Previous support for the validity of the subscale has indicated relationships with other prominent measures of negative mood (Watson et al., 1988). Previous internal consistency scores in undergraduate samples for negative mood have ranged from .84 to .87 (Watson et al., 1988), with similar internal consistency score for the present sample, $\alpha = .90$. See Appendix L.

Time spent reading information. The time participants spent reading help-seeking information was recorded by survey software, and constituted a behavioral indicator of threat-avoidance, with less time spent reading indicating greater avoidance of threatening information.

Self-stigma of seeking help. The *Self-Stigma of Seeking Help* (SSOSH; Vogel et al., 2006) scale was used to measure participants' self-stigma related to seeking professional psychotherapy. The 10-item scale includes items such as "I would feel inadequate if I went to a therapist for psychological help," "Seeking psychological help would make me feel less intelligent," and "If I went to a therapist, I would be less satisfied with myself" (Vogel et al., 2006, p. 328). Five items are reversed scored. Items are rated on a 5-point Likert scale where 1 = *strongly disagree* and 5 = *strongly agree*, with higher scores corresponding to higher self-stigma related to seeking psychotherapy. Previous support for the validity of the Self-Stigma of Seeking Help Scale has indicated positive relationships with the public stigma of seeking psychological help and anticipated risks of disclosing in therapy, and negative relationships with attitudes toward seeking professional psychotherapy and intentions to seek therapy (Vogel et al., 2006). Internal consistency has ranged from .86 to .90 in

undergraduate samples (test-retest, .72; Vogel et al., 2006). The present sample demonstrated similar consistency, $\alpha = .89$. See Appendix M.

Attitudes toward therapy. Positive attitudes toward therapy were assessed using the Inventory of Attitudes Toward Seeking Professional Psychological Help Scale (ATSPPHS; Mackenzie et al., 2004). This scale is composed of 24 items that are answered on a 5-point scale with responses ranging from 0 = *disagree* to 4 = *agree*. As shown in Appendix N, the IATSPPHS includes items such as “If I were experiencing a serious psychological problem at this point in my life, I would be confident that I could find relief in psychotherapy.” Fifteen items are reverse-scored so that higher scores indicate more positive attitudes. Previous studies support the validity of the scale, with scores on the IATSPPHS being positively associated with previous use and intentions to utilize mental health services (Mackenzie et al., 2004). Internal consistency of this scale has ranged from .79 to .82 in undergraduate samples (Fischer & Farina, 1995; Pederson & Vogel, 2007), with similar internal consistency in this sample, $\alpha = .77$.

Psychological Distress. The *Self-Administered K6+* (Kessler et al., 2002) is a 6-item measure of psychological distress that was adapted developed for use in the U.S. National Health Interview Survey (see Appendix P). Participants read the sentence stem, “During the past 30 days, about how often did you feel...” and rate answers such as “nervous” and “hopeless” on a 5-point Likert scale where 1 = *all the time* and 5 = *none of the time*. A clinical score is calculated by converting the scale items coded 0 = *none of the time* and 4 = *all of the time*, and summing all six scores. Clinical scores above 5 indicate moderate mental distress, appropriate for seeking help (Prochaska, Sung, Max, Shi, & Ong, 2012), and clinical scores above 13 indicate the likely presence of a serious mental illness, defined as a DSM-IV

disorder occurring in the last 12 months. Previous research has provided support for the validity of the K6+ due to its ability to discriminate between clinical and non-clinical populations, as well as internal reliability with Cronbach's alpha values ranging from .89 to .92 (Kessler et al., 2002). In the present sample, internal consistency was high, $\alpha = .85$.

Procedures

After receiving approval from Iowa State University's institutional review board (Appendix B), participants were invited to confidentially complete an online survey about college student mental health in exchange for class credit (Appendix B). Online sessions were designed to last between 50 and 60 minutes. Upon signing up, participants provided informed consent online (Appendix C), and were then randomly assigned to complete one of 4 possible self-affirmation activities, shown in Figure 2: values-affirmation, social-affirmation, values and social-affirmation, or no-affirmation. All affirmation activities were timed by survey software in order to keep time-spent completing activities equal.

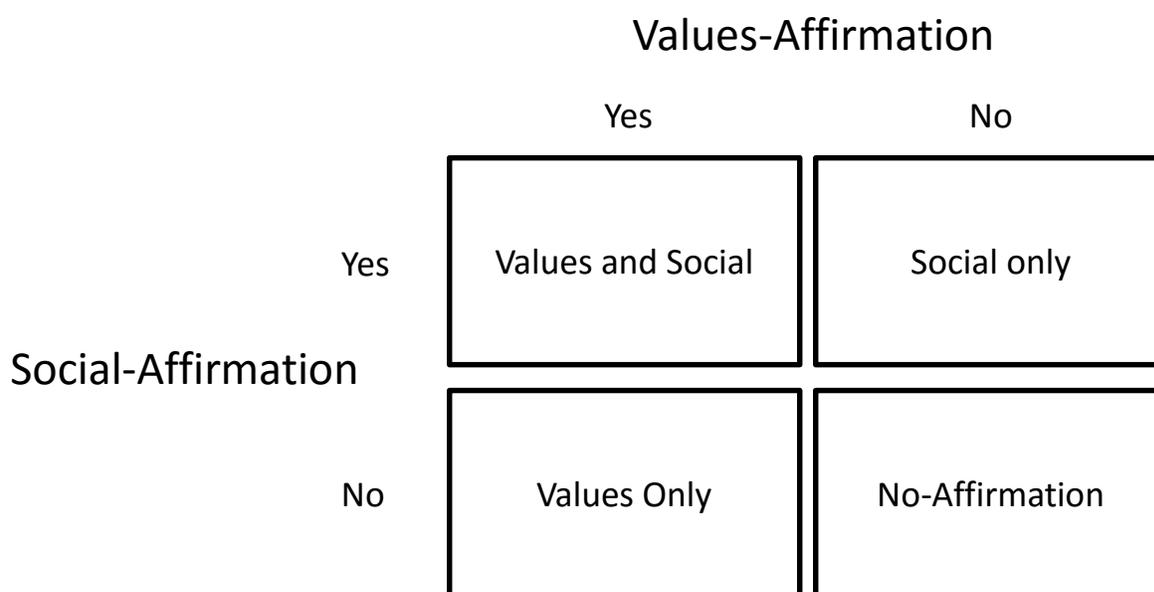


Figure 2. *Experimental manipulations of self-affirmation.*

A review of self-affirmation manipulations (McQueen & Klein, 2006) found that 21 of 69 studies had employed a personal value or characteristic scale to elicit self-affirming thoughts. Despite being the most commonly used value scale, the Allport–Vernon–Lindzey values scale (Allport, Vernon, & Lindzey, 1960) has been criticized for antiquated language (McQueen & Klein, 2006). As shown in Appendix E, participants assigned to *values-affirmation* rank ordered 14 personal values and characteristics, which were adapted from Schwartz’s (1992) values inventory. Values such as “sense of belonging” or “friendship” that explicitly imply the presence of social relationships were omitted so that values-affirmation would not directly make social relationships salient. To optimize the activity for mobile devices, participants first rated 7 values on a 1-7 scale where 1 = *most important value* and 7 = *least important value*, and then rated a second set of 7 values in the same manner. Next, survey software presented participants with the two most important values they chose from each set of 7 values, and participants were instructed to choose which of those two values was most important to them. Finally, participants were encouraged to reflect on the personal importance of their most important value by rating on 1-7 scales the degree to which the value is important to them, the value guides their behavior, how proud they are of the value, the extent to which the value is something they like about themselves.

Participants assigned to *social-affirmation* (see Appendix F) were asked to list two people or groups of people with whom they feel that they really belong (Lambert et al., 2013). Participants were then asked to describe the type of relationship with each person they listed and how long they have known them. Next, participants rated on a 1-7 scale how positive, important, and meaningful the relationship is, and also how much the relationship makes them feel like they belong.

Participants assigned to *values and social-affirmation* completed the values-affirmation task followed by the social-affirmation task.

In line with other experimental manipulations designed to provide similar tasks to self-affirmation manipulations that are non-self-focused (McQueen & Klein, 2006), participants assigned to *no-affirmation* level were asked to alphabetize a list of 24 common last names, which were not in alphabetical order (Appendix D). Participants then rated aspects of the activity on a 1-7 scale that included how out of order the names were, how enjoyable the task was, how difficult the task was, and how quickly they believe they completed the task.

Next, survey software randomly assigned participants to one of two information levels: *reassuring* or *standard*. To encourage participants to attend to the information, they were notified that there would be a brief quiz after the reading material, and that correct responses will be needed to continue with the survey. *Reassuring information* described the benefits of university counseling services as a way of coping with normal college stressors. This information was adapted from materials developed by Levine, Stoltz, & Lacks (1992) as well as Iowa State University's Student Counseling Center Website (Iowa State University, 2015), and can be found in Appendix G. *Standard information* described the personal and professional costs of having an untreated mental illness, provided susceptibility information as well as information about the benefits of utilizing university counseling services. This article was adapted from information from the website of National Institute of Mental Health (NIMH, 2014), and can be found in Appendix I. Both articles contain 361 words.

After reading the information, participants completed a two-question quiz over the respective article's content. Quizzes for both reassuring and standard information can be

found in Appendices H and J, respectively. Correct quiz responses allowed participants to complete outcome measures, and incorrect responses redirected participants to reread the article and reminded them that correct responses on the quiz are needed to continue with the survey. If participants failed the quiz after retaking the quiz a second time they were allowed to continue the survey without retaking the quiz again. Eight participants failed the quiz the first time, and five of those eight failed the quiz again on their second try.

Participants then completed two self-report assessments of threat: help-seeking information threat (Witte, 2013), and negative mood (Watson et al., 1988), with time spent reading the information recorded by survey software. Next, participants completed two assessments of help-seeking beliefs: self-stigma (SSOSH; Vogel et al., 2006) and attitudes toward therapy (ATSPPHS; Mackenzie, Knox, Gekoski, & Macaulay, 2004). These four self-report measures can be found in Appendices K-N.

In line with manipulation checks from Napper et al. (2009), participants completed four items to assess whether the self-affirmation manipulation encouraged awareness of personal values (2 items), social belonging (2 items), and identity salience (1 item; see Appendix O). Participants then provided demographic information (Appendix P) and completed an assessment of psychological distress (K6+; Kessler et al., 2002), the latter of which is found in Appendix Q. Manipulation checks, demographics, and psychological distress were all assessed after the outcome variables of interest to prevent these measures from influencing the experimental manipulations. After this, participants were provided with help-seeking information, and reminded that they would be invited to complete a follow-up survey in approximately two weeks (Appendix R).

Ten days after participants completed the initial survey online, they received an email with a link to complete a follow-up survey. If participants did not complete the follow-up survey within two weeks of completing the initial survey they were contacted two additional times with reminders to complete the follow-up survey. One additional reminder was sent at two weeks posttest, with the other sent at three weeks posttest if needed. In this follow-up survey, participants were not subject to any experimental manipulations, and completed the same outcome measures as in the initial survey except for the measure assessing help-seeking information threat. Participants also provided demographic information for data matching purposes, and were then presented with an online debriefing statement (Appendix S).

Results

Cross-Sectional Analyses

Missing Data and Descriptive Analyses. First missing data were examined. At time 1, missing data ranged from 0-1.3% across all items. Mean values were imputed for missing items, an appropriate method for handling low levels of missing data (Parent, 2013). Descriptive statistics for measured Study 1 variables are displayed in Table 1.

Table 1. Means and Standard Deviations of Main Study Variables Across Affirmation Levels

Variable	No-affirmation (<i>n</i> = 97)	Values Only (<i>n</i> = 100)	Social Only (<i>n</i> = 86)	Values and Social (<i>n</i> = 101)
Time Intervention	250.62 (82.67) _a	203.87 (89.18) _b	143.14 (67.81) _c	297.51 (99.95) _d
Distress	7.92 (4.96) _a	7.77 (5.19) _a	7.61 (4.49) _a	7.10 (4.20) _a
Info threat	3.16 (1.01) _{ab}	3.06 (0.93) _{ab}	3.43 (1.11) _{ab}	2.93 (0.91) _a
Negative mood	1.88 (0.79) _{ab}	1.64 (0.65) _{ab}	1.78 (0.76) _{ab}	1.53 (0.58) _b
Time Reading Info	93.74 (69.26) _a	107.79 (80.59) _a	99.23 (82.30) _a	99.14 (62.77) _a
Self-Stigma	2.66 (0.76) _a	2.63(0.74) _a	2.70 (0.71) _a	2.63 (0.79) _a
Attitudes	2.38 (0.51) _a	2.46 (0.48) _a	2.46 (0.49) _a	2.42 (0.55) _a

Note: Columns with different subscripted letters indicate statistically significant differences, $p < .05$.

K6+ scores for the present sample indicated that the average participant was experiencing moderate distress ($M = 7.60$, $SD = 4.73$, $Range = 0.0 - 24.0$). Epidemiological

research on the K6+ measure found that scores above 5 indicate moderate psychological distress appropriate for seeking help, and scores above 13 suggest the likely presence of a DSM–IV disorder occurring in the last 12 months (Prochaska et al., 2012). There were 108 participants (28.1%) who reported low distress (scores in the range of 0-4), 213 (55.5%) reported moderate distress (scores in the range of 5-12), and 63 (16.4%) reported severe distress.

Manipulation Checks. To test whether the self-affirmation manipulation behaved as intended, 2 two-way ANOVAs were conducted with SPSS software (IBM, 2014) with values-affirmation and social-affirmation specified as the independent variables, and assessments of the salience of values and social belonging specified as dependent variables.

Salience of values. Results indicated that values-affirmation, social-affirmation, and values and social-affirmation did not significantly differ in salience of values from each other, but did differ from the no-affirmation group. There were significant main effects for values-affirmation ($p < .001$), social-affirmation ($p < .001$), and an interaction of values and social-affirmation ($p < .001$). As shown in Figure 3, an examination of simple main effects indicated no differences between participants who completed values-affirmation only

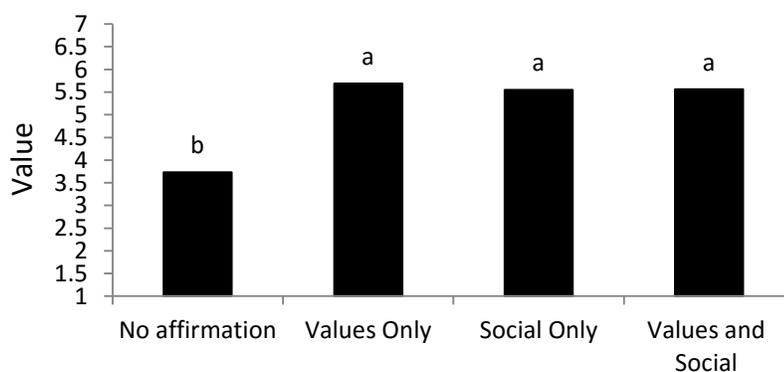


Figure 3. Salience of personal values across affirmation levels. Affirmation levels with different letters from one another indicate statistically significant differences, $p < .05$.

($M = 5.69$, $SE = 0.13$), social-affirmation only ($M = 5.55$, $SE = 0.14$), and values and social-affirmation ($M = 5.56$, $SE = 0.13$), all $ps > .46$, however all three affirmations led to significantly greater salience of personal values than the no-affirmation group ($M = 3.73$, $SE = 0.13$), $ps < .001$.

Salience of social belonging. Results indicated that there were significant main effects for values-affirmation ($p < .001$), social-affirmation ($p < .001$), and the interaction of values and social-affirmation ($p < .001$). As shown in Figure 4 below, an examination of simple main effects indicated that social-affirmation only ($M = 6.04$, $SE = 0.13$) and the combination of values and social-affirmation ($M = 5.82$, $SE = 0.12$) both resulted in the greatest salience of social belonging, with values-affirmation only ($M = 4.84$, $SE = 0.12$) resulting in significantly lower salience of social belonging than both interventions that included social-affirmation (both $ps < .001$). No-affirmation ($M = 3.65$, $SE = 1.23$) resulted in

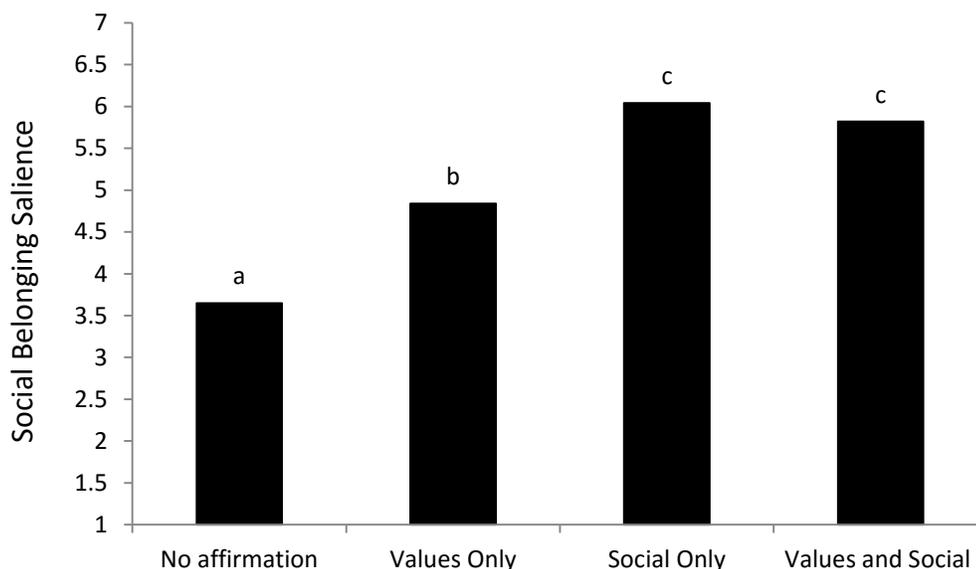


Figure 4. Salience of social belonging across affirmation levels. Affirmation levels with different letters from one another indicate statistically significant differences, $p < .05$.

the lowest social belonging salience when compared to the three other affirmation manipulations (all $ps < .001$). There was no significant difference between social-affirmation only and values and social-affirmation, $p = .22$.

Cross-Sectional Effects of Self-Affirmation and Information on Threat. It was hypothesized that values-affirmation, social-affirmation, and reassuring help-seeking information would decrease threat-responses. To examine the hypothesis, a multivariate analysis of covariance (MANOVA) was conducted with values-affirmation, social-affirmation, and information specified as independent factors. Indicators of threat were specified as outcome variables: help-seeking information threat, negative mood, and time spent reading help-seeking information.

Results partially supported the hypothesis. The MANOVA indicated a significant multivariate main effect for values-affirmation ($F_{5,373} = 5.32, p = .001$) and information ($F_{5,373} = 8.18, p < .001$), but there was not a significant multivariate effect for social-affirmation ($F_{5,373} = 1.20, p = .311$). There was a marginally statistically significant multivariate two-way interaction effect for values \times social ($F_{5,373} = 2.61, p = .051$), but there were no other statistically significant multivariate interaction effects, all $ps > .14$. To examine the nature of the significant multivariate effects, ANOVA tests were conducted.

Main Effect of Information. Between-subjects ANOVA tests indicated that there was a statistically significant main effect for information on help-seeking information threat ($F_{1,375} = 24.03, p < .001$) but not on negative mood or time spent reading information (both $ps > .32$). Participants reading reassuring information ($M = 2.91, SD = 0.87$) reported lower help-seeking information threat compared to those reading standard information ($M = 3.39, SD = 1.07$). The mean difference between these conditions was equal to -0.49 ,

95% $CI_{diff} = [-0.68, -0.29]$, providing evidence that the experimental information manipulation behaved as intended, with reassuring information rated as less threatening.

Main Effect of Values-Affirmation. Between-subjects ANOVA tests indicated that there were statistically significant effects for values-affirmation on help-seeking information threat ($F_{1,375} = 9.48, p = .002$) and negative mood ($F_{1,375} = 11.86, p = .001$), but not on time spent reading information ($F_{1,375} = 0.63, p = .428$). As displayed in Table 2, compared to those completing no-affirmation, those completing values-affirmation demonstrated significantly lower help-seeking information threat and negative mood.

Table 2. Pairwise Comparisons of Main Effects of Values-Affirmation

Dependent Variable	Values	Mean (SE)	Mean Difference (No Values – Values)
Help-seeking information threat	No Values	3.30 (0.07)	0.30**, 95% CI = [0.11, 0.50]
	Values	3.00 (0.07)	
Negative mood	No Values	1.83 (0.05)	0.25**, 95% CI = [0.11, 0.39]
	Values	1.58 (0.05)	
Time Reading	No Values	96.52 (5.48)	-6.02, 95% CI = [-8.88, 20.91]
	Values	103.44 (5.23)	

** $p < .01$.

Interaction Effects. Despite non-significant multivariate interaction effects, results of an exploratory between-subjects ANOVA indicated that there was a significant values \times social interaction effect on help-seeking information threat ($F_{1,375} = 5.35, p = .021$), but not on negative mood or time spent reading, $ps > .34$. Figure 5 below depicts the nature of this interaction effect; those who completed both values and social-affirmation ($M = 2.91, SE = 0.96$) reported less help-seeking information threat compared to people who completed social-affirmation only ($M = 3.44, SD = 1.01$), $M_{diff} = -0.53, 95\% CI = [-0.81, -0.25]$. Yet, there was no difference between those who only completed values-affirmation and those who completed no-affirmation, $M_{diff} = -.08, 95\% CI = [-0.20, 0.35]$.

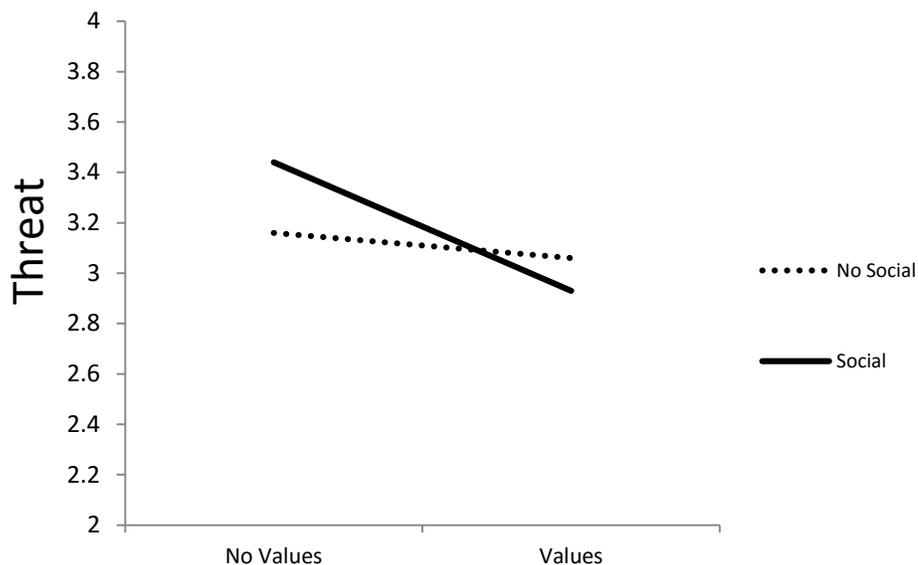


Figure 5. Help-seeking information threat across values-affirmation and social-affirmation.

Between-subjects ANOVA tests also indicated that there was a statistically significant three-way values×social×information interaction effect on time spent reading information ($F_{1,375} = 5.37, p = .021$), but not on help-seeking information threat or negative mood, $p_s > .48$. As shown in Figure 6, simple main effects indicated that those completing values-affirmation spent more time reading information than people completing no-affirmation, but only when reading reassuring information ($M_{diff} = 32.42, 95\% CI = [3.63, 61.21]$).

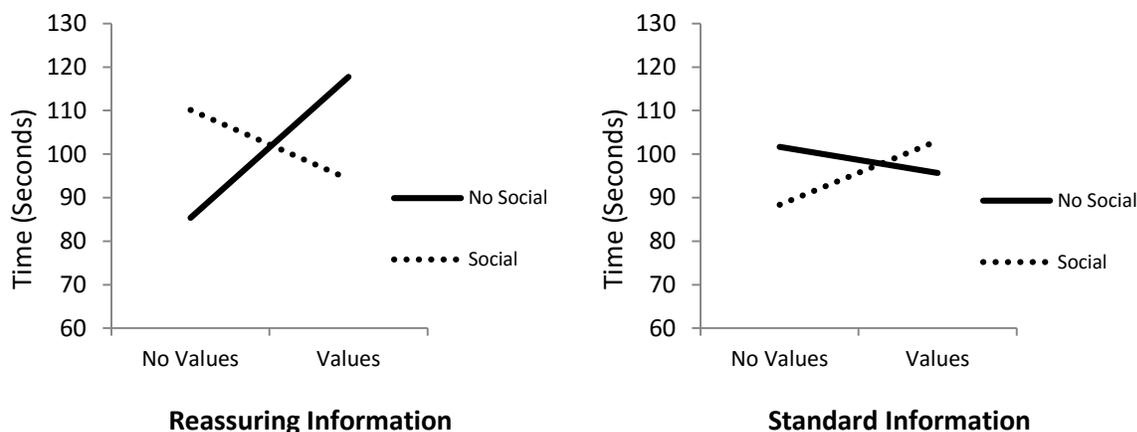


Figure 6. Time spent reading help-seeking information across experimental factors of values-affirmation, social-affirmation, and information.

Cross-Sectional Effects of Experimental Factors on Help-Seeking Variables.

It was hypothesized that values-affirmation, social-affirmation, and reassuring help-seeking information would increase positive help-seeking beliefs. To test the hypothesis, a multivariate analysis of variance (MANOVA) was conducted with values-affirmation, social-affirmation, and information specified as independent factors. Help-seeking beliefs—self-stigma of seeking help and attitudes toward therapy were specified as outcome variables.

Results did not support the hypothesis. The MANOVA indicated no significant multivariate main effects for any of the experimental factors, $ps > .34$. Additionally, there were no significant multivariate main effects for any two-way interaction effects ($ps > .13$), and there was not a statistically significant multivariate three-way interaction effect ($p > .10$).

Exploratory Cross-Sectional Analyses

Even though self-affirmation did not have direct effects on self-stigma and attitudes toward therapy, it is possible that self-affirmation may elicit indirect effects on self-stigma and attitudes toward therapy insofar as it reduces help-seeking information threat. When therapy is viewed as threatening, individuals are more likely to self-stigmatize and exhibit more negative attitudes (Bayer & Peay, 1997; Codd & Cohen, 2003; Hammer & Vogel, 2013; Mo & Mak, 2009; Schomerus, Matschinger, & Angermeyer, 2009; Vogel et al., 2006), which suggests that reducing threat associated with therapy might buffer against these processes (Lannin et al., 2016). Therefore, the relationships between self-affirmation, help-seeking information threat, self-stigma, and attitudes were explored by utilizing full information maximum likelihood approach (i.e., ML estimator in MPLUS 6). As shown in

Figure 7, social-affirmation, values-affirmation, and information were specified to predict help-seeking information threat¹. In turn, help-seeking information threat, predicted self-stigma, the latter of which predicted attitudes toward therapy.

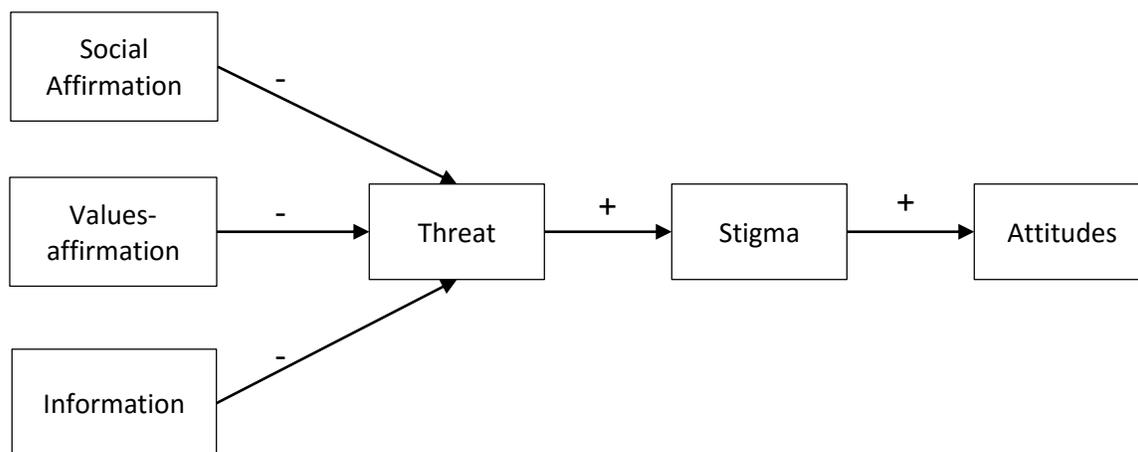


Figure 7. Fully mediated theoretical model. Social = Social-affirmation; Values = Values-affirmation; Threat = Help-seeking information threat; Self-Stigma = SSOSH; Attitudes = ATSPPHS-SF. Social-affirmation and Values-affirmation are dummy coded, such that 0 = *No* and 1 = *Yes*. Information is dummy coded, such that 0 = *Standard Information* and 1 = *Reassuring Information*.

** $p < .01$, *** $p < .001$.

To aid interpretation of results, all continuous predictor variables were standardized in MPLUS. Values-affirmation and social-affirmation were dummy coded such that 0 = *No* and 1 = *Yes*, and Information was dummy coded such that 0 = *Reassuring Information* and 1 = *Standard Information*. Four indices and their cutoff points were utilized to assess goodness of fit for all models: the Comparative Fit Index (CFI; values of .95 or greater), the Tucker–Lewis Index (TLI; values of .95 or greater), the root mean square error of approximation (RMSEA; values of .06 or less), and the Standardized Root Mean Square Residual (SRMR; values of .08 or less; Hu & Bentler, 1999).

¹ Interaction terms of experimental factors were not included in the model because there were non-significant multivariate interaction effects on threat outcome variables.

The full mediation model demonstrated a good fit to the data, $\chi^2 (7, N = 384) = 4.36, p = .738; CFI = 1.000; TLI = 1.036; RMSEA = .000, 90\% CI = [.000, .045], SRMR = .019$. In order to rule out alternative models (Martens, 2005), we compared the full mediation model against four alternative models. First, to rule out the possibility of mediated moderation, we compared the full mediation model to mediated moderation model in which 3 two-way interaction terms and the three-way interaction term for all experimental factors were added to the full mediation model as predictors of help-seeking information threat. This model demonstrated adequate fit to the data, $\chi^2 (15, N = 384) = 17.75, p = .276; CFI = .980; TLI = .967; RMSEA = .022, 90\% CI = [.000, .055], SRMR = .017$. However, none of the interaction terms were statistically significant, all $ps > .24$, and thus we retained the full mediation model. Next, to rule out the possibility of partial mediation, we compared the full mediation model against three partial mediation models: (a) a model adding a path from threat to attitudes and (b) a model adding direct paths from experimental factors to self-stigma, and (c) a model adding direct paths from experimental factors to attitudes. Chi-square difference tests of between the full mediation and the three partial mediation models indicated that none of the partial mediation models significantly differed from the full mediation model, all $ps > .24$. Therefore, for parsimony we retained the hypothesized full mediation model.

Results provided support for the notion that self-affirmation's reduction of threat reduced self-stigma, the latter of which was associated with increased positive attitudes. Values-affirmation was a significant negative predictor of help-seeking information threat ($\beta = -0.29, SE = 0.10, p = .003, 95\% CI \text{ for } \beta = [-0.49, -0.10]$). Threat, in turn was as a significant predictor of self-stigma ($\beta = 0.14, SE = 0.05, p = .005, 95\% CI \text{ for } \beta = [0.03,$

0.18]), and self-stigma was a significant negative predictor of attitudes ($\beta = -0.47$, $SE = 0.03$, $p < .001$, 95% CI for $\beta = [-0.38, -0.26]$). Furthermore, there were statistically significant indirect effects of values-affirmation on self-stigma through threat ($\beta = -0.03$, $SE = 0.02$, $p = .042$, 95% CI for $\beta = [-0.06, 0.00]$), and from Values-affirmation through threat and self-stigma on attitudes ($\beta = 0.01$, $SE = 0.01$, $p = .046$, 95% CI for $\beta = [0.00, 0.02]$). See Figure 8.

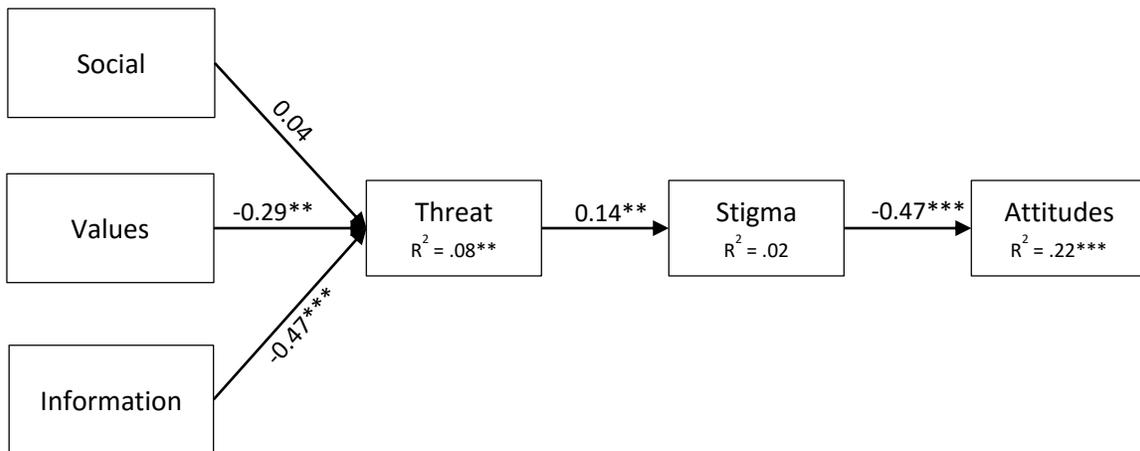


Figure 8. Fully mediated final model.

Social = Social-affirmation; Values = Values-affirmation; Threat = Help-seeking information Threat; Self-Stigma = SSOSH; Attitudes = ATSPPHS-SF. Social-affirmation and Values-affirmation are dummy coded, such that 0 = *No* and 1 = *Yes*. Information is dummy coded, such that 0 = *Standard Information* and 1 = *Reassuring Information*.

** $p < .01$, *** $p < .001$.

Results also provided support for the notion that reading reassuring information reduces help-seeking information threat, which in turn reduces self-stigma and increases positive attitudes. Information was a significant negative predictor of help-seeking information threat ($\beta = -0.47$, $SE = 0.10$, $p < .001$, 95% CI for $\beta = [0.27, 0.66]$). As described above, threat, in turn was a significant predictor of self-stigma, and self-stigma was a significant negative predictor of attitudes. Furthermore, there were statistically significant indirect effects of information on self-stigma through threat ($\beta = -0.07$, $SE = 0.03$, $p = .015$, 95% CI for $\beta = [0.01, 0.09]$), and from information on attitudes through threat and self-stigma ($\beta = 0.02$, $SE = 0.01$, $p = .019$, 95% CI for $\beta = [-0.03, 0.00]$).

Longitudinal Analyses

Missing data. At time 2, there was no item-level missing data; however of the 384 participants with data at time 1 only 225 (59%) completed data at time 2. There were no significant differences between participants who did not complete time 2 compared to those who completed data at both time 1 and time 2 on any of the time 1 outcome variables: help-seeking information threat, negative mood, time spent reading materials, self-stigma, or attitudes, $ps > .25$. However, those who dropped out prior to completing time 2 had marginally lower psychological distress at the end of time 1 than those who completed both time points, $M_{diff} = 0.13$, $SE = 0.07$, $p = .069$, $95\% CI_{diff} = [-0.26, 0.01]$. This may suggest that some individuals who were less distressed did not find the survey as personally relevant. A logistic regression analysis indicated that none of the three experimental factors had any effect on whether or not participants participated in time 2, all $ps > .39$.

Main longitudinal analyses. To account for missing data due to attrition longitudinal analyses utilized full information maximum likelihood (FIML) methodology in MPLUS 6. Two separate models were tested to assess longitudinal effects on both help-seeking belief variables: self-stigma of seeking help and attitudes toward therapy. Assessments of time spent reading, help-seeking information threat, and negative mood were not assessed at time 2 because these measures assessed immediate reactions participants had to informational materials presented during time 1, and there were no experimental manipulations present at time 2. As shown in Figure 9 below, each model was specified such that experimental manipulations (values-affirmation, social-affirmation, and information) predicted the respective outcome variable at time 1 and time 2.

Additionally, the outcome variable at time 1 predicted the respective outcome variable at time 2 (e.g., self-stigma at time 1 predicted self-stigma at time 2). Statistically significant direct effects from an experimental manipulation to an outcome variable at time 2 would demonstrate that the experimental manipulation directly influenced the outcome variable two weeks after the manipulation, controlling for other experimental manipulations and the effect of the experimental manipulation at time 1 on that respective outcome variable. Statistically significant indirect effects from the experimental manipulation to an outcome variable at time 2 would demonstrate that the experimental manipulation influenced the outcome variable two weeks after the manipulation due to its effect on the outcome variable at time 1.

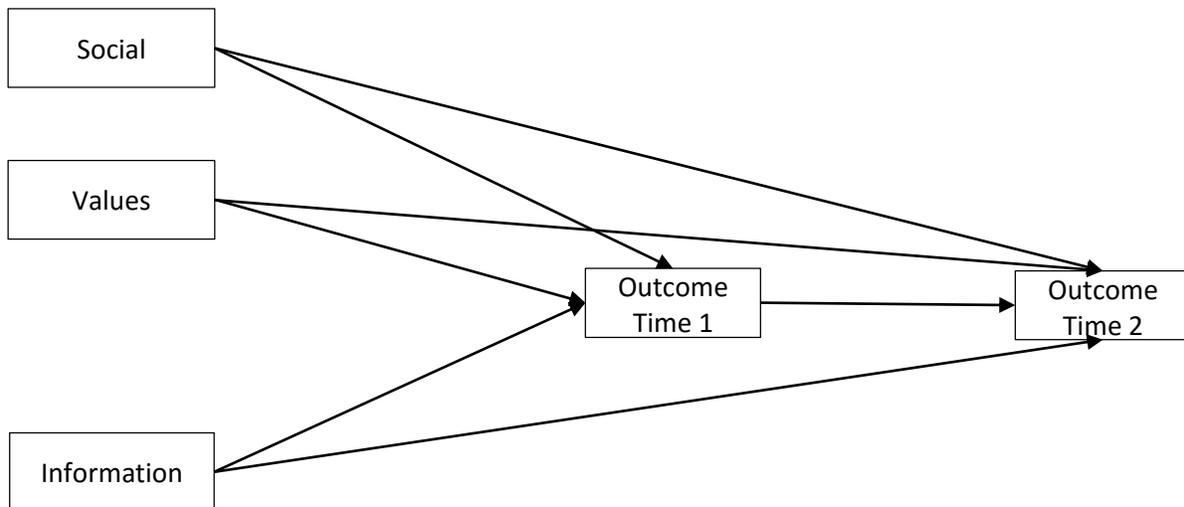


Figure 9. Theoretical longitudinal model depicting main effects.

Social = Social-affirmation; Values = Values-affirmation. Social-affirmation and Values-affirmation are dummy coded, such that 0 = *No* and 1 = *Yes*. Information is dummy coded, such that 0 = *Reassuring Information* and 1 = *Standard Information*.

Fit indices for both models testing the longitudinal main effects of the experimental factors (self-stigma and attitudes) were identical and showed perfect fit as the models were saturated, that is models estimated all the associations among the measures. However, results indicated that there were no longitudinal main effects for the experimental manipulations on self-stigma (all $ps > .38$) or attitudes (all $ps > .43$) at time 2. There were also no statistically

significant indirect effects of experimental manipulations on time 2 variables through time 1 variables, for either self-stigma ($p = .523$) or attitudes ($p = .654$). Both models only contained one statistically significant path each: (1) self-stigma at time 1 predicted self-stigma at time 2 ($\beta = .76, p < .001$) and (2) attitudes at time 1 predicted attitudes at time 2 ($\beta = .58, p < .001$).

To examine the possibility of interaction of experimental factors, two additional models were specified identical to those just described. As depicted in Figure 10 both

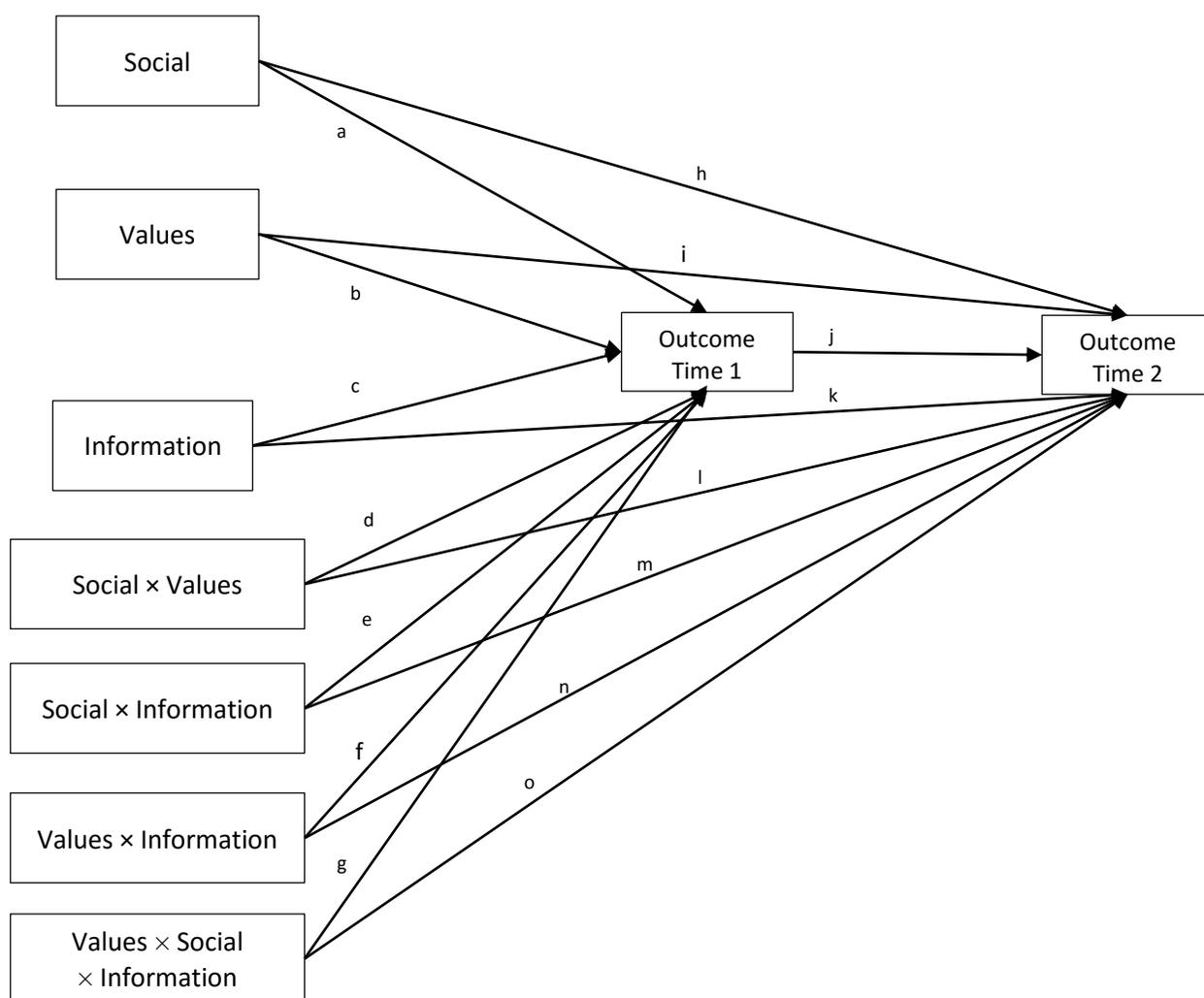


Figure 10. Theoretical longitudinal model depicting main effects and interaction effects. Social = Social-affirmation; Values = Values-affirmation. Social- and Values-affirmation are effects coded, such that -1 = *No* and 1 = *Yes*. Information is effects coded, such that -1 = *Reassuring Information* and 1 = *Standard Information*.

models included 3 two-way interaction terms and one three-way interaction term as predictors of both respective outcome variable, at both time 1 and time 2. As shown in Table 3 below, the interactions of experimental manipulations did not directly predict self-stigma at time 2 (all $ps > .53$) or attitudes at time 2 (all $ps > .11$). There were also no significant indirect effects of the interactions between experimental manipulations on time 2 attitudes through time 1 attitudes (all $ps > .475$).

Table 3. Path Estimates for Longitudinal Self-Stigma and Attitude Models with Interactions

Path	Self-Stigma Model		Attitude Model	
	Estimate (SE)	p-value	Estimate (SE)	p-value
a	0.02 (0.05)	.752	.02 (0.05)	.662
b	-0.03 (0.05)	.544	.02 (0.05)	.712
c	0.03 (0.05)	.609	-.07 (0.05)	.145
d	-0.01 (0.05)	.812	-.05 (0.05)	.359
e	-0.10 (0.05)	.042	.05 (0.05)	.373
f	-0.03 (0.05)	.505	-.04 (0.05)	.453
g	0.10 (0.05)	.061	.01 (0.05)	.920
h	0.01 (0.04)	.866	-.04 (0.06)	.495
i	-0.04 (0.04)	.345	.00 (0.06)	.980
j	0.76 (0.04)	<.001	.58 (0.06)	<.001
k	-0.02 (0.04)	.608	.05 (0.06)	.412
l	-0.01 (0.04)	.781	.02 (0.06)	.775
m	0.00 (0.04)	.941	.09 (0.06)	.111
n	-0.01 (0.04)	.900	.01 (0.06)	.803
o	0.03 (0.04)	.533	-.05 (0.06)	.350

However, there was a statistically significant indirect social-affirmation \times information interaction effect on self-stigma at time 2, through self-stigma at time 1 ($\beta = -0.08$, $SE = 0.05$, $p = .041$, 95% CI for $\beta = [-0.15, 0.00]$). The interaction of social-affirmation \times information was associated with greater self-stigma at time 1 ($\beta = -0.10$, $SE = 0.05$, $p = .042$), and in turn, self-stigma at time 1 was associated with self-stigma at time 2 ($\beta = 0.76$, $SE = 0.03$, $p < .001$). Path coefficients of this indirect effect were multiplied by the appropriate coefficients

to obtain predicted scores for self-stigma at time 2. As Figure 11 depicts, predicted self-stigma at time 2 was lowest for (a) those who completed social-affirmation and read standard information and (b) those who completed no-affirmation and read reassuring information.

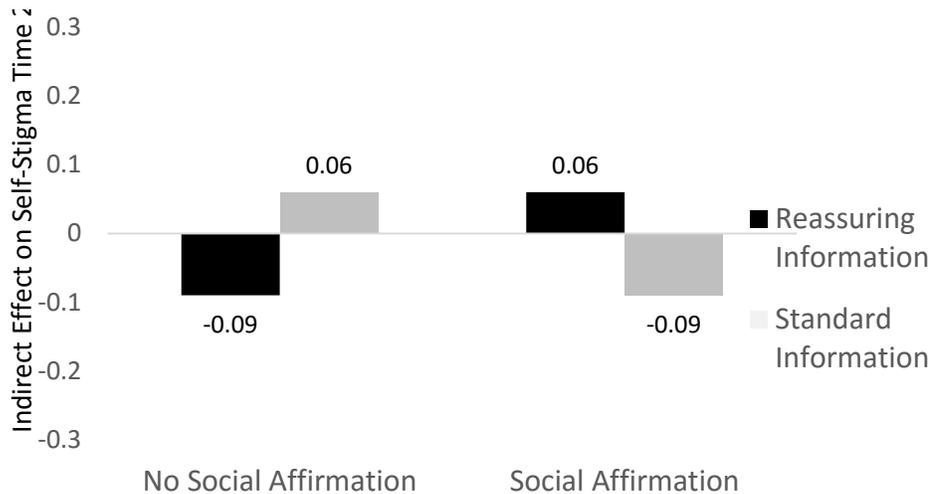


Figure 11. Predicted self-stigma at time 2 for social-affirmation and information.

Discussion Study 1

Study 1 tested important factors related to the development of a brief online self-affirmation intervention; specifically examining two approaches for manipulating self-affirmation (values-affirmation and social-affirmation), as well as the type of help-seeking information presented after the self-affirmation manipulation (reassuring vs. standard). It was hypothesized that values-affirmation, social-affirmation, and reassuring help-seeking information would decrease threat and increase positive help-seeking beliefs. Results partially supported the hypotheses. Values-affirmation reduced indicators of threat-responses—negative mood and help-seeking information threat—but did not increase the amount of time individuals spent reading help-seeking information.

In line with predictions of self-affirmation theory (Steele, 1988), this result provides evidence that the novel values-affirmation manipulation developed and tested in Study 1

produced effects predicted by self-affirmation theory. That is, values-affirmation was a self-affirming activity that bolstered self-worth, thereby reducing the identity-threat that was prompted by subsequent help-seeking information. Study 1 demonstrates that a brief activity—wherein individuals rank-order personal values and rate the personal relevance of those values—can be efficacious in producing results in line with more lengthy writing interventions designed to elicit self-affirmation (Lannin et al., 2013; McQueen & Klein, 2006). This also suggests that the brief value-affirmation activity tested in Study 1 is appropriate for use in applied settings where demands on potential patients must be kept low, and could successfully be delivered in an online context. In line with other findings that online activities can have self-affirming effects (Toma & Hancock, 2013), the present results highlight the benefit of developing and testing the effectiveness of values-affirmation intervention in ‘real world’ settings.

Contrary to predictions, social-affirmation did not have a statistically significant main effect on threat-responses, suggesting that affirming close social relationships alone does not appear to be an effective strategy for eliciting self-affirmation. Additionally, there was evidence that threat was significantly higher for individuals only completing social-affirmation compared to those completing both values-affirmation and social-affirmation. It is possible that the social-affirmation intervention in Study 1—which facilitated reflection on close personal relationships—could have highlighted relationship-fears for some participants rather than bolstering a sense of belonging and greater security in their self-worth. This may be due to the fact that, compared to personal values, the status of close personal relationships is an extrinsic indicator of self-worth that is subject to change (Quinn & Crocker, 1998).

Overall, this conceptualization is in line with findings by Schimel et al. (2004), which

indicated that reflecting on intrinsic personal characteristics was more effective than focusing on extrinsic characteristics in reducing fears of social rejection.

In sum, this suggests that a key aspect of manipulating self-affirmation may be to encourage reflection on intrinsic characteristics such as personal values rather than on interpersonal domains such as one's close social relationships. Additionally, findings from Study 1 help provide a more complete interpretation of the post-hoc analysis of Lannin and colleagues' (2013) data. The current results imply that individuals who engage in values-affirmation and find this activity to be self-affirming, are more likely to subsequently reflect upon positive social relationships to reinforce their intrinsic values, whereas reflecting on positive social relationships alone is not self-affirming for most individuals.

In line with hypotheses, reading reassuring information was found to have similar effects to the values-affirmation manipulation in Study 1. That is, compared to those who read standard information, individuals who read reassuring help-seeking information experienced less help-seeking information threat, as well as less negative mood. This is not surprising. Unlike values-affirmation—which is theorized to elicit self-affirmation—reassuring information is simply inherently less threatening. This suggests that whether or not help-seeking interventions apply self-affirmation approaches, such interventions may benefit from utilizing more reassuring messages, particularly if the interventions target groups and individuals whose identities are especially threatened by the prospect of mental health treatment. Although not conclusive, there is some evidence in Study 1 that the combination of values-affirmation and reassuring information may be effective in reducing threat. Namely, if help-seeking information was reassuring, individuals completing values-affirmation spent significantly more time reading that information than people who did no

self-affirming activity. This provides some evidence that the combination of values-affirmation with reassuring help-seeking information may elicit more engagement with informational messages because identity-threat is minimized.

Evidence did not support Study 1's second set of hypotheses, namely that values-affirmation, social-affirmation, and reassuring information would directly increase positive help-seeking beliefs. There were no statistically significant main effects for any of the independent variables on either self-stigma of seeking help or attitudes toward therapy. However, exploratory analyses provided evidence that self-affirmation elicited indirect effects to reduce self-stigma and increase positive attitudes toward psychological help because it reduced perceptions that the help-seeking information they read was personally threatening (cf., Lannin et al., 2016).

Finally, exploratory longitudinal analyses were conducted to explore the possibility that eliciting self-affirmation to temporarily bolster self-worth could have more enduring effects if affirmation elicited recursive positive processes (Cohen & Sherman, 2014). Results indicated that no experimental manipulations had any statistically significant direct or indirect main effects on self-stigma or attitudes toward therapy. There was one significant indirect interaction effect, which indicated that the combination of social-affirmation and standard information as well as the combination of no-affirmation and reassuring information were associated with increased self-stigma two weeks posttest because these manipulations decreased self-stigma immediately after the self-affirmation intervention. It is possible that these two combinations represent an optimal amount of "threat" associated with help-seeking information, however this interpretation should be regarded with caution because there were

no multivariate interaction effects on variables assessing threat, suggesting this result could be due to type I error.

In sum, the results have important implications for further refinement of self-affirmation interventions designed to reduce help-seeking threat and increase positive help-seeking beliefs. First, it appears that values-affirmation may be a more effective manipulation than social-affirmation for directly reducing threat, and for indirectly increasing positive help-seeking beliefs via reductions in threat. Second, because of the lack of conclusive interaction effects, there is no evidence to suggest that combining both affirmation interventions would produce additive benefits. Third, utilizing reassuring information appears to be more effective than standard information for directly reducing help-seeking information threat and for *indirectly* increasing positive help-seeking beliefs, but may not have any discernible effects on *directly* promoting positive help-seeking beliefs. Fourth, the combination of values-affirmation and reassuring information was effective in increasing participants' engagement with help-seeking information, but had no statistically significant effects on other indicators of threat or help-seeking beliefs. Thus, there is mixed evidence to support the notion that combining these self-affirmation with reassuring information would produce synergistic effects.

CHAPTER 4

STUDY 2

Overview and Design

The goal of Study 2 was to test effects of a brief online self-affirmation intervention on threat and beliefs related to help-seeking in a more distressed online community sample. Results from Study 1 informed the finalization of the online self-affirmation intervention and the type of information that participants would encounter in Study 2. Values-affirmation was utilized because of its beneficial effects identified in Study 1, and information adapted from the American Psychological Association's (2015a) help center website was utilized to represent information that distressed individuals might actually encounter if they were consulting online help-seeking resources. Study 2 utilized a posttest only, two-group between-subjects online experimental design. Prior to being presented with brief psychoeducation information that was held constant across both groups, participants were randomly assigned to a condition where they completed an online affirmation of personal values (values-affirmation) or a condition where participants did not complete an online affirmation (no-affirmation). The no-affirmation condition represents the standard of care for online psychoeducational interventions.

Outcome measures included assessments of threat and help-seeking beliefs. It was hypothesized that people completing the self-affirmation intervention would report decreased perceptions of threat and more positive help-seeking beliefs. Exploratory analyses were also conducted to examine whether the self-affirmation intervention increased the probability of seeking personalized information about help-seeking options, compared to the no-affirmation condition.

Method

Power Analysis

Similar to the power analysis from Study 1, the present power analysis utilized data from Lannin et al. (2013) and G-Power statistical software. Lannin et al. (2013) found a standardized mean difference effect size (δ) between posttest self-stigma scores of those who self-affirmed ($M = 2.84$, $SD = 0.74$) versus those who did not self-affirm ($M = 2.49$, $SD = 0.61$) equal to 0.52. Similar to the power analysis in Study 1, because participants in the present study complete the intervention online, it is unlikely that they would behave identically to participants in Lannin et al. (2013). Thus, a more conservative estimate of sample size was calculated. A minimum total sample size of $N = 186$ with 93 participants in each group would be required to achieve adequate power, $1 - \beta = .95$, for an effect size of $d = .52$, $\alpha = .05$.

Participants

Mechanical Turk (MTurk) was used to recruit participants. MTurk is an Internet service where individuals post "Human Intelligence Tasks" (HITs) for workers to complete, with HITs typically composed of small tasks such as responding to online queries, comparing and contrasting images, transcription, and data entry (Casler, Bickel, & Hackett, 2013). MTurk provides a means for collecting data inexpensively and rapidly, and has been noted for producing samples more demographically diverse than American college samples (Buhrmester, Kwawng, & Gosling, 2011). The present sample consisted of 186 adults recruited with a HIT posted on MTurk inviting them to complete an online survey about mental health and therapy (*Women* = 74.7%, *Men* = 23.7%, *Other* = 1.6%; *Age*, $M = 36.3$, $SD = 11.9$, *Range* = 18-68). Participants were White (82.3%), Black/African American

(5.4%), Asian or Pacific Islander (4.3%), Latino or Hispanic (3.8%), identified as Other (3.8%), or American Indian or Alaskan Native (0.5%). All participants received \$0.12 USD in their Amazon.com account for successfully completing the HIT.

Measures

Threat. In line with Study 1, threat was assessed via two self-report measures (help-seeking information threat and negative mood) and a behavioral indicator (time spent reading information).

Help-Seeking Information Threat. As shown in Appendix AA, help-seeking information threat was assessed via the fear subscale of the perceived threat measure utilized in Study 1, with three questions assessing susceptibility excluded in order to shorten the survey. The five items assessing fear were adapted from Witte (2013), which provided self-reported accounts of threat that the help-seeking information elicited, with a sample item being, “How much did this message make you feel frightened?” All items are rated on a 7-point Likert scale, coded such that 1 = *strongly disagree* and 7 = *strongly agree*. Internal consistency in this sample was high, $\alpha = .94$.

Negative Mood. As in Study 1, the negative affect subscale of the Positive and Negative Affect Schedule (Watson et al., 1988) assessed state negative mood after participants had completed study procedures (see Appendix AB). Internal consistency for the present sample was high, $\alpha = .90$.

Help-Seeking Beliefs. Help-Seeking beliefs were assessed by measuring anticipated growth from therapy, appraisal of self-controllability in therapy, self-stigma of seeking help, and intentions to seek psychological help.

Anticipated Growth from Therapy. The assessment of the anticipated personal growth from therapy utilized the challenge subscale of the Stress Appraisal Measure (SAM; Peacock & Wong, 1990), which can be found in Appendix AC. For all items, participants rate their perceptions of the situation on a scale ranging from 1 = *not at all* to 5 = *a great amount*. Measures of anticipated growth from therapy and appraisal of self-controllability in therapy (see next measure below) are adaptations of two subscales of the SAM. To assess these two constructs, the present study utilized the challenge and self-controllability subscales, replacing the word “situation” with the word “therapy.” The original SAM assesses anticipatory stress from an upcoming situation, and consists of 6 four-item appraisal subscales assessing perceptions of controllability, uncontrollability, self-controllability, centrality, threat, and challenge with regard to an upcoming situation. A sample item of the anticipated growth in therapy subscale is, “To what extent can I become a stronger person because of therapy?” Evidence for validity of this subscale indicates statistically significant correlations between anticipated growth from therapy with other study measures: appraisal of self-controllability in therapy ($r = .63, p < .001$), intentions to seek psychological help ($r = .59, p < .001$), self-stigma in therapy ($r = -.35, p < .001$), and a marginally significant correlation with distress ($r = -.13, p = .072$). Internal consistency for this subscale in the present sample was high, $\alpha = .89$.

Appraisal of Self-Controllability in Therapy. The assessment of personal coping resources in meeting the demands of therapy utilized the self-controllability subscale of the SAM. As shown in Appendix AC, a sample item is, “Do I have what it takes to do well in therapy?” Evidence for validity of this subscale indicates statistically significant correlations between appraisal of self-controllability in therapy with other study measures: anticipated

growth from therapy ($r = .63, p < .001$), intentions to seek psychological help ($r = .51, p < .001$), self-stigma in therapy ($r = -.37, p < .001$), and distress ($r = -.27, p < .001$). Internal consistency for this subscale in the present sample was also high, $\alpha = .90$.

Self-Stigma of Seeking Psychological Help. The same *Self-Stigma of Seeking Help* scale (Vogel et al., 2006) that was utilized in Study 1 was used in Study 2 to measure participants' self-stigma related to seeking professional help for mental health concerns. Internal consistency in the present sample was high, $\alpha = .89$. See Appendix AD.

Intent to Seek Psychological Help. The six-item Intent subscale of the Beliefs About Psychological Services scale (BAPS; Ægisdóttir & Gerstein, 2009) was used to assess intent to seek psychological help, with a sample item being, "If I believed I were having a serious problem, my first inclination would be to see a psychologist." The BAPS scale updates help-seeking language on the widely used long form and short-form versions of the Attitudes Toward Seeking Professional Psychological Help scales (ATSPPH; Fischer & Farina, 1995; Fischer & Turner, 1970). The 18 items on the BAPS consist of three subscales: Intent, Stigma Tolerance, and Expertness, with individual items being rated on a 6-point Likert-type scale that ranges from 1 = *strongly disagree* to 6 = *strongly agree*. Previous validity evidence has shown that the BAPS Intent subscale correlates strongly with the recognition of need for psychotherapeutic help factor of the ATSPPH ($r = .68, p < .01$), and has a weaker relationship with the Stigma Tolerance factor of the ATSPPH ($r = .43, p < .01$; Ægisdóttir & Gerstein, 2009). Results from Ægisdóttir and Gerstein's study (2009) also demonstrated that the BAPS was able to discriminate between individuals who had previously utilized psychological services from those who had not. Internal reliability for the Intent subscale has

been high in previous samples ($.88 \leq \alpha \leq .90$; Ægisdóttir & Gerstein, 2009), and was also high in the current sample, $\alpha = .84$. See Appendix AE.

Psychological Distress. As in Study 1, the *Self-Administered K6+* (Kessler et al., 2002) was used to assess psychological distress, which can be found in Appendix AF.

Internal consistency in the present sample was high, $\alpha = .87$.

Procedure

After obtaining approval from Iowa State University's institutional review board (Appendix T), a HIT was posted on MTurk inviting participants to confidentially complete an online survey about mental health and counseling (Appendix U). To ensure that the sample represented at-risk United States adults who could benefit from help-seeking information, criteria for eligibility included: (a) being 18 years or older, (b) currently struggling with depression, anxiety, stress, homesickness, relationships, adjustment to school or work, self-esteem, perfectionism, procrastination, grief/loss, or another mental health concern, (c) not currently in therapy, and (d) U.S. residency or citizenship. Upon signing up on MTurk, participants provided informed consent online (Appendix V), and then answered several demographic/screening questions to ensure they met eligibility for the study (Appendix W). Eligible participants were then randomly assigned via Qualtrics software to one of two experimental conditions: a values-affirmation condition or a no-affirmation condition.

Participants assigned to the values-affirmation intervention completed a values-affirmation activity nearly identical to the values-affirmation in Study 1, which can be found in Appendix X. However, while values chosen for Study 1 were intended not to evoke thoughts of social relationships, the values utilized in this study added the values of *sense of*

belonging and *friendship* as options. Participants assigned to the no-affirmation condition did not engage in any additional affirmation-like activity in order to represent the standard of care for individuals seeking help-seeking information online.

Next, as shown in Appendix Y, survey software presented all participants with help-seeking information from the American Psychological Association's Help Center website (APA, 2015a), which is designed to help individuals assess whether or not psychotherapy is appropriate for their mental health concerns. To ensure that participants comprehended the information they just read, participants answered two questions on the information's content, found in Appendix Z.

Participants then completed three outcome measures assessing threat: the 5-item fear subscale from the help-seeking information threat scale used in Study 1 (Witte, 2013), as well as the other two threat assessments from Study 1 (negative mood and time spend reading information), which are found in Appendices AA-AB. Additionally, participants completed measures relevant to their help-seeking beliefs that included anticipated growth from therapy, appraisal of self-controllability in therapy, self-stigma of seeking psychological help, and intentions to seek psychological help (Appendices AC-AE).

Participants were then asked to complete the assessment of psychological distress (K6+; Appendix AF). To assess a behavioral measure of openness to confronting their mental health status, after completing the measure participants were asked whether they would be interested in seeing results of the psychological distress measure (yes or no), with yes responses more indicative of openness (Appendix AG). Participants who answered yes received feedback in line with Prochaska et al., (2012), wherein K6+ scores 5 or greater identify individuals with moderate psychological distress who would likely benefit from

psychological treatment, and scores of 13 or greater identify individuals with a potentially serious mental illness that has occurred within the last 12 months. As indicated in Appendix AH, all participants were then asked, “Would you like information about how to find a psychologist?” Affirmative responses directed participants to the American Psychological Association’s (2015b) Psychologist Locator Service.

To assess distracted survey-taking, participants were then asked to report behaviors they had utilized while taking the survey, such as watching TV, browsing other websites, taking breaks, or other (Appendix AI). Finally, participants were presented an online debriefing statement and provided instructions for receiving payment (Appendix AJ).

Results Study 2

Missing Data and Descriptive Analyses

First missing data were examined. Because survey software was specified to provide reminders when individual items were not completed, there were no item-level missing data. All participants reported being residents or citizens of the United States, and 97.8% were native English speakers. Table 4 presents information regarding participants’ location.

Table 4

Participants' Location

State	Frequency	Percent	Cumulative Percent
Alabama	1	0.5	0.5
Arizona	5	2.7	3.2
Arkansas	3	1.6	4.8
California	16	8.6	13.4
Colorado	2	1.1	14.4
Connecticut	4	2.1	16.6
Florida	14	7.5	24.1
Georgia	4	2.1	26.2
Illinois	2	1.1	27.3
Indiana	6	3.7	31.0
Iowa	2	1.1	32.1
Kentucky	9	4.8	36.9
Louisiana	5	2.7	39.6
Maryland	6	3.2	42.8
Massachusetts	2	1.1	43.9
Michigan	5	2.7	46.5
Minnesota	4	2.1	48.7
Mississippi	2	1.1	49.7
Missouri	8	4.3	54.0
Montana	2	1.1	55.1
Nevada	2	1.1	56.1
New Hampshire	2	1.1	57.2
New Jersey	1	0.5	57.8
New Mexico	1	0.5	58.3
New York	10	5.3	63.6
North Carolina	10	5.3	69.0
Ohio	14	7.5	76.5
Oklahoma	1	0.5	77.0
Oregon	5	2.7	79.7
Pennsylvania	3	1.6	81.3
South Carolina	4	2.1	83.4
Tennessee	2	1.1	84.5
Texas	12	6.4	90.9
Virginia	4	2.1	93.0
Washington	5	2.7	95.7
West Virginia	2	1.1	96.8
Wisconsin	6	3.2	100.0
Total	186	100.0	100.0

K6+ scores for the present sample indicated that the average participant was experiencing moderate distress that is appropriate for seeking professional help and may indicate the presence of a DSM-IV diagnosable disorder ($M = 10.3$, $SD = 5.4$, $Range = 0.0 - 24.0$; cf. Prochaska et al., 2012). Thirty participants (16.1%) reported low distress (scores in the range of 0-4), 93 (50.0%) reported moderate distress (scores in the

range of 5-12), and 63 (33.9%) reported severe distress (scores above 13). As shown in Table 5, participants reported experiencing a variety of mental health concerns.

Table 5

Current Mental Health Concerns of Participants

Mental Health Concern	Frequency / Percentage of Sample
Stress	134 / 72.0%
Anxiety	130 / 69.9%
Depression	104 / 55.9%
Low Self-Esteem	88 / 47.3%
Procrastination	61 / 32.8%
Relationship Concerns	49 / 26.3%
Perfectionism	47 / 25.3%
Grief / Loss	25 / 13.4%
Other	23 / 12.4%

Note: Participants were able to mark multiple concerns. Concerns marked as Other included: attention deficit hyperactive disorder, avoidant personality, anger/rage, disabled, bipolar disorder, borderline personality disorder, dissociative identity disorder, gender dysphoria, job transition and work adjustment, obsessive compulsive disorder, post-traumatic stress disorder, and stress due to chronic pain.

Compared to the sample in Study 1, Study 2's sample was older [$M_{Study1} = 19.23$ (1.49) vs. $M_{Study2} = 36.28$ (11.89); $t_{568} = 27.68, p < .001$], experienced more severe distress [$M_{Study1} = 7.59$ (4.73) vs. $M_{Study2} = 10.25$ (5.44); $t_{568} = 5.98, p < .001$], and had more women (64.6% in Study 1 vs. 74.7% in Study 2; $\chi^2_2 = 13.58, p = .001$), but did not differ by ethnicity, with both samples being primarily White (88.5% in Study 1 vs. 82.3% in Study 2; $\chi^2_5 = 4.42, p = .490$).

There were also statistically significant demographic differences between Study 2's ($N = 186$) MTurk sample and a larger ($N = 3,006$) representative MTurk sample (Burhmester, Kwang, & Gosling, 2011). Compared to Burhmester et al's (2011) sample [Age $M = 32.8$ (11.5); 55% = women; 64% = White], Study 2's sample [Age $M = 36.28$ (11.89); 74.7% = women; 82.3%] was older (Age, $M_{diff} = 3.50$ (0.87), $t_{3190} = 4.02, p < .001$), and had a greater proportion of women ($\chi^2_1 = 29.96, p < .001$) and Whites ($\chi^2_1 = 24.88, p < .001$).

To assess between-group differences in age and psychological distress across experimental conditions in Study 2, independent samples *t*-tests were conducted (see Table 6). *T*-test and Chi-square tests indicated no significant differences in age, psychological distress, or gender across groups, all *ps* > .17.

Table 6

Demographic Information by Experimental Conditions

Demographic Category	No Self-Affirmation (<i>N</i> = 94)	Values-Affirmation (<i>N</i> = 92)
Age: Mean (SD)	35.2 (12.2)	37.4 (11.6)
Distress: Mean (SD)	10.5 (5.4)	10.0 (5.5)
Gender: % Women, % Men, % Other	73.4%, 25.5%, 1.1%	76.1%, 21.7%, 2.2%
Mental Health Concern		
Stress: n, %	69, 73.4%	65, 70.7%
Anxiety: n, %	69, 73.4%	61, 66.3%
Depression: n, %	57, 60.6%	47, 51.1%
Low Self-Esteem: n, %	44, 46.8%	44, 47.8%
Procrastination: n, %	33, 35.1%	28, 30.4%
Relationship Concerns: n, %	27, 28.7%	22, 23.9%
Perfectionism: n, %	26, 27.7%	21, 22.8%
Grief / Loss: n, %	10, 10.6%	15, 16.3%
Other: n, %	11, 11.7%	12, 13.0%

Main Analyses

It was hypothesized that people completing the values-affirmation intervention would report decreased threat (less help-seeking information threat, less negative mood, and longer time spent reading information) and increased positive help-seeking beliefs (greater anticipated growth from therapy, greater self-controllability in therapy, less self-stigma of seeking psychological help, and greater intentions of seeking help).

Effect of Values-Affirmation on Threat. It was hypothesized that compared to the no-affirmation condition the values-affirmation intervention would decrease threat—as indicated by less help-seeking information threat, less negative mood, and greater time spent reading help-seeking information. To examine this hypothesis, a multivariate analysis of variance (MANOVA) was conducted with values-affirmation specified as the independent factor. Indicators of responses to threat were specified as outcome variables: help-seeking information threat, negative mood, and time spent reading help-seeking information.

Results of the MANOVA did not indicate a statistically significant multivariate effect for values-affirmation ($F_{3,182} = 1.45, p = .229$). Despite the non-significant multivariate effect, follow-up ANOVA tests were conducted to examine trends in the sample. Between-subjects ANOVA tests indicated that there was a statistically significant effect for values-affirmation on negative mood ($F_{1,184} = 3.93, p = .049$), but not on help-seeking information threat nor time spent reading information, both $ps > .16$, see Table 7.

Table 7

Pairwise Comparisons of Threat for No-Affirmation vs. Values-Affirmation

Dependent Variable	Values	Mean (SE)	Mean Difference (No-affirmation – Values-Affirmation)
Help-seeking information threat	No-Affirmation	2.22 (0.14)	0.28, 95% CI = [-0.12, 0.67]
	Self-Affirmation	1.94 (0.14)	
Negative mood	No-Affirmation	1.76 (0.07)	0.20*, 95% CI = [0.00, 0.40]
	Self-Affirmation	1.56 (0.07)	
Time Reading	No-Affirmation	54.21 (3.31)	-1.56, 95% CI = [-10.85, 7.73]
	Self-Affirmation	52.65 (3.34)	

* $p < .05$.

Effect of Values-Affirmation on Help-Seeking Beliefs. It was hypothesized that in comparison to the no-affirmation condition, the values-affirmation intervention would increase positive help-seeking beliefs as demonstrated by greater anticipated growth from

therapy, greater self-controllability in therapy, decreased self-stigma of seeking psychological help, and greater intentions of seeking help. To examine the hypothesis, a multivariate analysis of variance (MANOVA) was conducted with values-affirmation specified as the independent factor, and help-seeking beliefs (anticipated growth from therapy, self-controllability in therapy, self-stigma of seeking psychological help, and intentions of seeking help) specified as dependent variables.

Results supported the hypothesis. The MANOVA indicated a significant multivariate effect for values-affirmation, $F_{4,181} = 2.60, p = .038$. Follow-up ANOVA tests were conducted to examine the nature of this multivariate effect, indicating a statistically significant effect for values-affirmation on anticipated growth from therapy ($F_{1,184} = 5.90, p = .016$) and on intentions to seek therapy ($F_{1,184} = 9.94, p = .002$), and marginally statistically significant effects on self-stigma of seeking psychological help ($F_{1,184} = 2.71, p = .102$) and on the appraisal of how well one could cope in therapy ($F_{1,184} = 2.95, p = .088$). Pairwise comparisons are shown in Table 8.

Table 8

Pairwise Comparisons of Help-Seeking Beliefs for No-Affirmation vs. Values-Affirmation

Dependent Variable	Values	Mean (SE)	Mean Difference (Values-Affirmation – No-Affirmation)
Anticipated Growth	No-Affirmation	2.90 (0.10)	0.35*, 95% CI = [0.06, 0.62]
	Values-Affirmation	3.25 (0.10)	
Coping Appraisal in Therapy	No-Affirmation	3.02 (0.10)	0.24 [†] , 95% CI = [-0.04, 0.41]
	Values-Affirmation	3.26 (0.10)	
Intentions to Seek Therapy	No-Affirmation	3.75 (0.10)	0.46**, 95% CI = [0.17, 0.75]
	Values-Affirmation	4.21 (0.10)	
Self-Stigma	No-Affirmation	2.59 (0.08)	-0.1 [†] , 95% CI = [-0.41, 0.04]
	Values-Affirmation	2.41 (0.08)	

[†] .10 < p < .05. * p < .05, ** p < .01.

Exploratory Analyses

Exploratory analyses examined whether the self-affirmation intervention increased the likelihood of seeking personalized information about help-seeking options. To examine this, two hierarchical linear regressions were conducted—one for each of the following outcome variables: (1) the decision to receive the results of a mental health screening participants had already completed (i.e., K6+), and (2) the decision to receive information about how to find a psychologist. For both logistic regressions, self-affirmation was specified as a predictor variable (0 = *No-Affirmation*, 1 = *Self-Affirmation*), and psychological distress as a covariate. Results indicated that values-affirmation was not a significant predictor of decisions to receive mental health screening results or information about how to find a psychologist, both $ps > .810$.

Discussion Study 2

Results of Study 1 indicated that values-affirmation might be more effective than social-affirmation in reducing therapy-related identity-threat. Therefore, Study 2 replicated these findings in a national convenience sample of adults that was older, more distressed, and composed of a higher proportion of women than the sample in Study 1. It was hypothesized that compared to adults completing no-affirmation (the standard of care for individuals seeking online help-seeking information), distressed adults completing the online values-affirmation intervention in Study 2 would report (1) less threat, and (2) greater positive help-seeking beliefs. Results partially supported the hypotheses. In contrast to the results of Study 1, in Study 2 the values-affirmation intervention had a statistically non-significant multivariate effect on indicators of threat. Specifically, though values-affirmation had demonstrated a statistically significant decrease in negative mood, it did not decrease help-

seeking information threat, nor did it increase the amount of time they spent reading that information.

The less conclusive effect of values-affirmation on threat observed in Study 2 may have been due to differences from Study 1 regarding demographic characteristics of the sample as well as study procedures. It is conceivable that the sample in Study 2 experienced greater threat from reading help-seeking information because—given their higher distress—the information was more personally relevant to them. Furthermore, in contrast to the procedures of Study 1, in order to qualify for participation, Study 2 participants were required to check off a list of mental health concerns they experienced, which increased the salience of these concerns. Thus, it is likely that this increased salience of their mental health concerns induced additional threat at the start of the study. Study 2 individuals' self-worth may have already been threatened prior to the values-affirmation, which may have decreased the efficacy of the values-affirmation in reducing threat (Critcher et al., 2010). Although values-affirmation did not influence two of the three indicators of threat, interestingly, the intervention did decrease negative mood, a reduced threat-response.

Additionally, results from Study 2 provided evidence that values-affirmation increased positive help-seeking beliefs. Specifically, there were statistically significant effects that indicated values-affirmation led to greater anticipated growth in therapy and intent to seek therapy, and marginally statistically significant effects suggesting that values-affirmation might decrease self-stigma associated with seeking psychological help and increase positive appraisals of how one might cope in therapy. While values-affirmation did not increase positive help-seeking beliefs in Study 1, this may have occurred in Study 2 due to the more severe mental distress of the participants. There is evidence that manipulations

of self-affirmation are most effective when followed by information that is self-relevant (Reed & Aspinwall, 1998). Because Study 2 participants reported having greater psychological distress and experienced greater salience of this distress, the information they read about help-seeking may have been more self-relevant to them, compared to Study 1 participants. Participants in Study 2 were also older and composed of a higher proportion of women—both demographic characteristics linked to more positive beliefs about help-seeking (Mackenzie, Gekoski, & Knox, 2006). However, it is unlikely that gender or age contributed to the efficacy of the values-affirmation intervention because there were no between-group differences across these demographic categories. Indeed, it is possible that the demographic group represented in the present sample may have enabled self-affirmation to have an effect that you would not see in a sample less amenable to help-seeking.

Results of exploratory analysis indicated no evidence to support the notion that values-affirmation increases the probability of seeking personalized information about help-seeking options.

CHAPTER 5

MAIN DISCUSSION

The current research focused on the development and testing of a brief, online intervention that aims to mitigate reluctance to engage in help-seeking barriers. Across two studies, the present research offers evidence that brief, online interventions based on self-affirmation theory (Sherman & Cohen, 2002, 2006; Sherman & Hartson, 2011; Steele, 1988; Steele & Liu, 1983) may function as a means of cultivating greater openness to information about mental health and treatment. Self-affirmation theory (Steele, 1988) posits that self-affirming activities may provide an indirect method of bolstering self-worth, thereby reducing the motivation to protect positive self-perceptions by avoiding or distorting self-relevant information, which may often be perceived as threatening.

The present research found that self-affirmation effects varied across different populations. For individuals with moderate distress (Study 1), values-affirmation was effective in reducing threat, but was not effective in directly increasing positive help-seeking beliefs. However, for individuals whose distress was approaching clinically significant levels (Study 2), values-affirmation was not effective in reducing threat, but was effective in increasing positive help-seeking beliefs. Considering that threat associated with reading help-seeking information is perceived to be a help-seeking barrier (Lannin et al., 2016), it was initially expected that by reducing threat, eliciting self-affirmation might also increase positive help-seeking beliefs. There was evidence that this occurred in Study 1, but the indirect effect from values-affirmation to self-stigma and attitudes toward therapy was relatively small and there were no direct effects from values-affirmation to any help-seeking belief. This suggests that when peoples' distress is low or moderate, reminding them of

positive aspects related to their identity—insofar as this bolsters their self-worth—may also reduce the salience of their mental distress and decrease the urgency to seek help for their problems. In contrast, as observed in Study 2, when peoples' distress is high, reminding them of positive aspects related to their identity may reduce the salience of their mental distress enough to enable them to more objectively assess their need to seek help, even if help-seeking information is still perceived as threatening.

This combination of results implies that it is likely that the psychological processes that reduce perceived barriers to seeking psychological help may be different from the processes that directly promote help-seeking behaviors. Consider the metaphor of a car. Help-seeking barriers may function as a brake pedal that slow the “help-seeking vehicle” down, whereas psychological distress and positive help-seeking beliefs function more as gas pedals that speed up the “help-seeking vehicle” and encourage help-seeking behaviors (cf. Sherman, Mann, & Updegraff, 2006). In Study 1, for those with lower distress, self-affirmation may have helped participants take their foot off the brakes, but self-affirmation may have also allowed them to partially release the gas pedal by temporarily reducing the salience of their distress. In other words, for less distressed individuals, even though self-affirmation processes reduce perceived barriers to help-seeking information, these processes may not, in and of themselves, directly increase motivation to seek psychological help (and may actually temporarily reduce it). However, it should be noted that there was a small indirect effect from values-affirmation to attitudes toward therapy through threat and self-stigma. This suggests that values-affirmation, by releasing the “brakes”, may offer some benefits for increasing help-seeking behaviors, even in those with moderate distress.

Continuing with the metaphor, in Study 2, for those with higher distress, self-affirmation may not have released the brakes as much as it did for those with lower distress, but it did appear to directly “give the car more gas”, possibly creating more personal urgency to seek help. In other words, for more severely distressed individuals self-affirmation processes may not directly reduce threat associated with help-seeking information, but may enable them to more objectively weigh the information they encounter, increasing their motivation to seek psychological help. This suggests the need for a future self-affirmation study examining pre-existing distress as a predictive factor. It is conceivable that pairing a self-affirmation intervention with a more explicit, directive help-seeking message (e.g., “You really need therapy!”) may better help more distressed individuals to seek therapy.

Implications for Online Self-Affirmation Interventions to Promote Help-seeking

Developing online self-affirmation interventions may constitute an important next step in mitigating help-seeking barriers because nearly one in five adults consult online resources to research their mental health concerns (Powell & Clarke, 2006). In particular, online self-affirmation activities could be implemented: (a) on websites that are commonly visited by populations experiencing severe distress, (b) on websites that offer treatment information such as university webpages that provide orientation information for new students, webpages describing benefit information for Veterans and other at-risk populations, and employee assistance program websites, as well as (c) via online training modules orienting new members to organizational policies and benefits.

The present research provides evidence that self-affirmation theory may provide a useful approach for understanding why individuals may avoid psychotherapy, and also for informing the development of online help-seeking interventions. The intervention developed

and tested in the current research was tailored to an online context, and represents a briefer approach than traditional self-affirmation writing manipulations (McQueen & Klein, 2006). Despite its brevity, affirming personal values online—via rank-ordering and rating personal values—was effective in decreasing barriers to online help-seeking information. Nonetheless, it is important to consider several factors when applying self-affirmation interventions in online help-seeking contexts.

First, it may be necessary to consider how self-affirmation is manipulated. The present research suggests that affirming personal values is more efficacious than affirming social relationships in reducing barriers to help-seeking, possibly because values represent a more intrinsic aspect of the self than the status of close personal relationships (Schimel et al., 2004). There are robust individual (Quinn & Crocker, 1998) and group differences (Twenge & Crocker, 2002) in the degree to which people base their self-worth on others' approval. This suggests that if social-affirmation is to be utilized as an approach to reducing help-seeking barriers, additional work would need to examine which moderating factors influence when and for whom this approach reduces barriers, increases barriers, or has no effect.

Though the current research found evidence in favor of encouraging reflection on intrinsic personal values—it may also be important to consider the nature of the personal values on which individuals reflect. A clinical self-affirmation intervention may not be effective if the self-affirmation activity elicits values too closely associated with therapy-related stigma, as these may intensify negative responses to help-seeking messages (Blanton, Cooper, Skurnik, & Aronson, 1997). This psychological dynamic is in line with evidence that direct approaches to changing negative stereotypes about mental illness often evoke

greater activation and recall of those negative stereotypes (Corrigan & Penn, 1999; Macrae, Bodenhausen, Milne, & Jetten, 1994). Additionally, endorsing individualistic values may increase people's tendency to devalue people (including themselves), who fall short in some manner due to perceived moral failings such as self-indulgence, lack of self-discipline, or laziness (see Protestant work ethic; Crocker & Quinn, 2000; Weber, 1958). A values-affirmation that encourages the reflection of individualistic values might activate a larger system of beliefs about personal responsibility (Crandall, 1994) that increases prejudice toward people struggling with mental health concerns (Corrigan & Watson, 2002). To avoid unintentionally stigmatizing mental illness, it may be efficacious to direct self-affirmation in a particular domain that would be most likely to lower self-protectiveness. For example, a values-affirmation intervention might be most beneficial if it encourages reflection on values that emphasize inclusivity (e.g., harmony) rather than personal responsibility (e.g., self-discipline); however, additional work is needed to examine this empirically.

Second, it may be informative to consider the salience of mental distress in the population the intervention targets. For example, a self-affirmation intervention deployed to a low-distress population (e.g., a general sample of undergraduates) may not benefit much from incorporating a values-affirmation intervention, as reflecting on positive self-characteristics might decrease help-seeking threat, but it might also decrease the urgency to seek help by decreasing the salience of mental distress. On the other hand, the present research suggests that a self-affirmation intervention deployed to a population experiencing severe distress, such as Veterans (Golub, Vazan, & Bennett, 2013), may result in a greater benefit because the intervention may enable individuals to more objectively weigh the information they are presented with, increasing their likelihood to seek psychological help.

This is in line with studies finding that self-affirmation may be most effective for individuals under high identity threat (Cohen & Sherman, 2014; Schütz et al., 2013). The fact that self-affirmation offers a potential means of addressing help-seeking barriers for individuals experiencing severe distress is promising, considering that there is robust evidence that those who are most at risk for an illness are often most likely to avoid accommodating information that highlights their risk (Ditto & Lopez, 1992; Good & Abraham, 2007; Kessels, Ruiter, & Jansma, 2010; Chaiken, 1992). Without being able to self-affirm, individuals who are aware of their mental health concerns and related stigma may be likely to ignore relevant help-seeking information, refuse to accept that information as true, or suppress relevant information from conscious awareness (Lannin et al., 2016; van 't Riet & Ruiter, 2013).

Third, the effective conveyance of help-seeking information may need to “thread the needle” between being overly reassuring or overly threatening (Blanton, Gerrard, & McClive-Reed, 2013). This implies that it is important to take into account not only the distress of the target population, but also whether help-seeking information is framed in a reassuring manner. The present research suggests that utilizing a more reassuring message may decrease some threat-responses, but may not directly decrease self-stigma or increase positive attitudes toward therapy (Study 1). This suggests that even the most reassuring messages about help-seeking may not be able to mitigate stigma associated with seeking psychological help for individuals with moderate distress. However, more study is needed to examine the efficacy of reassuring information with more severely distressed populations.

Fourth, it may be important to consider how best to present or create “buy-in” for participation in self-affirmation interventions in real-world settings. There is evidence that effects of self-affirmation may be diminished when people are aware that the purpose of the

intervention is to maintain self-worth or improve openness to self-relevant, threatening information (Sherman et al., 2009). Previous research has avoided this effect by withholding the true purpose of self-affirmation studies so that participants believed their activities served a purpose other than reducing barriers to help-seeking (Lannin et al., 2013; Sherman & Cohen, 2006), but it is unlikely that utilizing this type of experimental deception would be ethical for an online “real world” intervention. Indeed, there is evidence that this “awareness” effect can be mitigated if individuals are given personal choice as to whether or not they would like to engage in the self-affirmation activity (Silverman, Logel, & Cohen, 2013). However, in a real-world setting, this solution presents a quandary. Explicitly, introducing a self-affirmation intervention as a way to improve one’s openness to threatening help-seeking information may *itself* enact a barrier to participation in a self-affirmation activity designed to improve one’s openness to threatening information about help-seeking information.

It is necessary to consider alternative methods of presenting self-affirmation interventions that encourage reflection on personal values, so that they highlight genuine benefits to potential participants, without decreasing self-affirmation’s effects. One method of presenting the potentially beneficial aspects of a value-based self-affirmation intervention would be to describe additional benefits of exploring one’s personal values unrelated to self-affirmation’s predicted benefits. Interventions based in Acceptance and Commitment Therapy (ACT) and Motivational Interviewing may provide genuine rationales for the benefit of reflecting upon personal values, which do not reveal the secondary benefits predicted by self-affirmation theory. Specifically, both theoretical approaches describe values as important guides for behaviors, which will help individuals achieve lives that will be

meaningful and in line with what people really desire. For example, an ACT approach conceptualizes values as “desired qualities of life” that guide behaviors (Wilson & Murrell, 2004). Personal values are so central to ACT that an overarching goal is to align behaviors with personal values, so that all of a person’s behaviors become “values-based actions.” Motivational interviewing, which has been utilized to motivate lifestyle changes, utilizes a similar rationale as ACT for identifying and reflecting upon values, although the full purpose of exploring personal values is not typically made explicit to clients. That is, motivational interviewing involves helping an individual identify intrinsic personal values, so that the individual gains awareness of the discrepancy between their values and their current behavior, and is thus motivated to make behavioral changes (Rollnick & Miller, 1995). For example, an individual might realize, “I value my family, but my drinking behaviors make me miss important family events.”

In addition to describing the benefits of reflecting on personal values as important to improving mental health because they serve as guides for behaviors and help motivate healthy behavioral changes, self-affirmation interventions could also accurately be described as methods of assessing one’s strengths. Indeed, some self-affirmation interventions have utilized modified assessments of character strengths (Napper, Harris, & Epton, 2009) or virtuous actions (Reed & Aspinwall, 1998) to elicit self-affirmation effects. Describing self-affirmation interventions as opportunities to identify personal assets and strengths is also in line with the distinctive strength-based focus of counseling psychology (Gelso, Nutt Williams, & Fretz, 2014; Owens, Magyar-Moe, & Lopez, 2015). This type of rationale could potentially complement online help-seeking interventions that may often emphasize an individual’s psychopathology (Regier et al., 1988).

Limitations and Future Directions

Even though the present research has many strengths, including its focus on testing practical applications of a well-established psychological theory in the help-seeking process, it also has some limitations. First, given the online context, experimental control was necessarily less than it would have been in a laboratory setting, and the exact contexts in which participants completed the studies are not known. It is possible that with more experimental control, the developed intervention may have exhibited greater self-affirmation effects. Despite the large within-group variance in both samples, the power of the research was sufficient to attain statistical significance for multiple outcome measures, indicating that self-affirmation effects may be relatively robust. Still, it may be useful to replicate this research under laboratory settings with tighter experimental control, to ensure that participants are not distracted, multitasking while taking the survey, or randomly responding to finish quickly. This could potentially decrease error variance and thereby increase experimental power so that a more accurate determination of the efficacy of the intervention can be determined. Online contexts offer other limitations as well. For example, in order to maximize the efficacy of self-affirmation manipulations, previous researchers have at times identified important personal values prior to laboratory sessions so that they can personalize the list of values that are presented to participants (Liu & Steele, 1986). In an online context, it is more difficult to personalize self-affirmation intervention to ensure that the values are meaningful to every participant. The present research utilized 14 values for every participant who completed the values-affirmation intervention, but future research may benefit from considering ways to personalize online self-affirmation interventions, so that the values that participants reflect on are tailored to their personalities.

Second, although the purpose of self-affirmation interventions is to reduce help-seeking barriers, participating in the intervention may itself be a barrier that individuals must also overcome. The present research studies utilized the titles College Student Mental Health (Study 1) and Mental Health and Counseling (Study 2). Additionally, in Study 2, participation was only open to people who reported having a mental health concern. There is some evidence that this may have influenced those who self-selected to participate. Compared to a larger representative MTurk sample (Burhmester et al., 2011), Study 2's participants were older and composed of a greater proportion of women and Whites. Indeed, a limitation of applying self-affirmation interventions online is that there may be certain individuals who are unwilling to overcome the "barrier" to engage in any online activity that makes their mental health salient. As already mentioned above, it may be useful for future studies to examine how best to present self-affirmation interventions in order to reduce initial risks associated with participating.

Third, efforts were made in Study 2 to provide external validity to the results of Study 1 by sampling from a more diverse population than undergraduates. Though Study 2 was older, more distressed, and had a higher proportion of women than Study 1, both studies were relatively homogenous with respect to race, with approximately 4 out of every 5 participants self-identifying as White. Therefore, to generalize to other relevant adult populations, the results of the current study may benefit from replication with samples diverse in race and ethnicity, gender identity, sexual orientation, and disability.

The current study provides initial evidence that self-affirmation processes are capable of reducing help-seeking barriers through brief online values-based interventions, and suggest an additional direction for future research. Specifically, it may be useful to continue

examining alternative approaches for eliciting self-affirmation processes via online interventions. Potential methods may include utilizing strengths-based assessments with positive feedback (Owens et al., 2015) or viewing personalized social media (Toma & Hancock, 2013). The use of video game applications also holds promise as a means of encouraging self-affirmation processes. Playing a video game that allows an individual to succeed may temporarily bolster that individuals' self-worth (Ryan, Rigby, & Przybylski, 2006), and it may be possible to employ avatars (online representations of a person), so that an individual's online successes could be made more relevant to their identity. Such an application may offer self-affirmation effects by employing a naturalistic online activity that may already be identified as enjoyable to many individuals.

Conclusion

The results of the current research provide empirical justification for translating self-affirmation processes into online interventions aimed at reducing help-seeking barriers. The present values-affirmation intervention developed and tested in two studies was found to support the predictions made by self-affirmation theory (Sherman & Cohen, 2014; Steele, 1998). Study 1 indicated that affirming personal values was a more effective strategy for eliciting self-affirmation processes than affirming social relationships. This is in line with research suggesting that values represent a more intrinsic aspect of the self than the status of close personal relationships (Quinn & Crocker, 1998; Schimel et al., 2004). Given that seeking psychological help involves a mixture of elements that are perceived to be supportive and threatening (Fischer et al., 1982), it may be useful to continue to disentangle the processes that reduce help-seeking barriers from those that promote help-seeking behaviors. In the present research, results from Study 1 indicated that for individuals experiencing

moderate distress, self-affirmation may diminish threat associated with seeking psychological help, but may not directly increase positive perceptions of that help. However, results from Study 2 indicated that for individuals with more severe distress, self-affirmation may enable a more objective assessment of the benefits of seeking help, providing additional motivation for taking action.

Overall, the results demonstrate that affirming personal values via a brief online intervention allows people to bolster their global sense of self-worth, which has important implications for how they perceive help-seeking information. As shown in the current research, barriers to psychological help can be decreased if individuals first reflect upon intrinsic, positive self-characteristics. This research represents important steps in prompting beneficial self-affirmation processes via an online intervention. If tailored to real-world applications, similar interventions offer the potential to reduce individuals' resistance to help-seeking and provide an important tool for addressing the underutilization of therapy and other effective mental health services.

CHAPTER 6

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APPENDIX A
MEDIATION ANALYSIS

A mediation analysis was conducted on archival data from a previous self-affirmation experiment (Lannin et al., 2013), with social-affirmation hypothesized to mediate the effects of a values-affirmation writing activity on self-stigma associated with seeking psychological help. In the original study 84 clinically distressed undergraduates experiencing psychological distress participated in a two-group pretest-posttest experimental study. All participants provided were randomly assigned to either the self-affirmation writing-task condition or the control writing-task condition. Participants in the self-affirmation condition completed the adapted Sources of Validation Scale (Harber, 1995 as cited in Cohen, Aronson, & Steele, 2000), ranking 13 personal characteristics regarding the importance of the characteristic for them. Participants were then instructed to recall and write about several personal experiences in which their most highly ranked characteristic had been important to them and had made them feel good about themselves for 5 min. Participants assigned to the control writing-task condition ranked 12 jellybean flavors in order of tastiness, and then wrote a paragraph describing the flavor of the jellybean they ranked as the fourth tastiest for 5 min (see Critcher, Dunning, & Armor, 2010). After completing either the self-affirmation or control writing-task, participants read an article that describes psychotherapy and its benefits, and then completed the Self-Stigma of Seeking Help scale (Vogel et al., 2006) as an assessment of therapy-related self-stigma.

To assess whether an essay contained elements of social-affirmation, a content analysis of the written essays was conducted wherein social-affirmation was defined as writing that explicitly mentions that one values doing an activity because *it is done with*

others, that one feels *part of a group* because of a certain value, or any related thoughts about *being liked or feeling affiliated with others*. Two coders independently judged whether each essay contained writing about social-affirmation (0 = *no* and 1 = *yes*) with discrepancies between raters being refereed by the author. Initial agreement between the two coders was 91.7%, with kappa equal to .832, $p < .001$, indicating high agreement (Landis & Koch, 1977).

To test the hypothesis that writing about social belonging would mediate the effects of the values-affirmation manipulation on self-stigma, a bias-corrected bootstrapping procedure was conducted (Preacher & Hayes, 2008). As shown in Figure 12, the specific indirect effect of self-affirmation on the reduction in self-stigma over time through social belonging was statistically significant ($\beta = -.27$, 95% CI = $[-.56, -.07]$, $p < .05$), indicating that writing about belonging was a statistically significant mediator of values-affirmation's effects on changes in self-stigma over time.

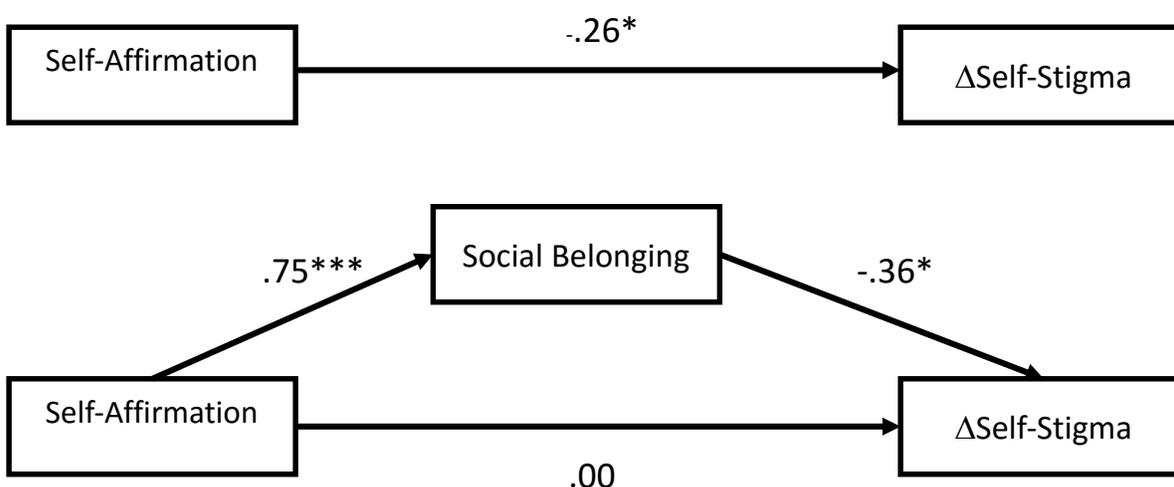


Figure 12. Evaluation of belonging as mediator of the relationship between self-affirmation and residualized change in self-stigma from pretest to posttest. Self-Affirmation = experimental manipulation of self-affirmation, coded such that 0 = *control*, 1 = *values-affirmation*; Social Belonging = Writing about social belonging themes, coded such that 0 = *no*, 1 = *yes*. Δ Self-Stigma = Residualized change from pretest to posttest in anticipated self-stigma of seeking psychotherapy.

APPENDIX B

STUDY 1: IRB APPROVAL

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Institutional Review Board
Office for Responsible Research
Vice President for Research
1138 Pearson Hall
Ames, Iowa 50011-2207
515 281-4566
FAX 515 294-4207

Date: 6/19/2014

To: Daniel Lannin
112W Lagomarcino Hall

CC: Dr. Max Guyl
W112 Lagomarcino
Dr. David Vogel
W112 Lagomarcino Hall

From: Office for Responsible Research

Title: College Student Mental Health

IRB ID: 14-316

Approval Date: 6/17/2014

Date for Continuing Review: 6/16/2016

Submission Type: New

Review Type: Expedited

The project referenced above has received approval from the Institutional Review Board (IRB) at Iowa State University according to the dates shown above. Please refer to the IRB ID number shown above in all correspondence regarding this study.

To ensure compliance with federal regulations (45 CFR 46 & 21 CFR 56), please be sure to:

- Use only the approved study materials in your research, including the recruitment materials and informed consent documents that have the IRB approval stamp.
- Retain signed informed consent documents for 3 years after the close of the study, when documented consent is required.
- Obtain IRB approval prior to implementing any changes to the study by submitting a Modification Form for Non-Exempt Research or Amendment for Personnel Changes form, as necessary.
- Immediately inform the IRB of (1) all serious and/or unexpected adverse experiences involving risks to subjects or others; and (2) any other unanticipated problems involving risks to subjects or others.
- Stop all research activity if IRB approval lapses, unless continuation is necessary to prevent harm to research participants. Research activity can resume once IRB approval is reestablished.
- Complete a new continuing review form at least three to four weeks prior to the date for continuing review as noted above to provide sufficient time for the IRB to review and approve continuation of the study. We will send a courtesy reminder as this date approaches.

Please be aware that IRB approval means that you have met the requirements of federal regulations and ISU policies governing human subjects research. Approval from other entities may also be needed. For example, access to data from private records (e.g. student, medical, or employment records, etc.) that are protected by FERPA, HIPAA, or other confidentiality policies requires permission from the holders of those records. Similarly, for research conducted in institutions other than ISU (e.g., schools, other colleges or universities, medical facilities, companies, etc.), investigators must obtain permission from the institution(s) as required by their policies. IRB approval in no way implies or guarantees that permission from these other entities will be granted.

Upon completion of the project, please submit a Project Closure Form to the Office for Responsible Research, 1138 Pearson Hall, to officially close the project.

APPENDIX C

STUDY 1: STUDY POSTING FORM AND INFORMED CONSENT

ISU IRB # 1	14-316
Approved Date:	24 October 2014
Expiration Date:	16 June 2019

Clean Copy

STUDY POSTING FORM

Ann Schmidt MUST receive a copy of this form before you send an activation request.

PRINCIPAL INVESTIGATOR (Faculty Supervisor): Daniel Lannin

RESEARCHERS: Max Guyll, PhD, David Vogel, PhD, & Stephanie Madon, PhD

STUDY NAME & NUMBER: College Student Mental Health

BRIEF ABSTRACT:

The purpose of this study is to investigate how information about mental health affects attitudes toward help-seeking.

STUDY DESCRIPTION (Must be exactly as approved by IRB):

This is a two-part study; each part involves completion of several personality measures, rating of different items, and completion of measures concerning preferences and decisions. Your participation in today's online session may last from 31 to 60 minutes. Two weeks from the time you complete this part, you will be emailed a link to the second part, which is also expected to take 31 to 60 minutes. For participating in both parts, you will be compensated with 4 SONA credits.

ELIGIBILITY REQUIREMENTS: You must be 18

DURATION (Minimum 50min.): 120 minutes

CREDITS: 4 credits

PREPARATION: NONE

IRB APPROVAL CODE:

IRB APPROVAL EXPIRATION:

IS THIS AN ONLINE STUDY? Yes

ATTENTION RESEARCHER:

THE STUDY DESCRIPTION POSTED ON SONA MUST BE IDENTICAL TO THAT APPROVED BY IRB. IF YOU NEED TO MODIFY THE DESCRIPTION OF A STUDY, YOU MUST PROVIDE ANN WITH THE NEW IRB-APPROVED DESCRIPTION.

INFORMED CONSENT DOCUMENT

Title of Study: College Student Mental Health

Investigators: Daniel Lannin, MS, Max Guyll, PhD, David Vogel, PhD, Stephanie Madon, PhD

This is a research study. Please take your time in deciding if you would like to participate. Please feel free to contact Daniel Lannin, the principal investigator, if you have any questions or concerns.

INTRODUCTION

The purpose of this study is to investigate how information about mental health affects attitudes toward help-seeking.

DESCRIPTION OF PROCEDURES

This is a two-part study; each part involves completion of several personality measures, rating of different items, and completion of measures concerning preferences and decisions. Your participation in today's online session may last from 31 to 60 minutes. Two weeks from the time you complete this part, you will be emailed a link to the second part, which is also expected to take 31 to 60 minutes. For participating in both parts, you will be compensated with 4 SONA credits.

RISKS

There are no physical risks associated with participating in this study. You are free to skip any questions that you do not wish to answer or that make you feel uncomfortable. If you experience distress during your participation you can discontinue your participation without penalty. Also, if you experience personal distress you can access information about student counseling services at ISU via this website (<http://www.counseling.iastate.edu/>). ISU's counseling services are open Monday through Friday 8 a.m. to 5 p.m., with walk in appointments for new service available Monday through Thursday from 8 a.m. to 3 p.m. and Friday from 8 a.m. to noon. If you are in crisis, please dial 911 or call The National Hopeline Network (1-800-SUICIDE: 1-800-784-8255) to speak to a trained volunteer. This information will also be provided when you complete the survey.

BENEFITS

If you decide to participate in this study you will have the opportunity to participate in psychological research, which individuals often find interesting. It is hoped that the information gained in this study will benefit society by understanding how mental health information influences attitudes towards help-seeking.

ALTERNATIVES TO PARTICIPATION

You do not have to participate in this study. Your course syllabus describes alternatives to participation in research experiments for earning the same course credit.

COSTS AND COMPENSATION

You will not have any costs from participating in this study. You will receive 4 SONA credits for participating in both parts of this two-part online study. Two weeks from the time you complete the initial 31-60 minute study, you will be emailed link to a 31-60 minute follow-up study.

PARTICIPANT RIGHTS

Participation in this study is completely voluntary and you may refuse to participate or leave the study at any time. If you decide not to participate in the study or leave the study early, it will not result in any penalty or loss of benefits to which you are otherwise entitled.

ISU IRB # 1	14-218
Approved Date:	29 October 2014
Expiration Date:	18 June 2018

Item 2

CONFIDENTIALITY:

Records identifying participants will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available. However, federal government regulatory agencies, auditing departments of Iowa State University, and the Institutional Review Board (a committee that reviews and approves human subject research studies) may inspect and/or copy your records for quality assurance and data analysis. These records may contain private information.

To ensure confidentiality to the extent allowed by law, the following measures will be taken: (a) your responses will be combined with the data collected from other participants so that no individual information will be identifiable; (b) only members of the research team will have access to your data; (c) all of your data will be stored in a password protected computer that is located in a restricted and locked room; (d) if the results are presented publicly (e.g., journal article, conference presentation, educational purposes), your identity will remain confidential, and results will only be presented for groups of individuals so that no one person's data are presented. If the results are published, your identity will remain confidential; (e) identifying information that is collected from experimental questionnaires that is necessary to match participant information across study sessions will be removed after data matching is completed.

QUESTIONS OR PROBLEMS

You are encouraged to ask questions at any time during this study.

- For further information about the study contact or Daniel Lannin (515-294-6587, dglannin@iastate.edu) or Dr. Max Guyll (515-294-1582, guyll@iastate.edu).
- If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, (515) 294-4566, irb@iastate.edu, or Director, (515) 294-3115, Office for Responsible Research, Iowa State University, Ames, Iowa 50011.

Please print a copy of this document for your files.

By selecting "yes" below you indicate that you voluntarily agree to participate in this study, and that you have read the information about the study. Clicking yes will take you to the beginning portion of the study. Clicking no will exit the study. Please print this page to retain a copy of the consent form.

Yes, I would like to participate in this study.

No, I would not like to participate in this study.

APPENDIX D

STUDY 1: NO-AFFIRMATION MANIPULATION

Below are a list of 24 common last names, but they are not in alphabetical order. Please alphabetize these names by typing the numbers 1 through 23. For example, you will type a 1 next to the name that is closest to the beginning of the alphabet (i.e., Anderson), and a 23 by the name that is farthest from the beginning of the alphabet (i.e., Zimmerman). Please be as accurate as possible.

Names as presented to participants	Names Alphabetized
Johnson	Anderson
Clark	Brown
Gonzalez	Clark
Quinn	Davis
Perez	Evans
Flores	Flores
Anderson	Gonzalez
Zimmerman	Harris
Young	Johnson
Harris	King
Davis	Lewis
Owens	Miller
Miller	Nelson
Lewis	Owens
Rodriguez	Perez
Smith	Quinn
Brown	Rodriguez
Taylor	Smith
Evans	Taylor
Vasquez	Vasquez
King	Williams
Williams	Young
Nelson	Zimmerman

Next, please answer the following questions

How “out of order” were the names (rate from 1 – 7), 1 = not at all out of order, 7 = very out of order

How enjoyable was this task (rate from 1 – 7) 1 = not at all enjoyable, 7 = very enjoyable

How difficult was this task (rate from 1 – 7) 1 = not at all difficult, 7 = very difficult

How quickly did you perform this task (rate from 1 – 7), 1 = not quickly at all, = very quickly

APPENDIX E

STUDY 1: VALUES-AFFIRMATION MANIPULATION

Below is a list of values, some of which may be important to you, some of which may be unimportant. Please rank your values from 1 to 7, with 1 being the value that is most important to you, and 7 being the value that is least important to you. Please be as honest and as accurate as possible.

- _____ Having Inner Harmony—at peace with myself
 _____ Having Wisdom—a mature understanding of life
 _____ Seeking Pleasure—gratification of desires
 _____ Being Successful—achieving goals
 _____ Being Free—freedom of action and thought
 _____ Being Creative—uniqueness, imagination
 _____ Religion/Spirituality—emphasis on spiritual, not material matters

Below is another list of values, some of which may be important to you, some of which may be unimportant. Please rank your values from 1 to 7, with 1 being the value that is most important to you, and 7 being the value that is least important to you. Please be as honest and as accurate as possible.

- _____ Having Wealth—material possessions, money
 _____ Having Self-respect—belief in one’s own worth
 _____ Being Healthy—not being sick physically or mentally
 _____ Being Intelligent—logical, thinking
 _____ Being Honest—being genuine, sincere
 _____ Being Curious—interested in everything, exploring
 _____ Having Self-Discipline—self-restraint, resistance to temptation

[Note: For the questions below, computer software will replace the words “value 1” and “value 2” with the values ranked as most important in the above scale.]

You selected value 1 and value 2. Which of these two values is most important to you? Value 1 __ Value 2 __

[Note: For the questions below, computer software will replace blanks with the value ranked as most important.]

Think about the value you just selected, which was _____. How important is _____ to you (rate from 1 – 7), 1 = not at all, 7 = very much

How much does _____ tend to guide your behavior (rate from 1 – 7), 1 = not at all, 7 = very much

How proud are you of your value of _____ (rate from 1 – 7), 1 = not at all, 7 = very much

To what extent is _____ something you like about yourself? (rate from 1 – 7), 1 = not at all, 7 = very much

APPENDIX F

STUDY 1: SOCIAL-AFFIRMATION MANIPULATION

Please list the names of 2 people or groups of people with whom you feel you really belong. These can be individual people (e.g., my friend “David” or my cousin “Stacey”), or groups you belong to (e.g., my family or my swim team).

1.

2.

[Note: For the questions below, computer software will replace the word “person/group of people” with the name participant typed above]

Next, please write the type of relationship you have with person 1. (describe in 1-2 words (e.g., friend, parent, cousin, my fraternity, etc.) _____)

How long have you known person 1? _____ years

How positive is this relationship (rate from 1 – 7) 1 = not at all positive, 7 = very positive

How important is this relationship (rate from 1 – 7), 1 = not at all important, 7 = very important

How meaningful is this relationship (rate from 1 – 7), 1 = not at all meaningful, 7 = very meaningful

How much does this relationship make you feel like you belong? (rate from 1 – 7), 1 = not at all, 7 = very much

Please write the type of relationship you have with person/group of people 2. (describe in 1-2 words (e.g., friend, parent, cousin, my fraternity, etc.) _____)

How long have you known person 2 _____ years

How positive is this relationship (rate from 1 – 7) 1 = not at all positive, 7 = very positive

How important is this relationship (rate from 1 – 7), 1 = not at all important, 7 = very important

How meaningful is this relationship (rate from 1 – 7), 1 = not at all meaningful, 7 = very meaningful?

How much does this relationship make you feel like you belong? (rate from 1 – 7), 1 = not at all, 7 = very much

APPENDIX G

STUDY 1: REASSURING INFORMATION

Life being a college student can be many things. You are beginning one of life's big adventures, thinking about careers, and beginning new relationships. College is a time to explore who you are and who you want to be. Along with the excitement of beginning this new adventure can also come stress and other unexpected difficulties such as adjusting to a new environment, starting and ending relationships, and adjusting to the higher expectations of college professors.

College is not always easy for everybody. Older adults often tell students that college is "the time of your life," but for some students it doesn't feel that way. Some students struggle with feeling homesick, may have troubles with their academics, and may be frustrated with their roommates. When students feel this way, one thing that might help them is counseling, which involves talking about the things that are most important to them with a trained professional.

Counseling can treat a variety of concerns students might have such as what major to choose, how to deal with difficult emotions, how to cope with unpleasant emotions, or how to navigate difficult relationships. One goal of counseling is to help students function better and feel better. Research shows that most people who receive counseling experience relief from symptoms and function better than they did before they entered counseling. For some problems counseling may be as effective, or even more effective, than pharmaceutical (drug) therapies. Counseling is linked to improved emotions as well as positive changes in the body and brain. Other benefits to students could include fewer sick days, fewer medical problems, and being more stable at school and at work.

Most counseling sessions are 45-50 minutes long and are strictly confidential. Counselors typically will not release any information to anyone regarding clients or the services they receive without the written permission of the client.

Because college can be stressful there may be times when students find themselves encountering unexpected difficulties. At those times it can be beneficial for them to get help so that their stress is more manageable. Counseling may be an important way to help students successfully navigate college and life's other big adventures.

[361 words]

APPENDIX H

STUDY 1: INFORMATION MANIPULATION CHECK: REASSURING INFORMATION

1. For some problems psychotherapy may be as effective, or even more effective, than _____ therapies.
 - a. chiropractic
 - b. pharmaceutical (drug)
 - c. physical behaviorism
 - d. psychokinetic

2. According to the article, older adults often tell students that college is _____, but for some students it doesn't feel that way.
 - a. "the time of your life"
 - b. "your home away from home"
 - c. "a very difficult time"
 - d. "a time to experiment"

APPENDIX I

STUDY 1: STANDARD INFORMATION

Life being a college student can be many things. Older adults often tell students that college is “the time of your life,” but maybe for you it really doesn’t feel that way. Along with beginning one of life’s big adventures, college can be difficult. One out of every 4 adults between the ages of 18 and 24 has psychological symptoms such as feelings of anxiety or depression, and suicide is the 3rd leading cause of death on US college campuses.

Although rewarding, college can be very stressful. You might sometimes notice yourself struggling with feelings of anxiety or depression. Not managing these troubling feelings can be problematic for your physical health, your relationships, and your academic work. Depression and anxiety are the two greatest impediments to academic performance, and poor mental health is the biggest reason many students drop out of college. When you feel this way, one thing that might help you is counseling, which involves talking about some of the troubling feelings you are having with a trained professional.

Counseling can treat a variety of concerns you might have such as what major to choose, how to deal with anxiety and depression, how to cope with unpleasant emotions, or how to navigate difficult relationships. One goal of counseling is to eliminate or reduce troubling symptoms so that you can function better and feel better. For some problems counseling may be as effective, or even more effective, than pharmaceutical (drug) therapies. Counseling is linked to improved emotions and positive changes in the body and brain. Other benefits to you could include fewer sick days, fewer medical problems, and being more stable at school and at work.

Most counseling sessions are 45-50 minutes long and are strictly confidential. Counselors typically will not release any information to anyone regarding clients or the services they receive without the written permission of the client.

Because college can be stressful there may be times when you find yourself struggling. At those times it can be good for you to get help so that you are not too overwhelmed. Counseling may be an important way to help you successfully navigate college and life’s other big adventures.

[361 words]

APPENDIX J

STUDY 1: INFORMATION MANIPULATION CHECK: STANDARD INFORMATION

1. For some problems psychotherapy may be as effective, or even more effective, than _____ therapies.
 - a. chiropractic
 - b. pharmaceutical (drug)
 - c. physical behaviorism
 - d. psychokinetic

2. What is the 3rd leading cause of death on college campuses?
 - a. Cancer
 - b. Drug overdose
 - c. Automobile accidents
 - d. Suicide

APPENDIX K

STUDY 1: PERCEIVED THREAT OF INFORMATION

For the following questions, we are interested in how you felt about the information you just read. Please answer honestly and accurately.

[Fear]	Not at all						Very much
How much did this message make you feel frightened?	1	2	3	4	5	6	7
How much did this message make you feel tense?	1	2	3	4	5	6	7
How much did this message make you feel nervous?	1	2	3	4	5	6	7
How much did this message make you feel anxious?	1	2	3	4	5	6	7
How much did this message make you feel uncomfortable?	1	2	3	4	5	6	7
[Susceptibility]	Strongly Disagree						Strongly Agree
If I do not seek psychological help, I am at risk for a mental illness.	1	2	3	4	5	6	7
It is likely that I will develop a mental illness if I do not seek psychological help.	1	2	3	4	5	6	7
It is possible that I will develop a mental illness.	1	2	3	4	5	6	7
[Severity]	Strongly Disagree						Strongly Agree
I believe that mental illness is a severe health problem.	1	2	3	4	5	6	7
I believe that mental illness is a serious threat to my health and well-being.	1	2	3	4	5	6	7
I believe that mental illness is a significant disease.	1	2	3	4	5	6	7

APPENDIX L

STUDY 1: POSITIVE AND NEGATIVE AFFECT SCHEDULE

This scale consists of a number of words that describe different feelings and emotions. Read each item and then circle the appropriate answer in the space next to that word. Indicate the extent to which you feel each emotion right now.

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Interested	1	2	3	4	5
Distressed	1	2	3	4	5
Excited	1	2	3	4	5
Upset	1	2	3	4	5
Strong	1	2	3	4	5
Guilty	1	2	3	4	5
Scared	1	2	3	4	5
Hostile	1	2	3	4	5
Enthusiastic	1	2	3	4	5
Proud	1	2	3	4	5
Irritable	1	2	3	4	5
Alert	1	2	3	4	5
Ashamed	1	2	3	4	5
Inspired	1	2	3	4	5
Nervous	1	2	3	4	5
Determined	1	2	3	4	5
Attentive	1	2	3	4	5
Jittery	1	2	3	4	5
Active	1	2	3	4	5
Afraid	1	2	3	4	5

APPENDIX M

STUDY 1: SELF-STIGMA OF SEEKING PSYCHOLOGICAL HELP SCALE

INSTRUCTIONS: 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.

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

APPENDIX N

STUDY 1: INVENTORY OF ATTITUDES TOWARD SEEKING MENTAL HEALTH

SERVICES

The term professional refers to individuals who have been trained to deal with mental health problems (e.g., psychologists, psychiatrists, social workers, and family physicians). The term psychological problems refer to reasons one might visit a professional. Similar terms include mental health concerns, emotional problems, mental troubles, and personal difficulties. For each item, indicate whether you disagree, somewhat disagree, are undecided, somewhat agree, or agree:

	Disagree	Somewhat Disagree	Are Undecided	Somewhat Agree	Agree
There are certain problems which should not be discussed outside of one's immediate family.	0	1	2	3	4
I would have a very good idea of what to do and who to talk to if I decided to seek professional help for psychological problems.	0	1	2	3	4
I would not want my significant other (spouse, partner, etc.) to know if I were suffering from psychological problems.	0	1	2	3	4
Keeping one's mind on a job is a good solution for avoiding personal worries and concerns.	0	1	2	3	4
If good friends asked my advice about a psychological problem, I might recommend that they see a professional.	0	1	2	3	4
Having been mentally ill carries with it a burden of shame.	0	1	2	3	4
It is probably best not to know <i>everything</i> about oneself.	0	1	2	3	4
If I were experiencing a serious psychological problem at this point in my life, I would be confident that I could find relief in psychotherapy.	0	1	2	3	4
People should work out their own problems; getting professional help should be a last resort.	0	1	2	3	4

If I were to experience psychological problems, I could get professional help if I wanted to	0	1	2	3	4
Important people in my life would think less of me if they were to find out that I was experiencing psychological problems	0	1	2	3	4
Psychological problems, like many things, tend to work out by themselves	0	1	2	3	4
It would be relatively easy for me to find the time to see a professional for psychological problems.	0	1	2	3	4
There are experiences in my life I would not discuss with anyone.	0	1	2	3	4
I would want to get professional help if I were worried or upset for a long period of time.	0	1	2	3	4
I would be uncomfortable seeking professional help for psychological problems because people in my social or business circles might find out about it.	0	1	2	3	4
Having been diagnosed with a mental disorder is a blot on a person's life.	0	1	2	3	4
There is something admirable in the attitude of people who are willing to cope with their conflicts and fears without resorting to professional help.	0	1	2	3	4
If I believed I was having a mental breakdown, my first inclination would be to get professional attention.	0	1	2	3	4
I would feel uneasy going to a professional because of what some people would think.	0	1	2	3	4
People with strong characters can get over psychological problems by themselves and would have little need for professional help.	0	1	2	3	4

I would willingly confide intimate matters to an appropriate person if I thought it might help me or a member of my family.	0	1	2	3	4
Had I received treatment for psychological problems, I would not feel that it ought to be "covered up."	0	1	2	3	4
I would be embarrassed if my neighbor saw me going into the office of a professional who deals with psychological problems.	0	1	2	3	4

APPENDIX O

STUDY 1: SELF-AFFIRMATION MANIPULATION CHECK

The task that I completed earlier where I a) reflected on important personal values b) reflected on important close relationships, c) reflected on important personal values and close relationships, d) alphabetized different words... **made me aware of...**

	Strongly Disagree		Disagree		Agree		Strongly agree
Who I am	-3	-2	-1	0	1	2	3
Peoples who are important to me	-3	-2	-1	0	1	2	3
My values (the principles and standards by which I try to live my life).	-3	-2	-1	0	1	2	3
A sense of belonging	-3	-2	-1	0	1	2	3
Guiding principles for my life	-3	-2	-1	0	1	2	3

APPENDIX P

STUDY 1: DEMOGRAPHIC INFORMATION

1. What is your gender identity?
 - Female
 - Female to male transgender
 - Male
 - Male to female transgender
 - Not sure
 - Other (please specify): _____

2. Do you identify as LGBT?
 - Yes
 - No

2. What age did you become on your most recent birthday? _____

3. How do you describe your ethnicity/race?
 - _____ White (not of Latino or Hispanic ethnicity)
 - _____ Latino or Hispanic
 - _____ Asian or Pacific Islander
 - _____ Black/African American
 - _____ American Indian or Alaskan Native
 - _____ Other (Please describe or explain)

4. Are you a native English speaker? Yes No

5. If not a native speaker, are you fluent in English? Fluent Not fluent

6. What is your relationship status?
 - Single, never married or partnered
 - In a dating relationship
 - Married or domestic partnership
 - Widowed
 - Divorced
 - Separated
 - Other (Please specify)

7. What is the highest degree or level of school you have completed? If currently enrolled, highest degree received.

Some college credit, no degree

Year in school

Freshman

Sophomore

Junior

Senior

Other (please specify)

Associate's degree

Bachelor's degree

Master's degree

Professional degree

Doctorate degree

Other (please specify) _____

8. Have you ever sought psychological help (e.g., psychotherapy, counselor, student counseling services, group counseling, etc.)? If yes, how many months after you first noticed reason for concern did you seek help from a professional? Yes _____ No

9. Have you ever sought help from ...

Internet Websites friends family members a religious or spiritual advisor (pastor, priest, rabbi, guru, elder) a family physician other (please specify)

10. Are you currently seeking psychological help? Yes No

11. Do you think you will ever utilize Student Counseling Services while at ISU? Yes No

APPENDIX Q

STUDY 1: K6+ PSYCHOLOGICAL DISTRESS MEASURE

During the past 30 days, about how often did you feel...

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
...nervous?	1	2	3	4	5
...hopeless?	1	2	3	4	5
...restless or fidgety?	1	2	3	4	5
...so depressed that nothing could cheer you up?	1	2	3	4	5
...that everything was an effort	1	2	3	4	5
...worthless?	1	2	3	4	5

APPENDIX R

STUDY 1: END OF SURVEY

Two weeks from the time you complete this study, you will be emailed a link to a 31-60 minute follow-up study.

If you experience personal distress you can access information about student counseling services at ISU via this website (<http://www.counseling.iastate.edu/>). ISU's counseling services are open Monday through Friday 8 a.m. to 5 p.m., with walk in appointments for new service available Monday through Thursday from 8 a.m. to 3 p.m. and Friday from 8 a.m. to noon. If you are in crisis, please dial 911 or call The National Hopeline Network (1-800-SUICIDE: 1-800-784-8255) to speak to a trained volunteer. This information will also be provided when you complete the survey.

Thank you again for your participation in this study!

APPENDIX S

STUDY 1: ONLINE DEBRIEFING STATEMENT

The aim of this research is to see whether making people feel good about themselves—something we call self-affirmation—will increase their receptivity to information about seeking psychological help. We are interested in seeing if reminding people of important aspects of their lives will bolster their self-concept so that they are less resistant to information about psychological help.

We ask that you do not discuss this experiment with anyone. We would like to avoid causing participants to artificially alter their behavior, as this could invalidate the data we collect.

Lastly, if you experience personal distress you can access information about student counseling services at ISU via this website (<http://www.counseling.iastate.edu/>). ISU's counseling services are open Monday through Friday 8 a.m. to 5 p.m., with walk in appointments for new service available Monday through Thursday from 8 a.m. to 3 p.m. and Friday from 8 a.m. to noon. If you are in crisis, please dial 911 or call The National Hopeline Network (1-800-SUICIDE: 1-800-784-8255) to speak to a trained volunteer. This information will also be provided when you complete the survey.

Thank you again for your participation in this study!

APPENDIX T

STUDY 2: IRB APPROVAL

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Institutional Review Board
Office for Responsible Research
Vice President for Research
1138 Pearson Hall
Ames, Iowa 50011-1207
515-284-4566
FAX 515-284-4477

Date: 4/23/2015

To: Daniel Lannin
112W Lagomarcino Hall

CC: Dr. David Vogel
W112 Lagomarcino Hall
Dr. Max Guyll
W112 Lagomarcino

From: Office for Responsible Research

Title: Testing an Online Self-affirmation Intervention

IRB ID: 15-165

Approval Date: 4/23/2015 **Date for Continuing Review:** 4/21/2017

Submission Type: New **Review Type:** Expedited

The project referenced above has received approval from the Institutional Review Board (IRB) at Iowa State University according to the dates shown above. Please refer to the IRB ID number shown above in all correspondence regarding this study.

To ensure compliance with federal regulations (45 CFR 46 & 21 CFR 56), please be sure to:

- **Use only the approved study materials** in your research, including the recruitment materials and informed consent documents that have the IRB approval stamp.
- **Retain signed informed consent documents for 3 years after the close of the study**, when documented consent is required.
- **Obtain IRB approval prior to implementing any changes** to the study by submitting a Modification Form for Non-Exempt Research or Amendment for Personnel Changes form, as necessary.
- **Immediately inform the IRB of (1) all serious and/or unexpected adverse experiences** involving risks to subjects or others; and (2) **any other unanticipated problems** involving risks to subjects or others.
- **Stop all research activity if IRB approval lapses**, unless continuation is necessary to prevent harm to research participants. Research activity can resume once IRB approval is reestablished.
- **Complete a new continuing review form at least three to four weeks prior to the date for continuing review** as noted above to provide sufficient time for the IRB to review and approve continuation of the study. We will send a courtesy reminder as this date approaches.

Please be aware that IRB approval means that you have met the requirements of federal regulations and ISU policies governing human subjects research. Approval from other entities may also be needed. For example, access to data from private records (e.g. student, medical, or employment records, etc.) that are protected by FERPA, HIPAA, or other confidentiality policies requires permission from the holders of those records. Similarly, for research conducted in institutions other than ISU (e.g., schools, other colleges or universities, medical facilities, companies, etc.), investigators must obtain permission from the institution(s) as required by their policies. IRB approval in no way implies or guarantees that permission from these other entities will be granted.

Upon completion of the project, please submit a Project Closure Form to the Office for Responsible Research, 1138 Pearson Hall, to officially close the project.

Please don't hesitate to contact us if you have questions or concerns at 515-284-4566 or IRB@iastate.edu.

APPENDIX U

STUDY 2: MTURK HIT DESCRIPTION

Answer a survey about mental health and attitudes toward counseling

Requestor: Iowa State Counseling Research

Reward: \$0.12

Time allotted: 1 hour (The amount of time you have to complete the HIT, from the moment you accept it)

HITs Available: 1

Description: This survey should take 15 minutes or less. To complete you will answer questions about attitudes towards counseling. You must be 1) 18 years or older; 2) currently struggling with depression, anxiety, stress, homesickness, relationships, adjustment to school or work, self-esteem, perfectionism, procrastination, grief/loss, or another mental health concern; 3) NOT currently seeing a therapist/counselor; and 4) be a resident or citizen of the United States.

Keywords: survey psychology health stress counseling personality research quick

APPENDIX V

STUDY 2: INFORMED CONSENT

IRB # 1	15-716
Approved Date:	22 April 2015
Expiration Date:	21 April 2017

1. Recruitment Materials and Informed Consent

INFORMED CONSENT DOCUMENT

Title of Study: Mental Health and Counseling

Investigators: Daniel Lannin, MS, David Vogel, PhD, Max Guyll, PhD, Stephanie Madon, PhD
This is a research study. Please take your time in deciding if you would like to participate. Please feel free to contact Daniel Lannin, the principal investigator, if you have any questions or concerns.

INTRODUCTION

The purpose of this study is to investigate attitudes about counseling for personal concerns such as anxiety and depression.

WHO IS ELIGIBLE TO PARTICIPATE IN THIS STUDY?

You are being asked to take part in this study if you have interest in understanding more about counseling for mental health concerns such as anxiety or depression. You must be 18 years or older. You can only sign up for this study if the following are true for you:

#1: You are 18 years or older.

#2: You are currently struggling with depression, anxiety, stress, homesickness, relationships, adjustment to school or work, self-esteem, perfectionism, procrastination, grief/loss, or another mental health concern.

#3: You are not currently seeing a therapist/counselor.

#4: You are a resident or citizen of the United States.

DESCRIPTION OF PROCEDURES

This is a research study that involves completion of demographic information and assessments pertaining to your values, personality, mental health, and attitudes toward counseling. Additionally, you will be asked to complete measures concerning your preferences and decisions about mental health concerns and counseling. Your participation in today's online session should take 15 minutes or less.

RISKS

There are no physical risks associated with participating in this study. If you experience distress during your participation you can discontinue your participation without penalty. If you are in crisis, please dial 911 or call The National Hopeline Network (1-800-SUICIDE: 1-800-784-8255) to speak to a trained volunteer. This information will also be provided when you complete the survey.

BENEFITS

If you decide to participate in this study you will have the opportunity to participate in psychological research, which individuals often find interesting. It is hoped that the information gained in this study will benefit society by understanding more about the process of seeking counseling for mental health concerns.

COSTS AND COMPENSATION

You will not have any costs from participating in this study. For participating and for correctly identifying attention-checking items, you will be compensated with \$0.12. Attention-checking items are items for which the survey-taker is instructed to provide a specific response, thereby ensuring that items are being read.

PARTICIPANT RIGHTS

Participation in this study is completely voluntary and you may refuse to participate or leave the study at any time. However, because this study is part of MTURK's compensation system, if you decide not to participate in the study, if you attempt to participate but are ineligible due to not matching the conditions for participation described above, or leave the study early—you will not be financially compensated.

1. Recruitment Materials and Informed Consent

CONFIDENTIALITY:

Records identifying participants will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available. However, federal government regulatory agencies, auditing departments of Iowa State University, and the Institutional Review Board (a committee that reviews and approves human subject research studies) may inspect and/or copy your records for quality assurance and data analysis. These records may contain private information. To ensure confidentiality to the extent allowed by law, the following measures will be taken: (a) your responses will be combined with the data collected from other participants so that no individual information will be identifiable; (b) only members of the research team will have access to your data; (c) all of your data will be stored in a password protected computer that is located in a restricted and locked room; (d) if the results are presented publicly (e.g., journal article, conference presentation, educational purposes), your identity will remain confidential, and results will only be presented for groups of individuals so that no one person's data are presented. If the results are published, your identity will remain confidential.

QUESTIONS OR PROBLEMS

You are encouraged to ask questions at any time during this study.

- For further information about the study contact or Daniel Lannin (515-294-9668, dglannin@iastate.edu) or Dr. David Vogel 515-294-1582, dvogel@iastate.edu).
- If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, (515) 294-4366, irb@iastate.edu, or Director, (515) 294-3115, Office for Responsible Research, Iowa State University, Ames, Iowa 50011.

Please print a copy of this document for your files.

By selecting "yes" below you indicate that you voluntarily agree to participate in this study, and that you have read the information about the study. Clicking yes will take you to the beginning portion of the study. Clicking no will exit the study. Please print this page to retain a copy of the consent form.

Yes, I would like to participate in this study.

No, I would not like to participate in this study.

APPENDIX W

STUDY 2: DEMOGRAPHIC/SCREENING QUESTIONS

1. What is your gender?
 - Female
 - Male
 - Other (please specify): _____
2. What age are you? [enter number] _____
3. How do you describe your ethnicity/race?
 - _____ White (not of Latino or Hispanic ethnicity)
 - _____ Latino or Hispanic
 - _____ Asian or Pacific Islander
 - _____ Black/African American
 - _____ American Indian or Alaskan Native
 - _____ Other (Please describe or explain)
4. Are you a native English speaker? Yes No
5. Are you a resident or citizen of the United States? Yes No
6. What state do you live in? _____
7. What is the highest degree or level of school you have completed? If currently enrolled, highest degree received.
 - Some high school
 - High school Diploma
 - Some college credit, no degree
 - Bachelor degree
 - Master degree
 - Professional/Doctorate degree
 - Other (please specify) _____
8. Are you currently struggling with any of the following (please check all)?
 - Anxiety
 - Depression
 - Stress
 - Relationship concerns
 - Low self-esteem
 - Perfectionism
 - Procrastination
 - Grief/loss
 - Other mental health concern (please specify) _____
9. Are you currently seeing a therapist or a counselor? Yes No
10. Have you ever sought psychological help in the past (e.g., psychotherapy, counselor, student counseling services, group counseling, psychiatrist, medication from general practitioner, etc.)? If yes, how many months after you first noticed reason for concern did you seek help from a professional? Yes _____ No _____

APPENDIX X

STUDY 2: VALUES-AFFIRMATION SURVEY

Below is a list of values, some of which may be important to you, some of which may be unimportant. Please rank your values from 1 to 7, with 1 being the value that is most important to you, and 7 being the value that is least important to you. Please be as honest and as accurate as possible.

- _____ Having Inner Harmony—at peace with myself
- _____ Having Wisdom—a mature understanding of life
- _____ Sense of Belonging—feeling that others care about me
- _____ Being Successful—achieving goals
- _____ Being Free—freedom of action and thought
- _____ Being Creative—uniqueness, imagination
- _____ Religion/Spirituality—emphasis on spiritual, not material matters

Below is another list of values, some of which may be important to you, some of which may be unimportant. Please rank your values from 1 to 7, with 1 being the value that is most important to you, and 7 being the value that is least important to you. Please be as honest and as accurate as possible.

- _____ Freedom—freedom of action and thought
- _____ True Friendship—close, supportive friends
- _____ Being Healthy—not being sick physically or mentally
- _____ Being Intelligent—logical, thinking
- _____ Being Honest—being genuine, sincere
- _____ Being Curious—interested in everything, exploring
- _____ Having Self-Discipline—self-restraint, resistance to temptation

[Note: For the questions below, computer software will replace the words “value 1” and “value 2” with the values ranked as most important in the above 2 scales.]

You selected value 1 and value 2. Using the slider, please indicate the relative importance of each of these values from 1-100.

Value 1 __

Value 2 __

[Note: For the questions below, computer software will replace blanks with the value ranked as most important.]

Think about _____ [highest rated value from previous question]. How important is _____ to you (rate from 1 – 7), 1 = not at all, 7 = very important

To what extent does _____ give your life a sense of purpose? (rate from 1 – 7) 1 = not at all, 7 = very much so

How much does _____ tend to guide your behavior (rate from 1 – 7), 1 = not at all, 7 = very much

How proud are you of your value of _____ (rate from 1 – 7), 1 = not at all, 7 = very much

To what extent is _____ something you like about yourself? (rate from 1 – 7), 1 = not at all, 7 = very much

To what extent does _____ guide how you live your life? (rate from 1 – 7) 1 = not at all, 7 = very much

To what extent does _____ give your life a sense of meaning? (rate from 1 – 7) 1 = not at all, 7 = very much

APPENDIX Y

STUDY 2: HELP-SEEKING INFORMATION

Please read the following article carefully. After you read the article we will ask you questions about what you just read, to see whether or not you understood it.

Do you ever feel too overwhelmed to deal with your problems?

If so, you're not alone. According to the National Institute of Mental Health, more than 25% of American adults experience depression, anxiety or another mental disorder in any given year. Others need help coping with a serious illness, losing weight, or stopping smoking. Still others struggle to cope with relationship troubles, job loss, the death of a loved one, stress, substance abuse or other issues. And these problems can often become debilitating.

When should you consider counseling?

A psychologist can help you work through such problems. Through counseling, psychologists help people of all ages live happier, healthier and more productive lives.

Signs that you could benefit from counseling include:

- You feel an overwhelming, prolonged sense of helplessness and sadness.
- Your problems don't seem to get better despite your efforts and help from family and friends.
- You find it difficult to concentrate on work assignments or to carry out other everyday activities.
- You worry excessively, expect the worst or are constantly on edge.
- Your actions, such as drinking too much alcohol, using drugs or being aggressive, are harming you or others.

How effective is counseling?

Hundreds of studies have found that counseling helps people make positive changes in their lives.

Most reviews have found that the average person who engages in counseling is better off by the end of treatment than 80 percent of those who don't receive treatment at all.

APPENDIX Z

STUDY 2: INFORMATION QUIZ

[Note: Participants are notified whether their answers were correct or incorrect.]

To make sure that you carefully read the previous information, please complete this brief quiz.

1. There is significant evidence showing that counseling is NOT an effective treatment for many mental health concerns. True or False
2. The average person who utilizes counseling is better off by the end of treatment than most of those who don't receive any treatment at all. True or False

APPENDIX AA

STUDY 2: THREAT OF INFORMATION (FEAR)

For the following questions, please select the answer that most accurately reflects your reaction to the information you just read. There are no “wrong” answers, just rate the statements as you honestly feel or believe. It is important that you answer every item.

[Fear]	Not at all						Very much	
How much did this message make you feel frightened?	1	2	3	4	5	6	7	
How much did this message make you feel tense?	1	2	3	4	5	6	7	
How much did this message make you feel nervous?	1	2	3	4	5	6	7	
How much did this message make you feel anxious?	1	2	3	4	5	6	7	
How much did this message make you feel uncomfortable?	1	2	3	4	5	6	7	

APPENDIX AB

STUDY 2: POSITIVE AND NEGATIVE AFFECT SCHEDULE

This scale consists of a number of words that describe different feelings and emotions. Read each item and then circle the appropriate answer in the space next to that word. Indicate the extent to which you feel each emotion right now.

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Interested	1	2	3	4	5
Distressed	1	2	3	4	5
Excited	1	2	3	4	5
Upset	1	2	3	4	5
Strong	1	2	3	4	5
Guilty	1	2	3	4	5
Scared	1	2	3	4	5
Hostile	1	2	3	4	5
Enthusiastic	1	2	3	4	5
Proud	1	2	3	4	5
Irritable	1	2	3	4	5
Alert	1	2	3	4	5
Ashamed	1	2	3	4	5
Inspired	1	2	3	4	5
Nervous	1	2	3	4	5
Determined	1	2	3	4	5
Attentive	1	2	3	4	5
Jittery	1	2	3	4	5
Active	1	2	3	4	5
Afraid	1	2	3	4	5

APPENDIX AC

STUDY 2: STRESS APPRAISAL OF COUNSELING

Items Adapted from Stress Appraisal Measure

For the following Items, please consider what it would be like to seek counseling for problem you might be experiencing – such as depression, anxiety, relationship difficulties, or some other mental health concern. Please select the answer that most accurately reflects your thoughts regarding what it would be like to seek counseling. There are no “wrong” answers, just rate the statements as you honestly feel or believe. It is important that you answer every item.

[Anticipated growth or gain from counseling]	Not at all	Slightly	Moderately	Considerably	Extremely
Is counseling going to have a positive impact on me?	1	2	3	4	5
How eager am I to tackle my problem(s) in counseling?	1	2	3	4	5
To what extent can I become a stronger person because of counseling?	1	2	3	4	5
To what extent am I excited thinking about the outcome of counseling?	1	2	3	4	5
[Self-Controllability - the individual's personal coping resources in meeting demands of counseling]	Not at all	Slightly	Moderately	Considerably	Extremely
Do I have the ability to do well in counseling?	1	2	3	4	5
Do I have what it takes to do well in counseling?	1	2	3	4	5
Will I be able to overcome the problems I am facing through counseling?	1	2	3	4	5
Do I have the skills necessary to achieve a successful outcome to my problems in counseling?	1	2	3	4	5

APPENDIX AD

STUDY 2: SELF-STIGMA OF SEEKING HELP SCALE

INSTRUCTIONS: 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.

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

APPENDIX AE

STUDY 2: BELIEFS ABOUT PSYCHOLOGICAL SERVICES SCALE

Instructions: Please rate the following statements using the scale provided. Select the answer that most accurately reflects your attitudes and beliefs about seeking psychological services. There are no “wrong” answers, just rate the statements as you honestly feel or believe. It is important that you answer every item.

	Strongly Disagree		Strongly Agree			
1. If a good friend asked my advice about a serious problem, I would recommend that he/she see a psychologist.	1	2	3	4	5	6
2. I would be willing to confide my intimate concerns to a psychologist.	1	2	3	4	5	6
3. Seeing a psychologist is helpful when you are going through a difficult time in your life.	1	2	3	4	5	6
4. At some future time, I might want to see a psychologist.	1	2	3	4	5	6
5. If I believed I were having a serious problem, my first inclination would be to see a psychologist	1	2	3	4	5	6
6. I would see a psychologist if I were worried or upset for a long period of time.	1	2	3	4	5	6

APPENDIX AF

STUDY 2: K6+ PSYCHOLOGICAL DISTRESS MEASURE

This form has 14 statements about how you have felt OVER THE PAST 30 DAYS. Please read each statement and think about how often you felt that way over the last 30 days. Then select the answer that is closest to this.

During the past 30 days, about how often did you feel...

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
...nervous?	1	2	3	4	5
...hopeless?	1	2	3	4	5
...restless or fidgety?	1	2	3	4	5
...so depressed that nothing could cheer you up?	1	2	3	4	5
...that everything was an effort	1	2	3	4	5
...worthless?	1	2	3	4	5

APPENDIX AG

STUDY 2: DECISION TO BE AWARE OF DISTRESS

One of the questionnaires that you just completed was a way to measure how distressed you might be, compared to a large sample of American adults. Would you like to see the results of that questionnaire, and see how distressed you rated yourself?

Yes No

[If participant clicks YES, survey software will display the following; if NO, survey skips to DECISION TO SEEK HELP – see next page.]

Your score is: _____

Prior research has indicated:

Scores below a 5 are usually indicative of lower levels of mental distress.

Scores higher than or equal to 5, but lower than 13, usually indicates a moderate level of distress. About 28% of the population scores in this range. If you scored in this range you could likely benefit from consulting with a mental health professional—such as a psychologist, psychiatrist, or mental health counselor—to see if you could benefit from treatment.

Scores equal to or higher than 13 usually indicate that you may be experiencing a more severe level of distress. About 6% of the population scores in this range. If you scored in this range, you would likely benefit a great deal from seeking help from a mental health professional—such as a psychologist, psychiatrist, or mental health counselor.

Note: the scores are based on your own self-reported distress, and do not constitute a professional diagnosis or professional advice concerning mental health treatment.

APPENDIX AH

STUDY 2: DECISION TO SEEK HELP

Thank you for your participation in this survey so far. Would you like information about how to find a psychologist?

Yes No

[If participant clicks YES, survey software will display the following; if NO, survey skips to debriefing.]

How do I find a psychologist?

If you plan to use your insurance or employee assistance program to pay for psychotherapy, you may need to select a psychologist who is part of your insurance panel or employee assistance program. But if you're free to choose, there are many ways to find a psychologist:

- Ask trusted family members and friends.
- Ask your primary care physician, obstetrician/gynecologist, pediatrician or another health professional. If you're involved in a divorce or other legal matters, your attorney may also be able to provide referrals.
- Search online for psychologists' websites.
- Contact your area community mental health center.
- Consult a local university or college department of psychology.
- Call your local or state psychological association, which may have a list of practicing psychologists organized by geographic area or specialty.

Or use a trusted online directory, such as APA's Psychologist Locator Service. This service makes it easy for you to find practicing psychologists in your area.

Would you like a link to APA's Psychologist Locator Service?

Yes No

[If participant clicks YES, survey software will display a link to APA's Psychologist Locator Service { <http://locator.apa.org/index.cfm?event=search.text> }

APPENDIX AI

STUDY 2: ASSESSMENT OF DISTRACTED SURVEY-TAKING

You are nearly done with this survey. Before we provide you with a debriefing statement, to tell you more about the study you have been taking, we would like to ask one final question. **Your answers to these questions will NOT affect your eligibility for payment.**

I took this survey:

(check all that apply)

at home__

at work__

in multiple places __ (please specify)

at another location __ (please specify)

While I was taking this survey, I was doing the following activities:

(please check all that apply)

Only working on this survey__

Utilizing multiple tabs on my Internet browser__

Listening to music__

Watching TV or other entertainment__

Exercising__

Browsing other websites__

Talking to another person or to other people who were physically present__

Talking on the phone __

Taking breaks to do other things__ (please specify)

Other__ (please specify)

Approximately how many people were in the room or enclosed space where you took the survey? _____ (enter number)

On what kind of device did take this survey?

Laptop or desktop computer__

Tablet or phone__

Other__ (please specify)

APPENDIX AJ

STUDY 2: ONLINE DEBRIEFING STATEMENT

Thank you again for your participation in this study!

To receive your confirmation code, which will enable you to receive payment, please click the arrow at the bottom of the screen.

About this research:

The aim of this research is to see whether reminding people of important aspects of their identity—something we call self-affirmation—will increase their receptivity to information about seeking psychological help. We are interested in seeing if reflecting on important personal values enables people to be more open to information about psychological help.

We ask that you do not discuss this experiment with anyone. We would like to avoid causing participants to artificially alter their behavior, as this could invalidate the data we collect.

Lastly, if you are in crisis, please dial 911 or call The National Hopeline Network (1-800-SUICIDE: 1-800-784-8255) to speak to a trained volunteer. If you are interested in finding a psychologist, please contact APA's Psychologist Locator Service (<http://locator.apa.org/index.cfm?event=search.text>).