Evaluating the use of social norms in treatment seeking attitudes and preliminary behaviors

A Dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Psychology

by

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August 2017
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Evaluating the use of social norms in treatment seeking attitudes and preliminary behaviors

be accepted in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

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August, 2017
Abstract

Although there are many evidence-based treatments for mental health issues, fewer than 50% of people who suffer from mental illness seek professional help in the United States (Wang et al., 2005). Outreach programs for depression face additional challenges because some depressive symptoms, including negative biases towards information relevant to oneself, tends to decrease the ability of the individual to apply positive information to one’s one situation (such as hope for successful treatment; (Lienemann, Siegel, & Crano, 2013). Social normative influence has been shown to strongly influence behavior in various settings (Cialdini, 2008), and yet many public outreach efforts use negative social norms to highlight issues with treatment seeking, suggesting that it is abnormal to seek treatment, or something that is not approved of by most people. The effect of social norms in this context has not been examined. The current study aims to determine whether including positive and negative social norms statement in depression Public Service Announcements (PSAs) have an impact on treatment seeking intentions, attitudes, and initial treatment-seeking behaviors. Participants were randomized to one of five norms conditions – descriptive, injunctive, combination (i.e., descriptive and injunctive), anti-norms (i.e., negative normative statement), and the control condition with no norms statement. Results indicated that anti-norms statements and descriptive norm statements were related to lower intentions and attitudes than injunctive norms and the combination norms statements. The results support the idea that commonly used phrases in outreach material supporting negative normative information should be used
with caution, and that injunctive normative statements have a powerful effect relative to other norms statements in increasing the effect of outreach PSAs.
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Chapter 1: Significance of the Problem

Depression is a highly burdensome problem in the United States.

Mental health accounts for four of the top 10 diseases causing disability in the United States, and it is expected that by the year 2030 depression will pose the highest disease burden of any class of illness (Kohn, Saxena, Levav, & Saraceno, 2004). This is especially relevant because depression is the most common mental health problem, with 29.9% of individuals in the United States having experienced at least one episode of clinical depression in a lifetime (Kessler, Petukhova, Sampson, Zaslavsky, & Wittchen, 2012). For many of these individuals, depression is chronic, and can lead to significant and ongoing interference with functioning, including disability. In fact, the World Health Organization has noted that in high-income countries, depression is the leading cause of disability (Murray, Lopez, Mathers, & Stein, 2001). Depression is also highly associated with an increased risk for early death, and even sub-threshold depression has been found to be highly correlated with an increased risk of mortality compared with non-depressed samples (Cuijpers et al., 2013; Cuijpers & Smit, 2002).

The financial burden of depression is also well-documented, not only in terms of treatment costs, but also because depression is the leading cause of absenteeism and reduced productivity at work (Donohue & Pincus, 2007). According to the CDC, depression accounts for about 200 million lost workdays each year, costing employers up to $44 billion annually (“CDC.gov,” n.d.). Worldwide, depression accounts for more years of disability than any other illness, not only because depression is common but also because it often starts at a young age and often recurs throughout a lifetime (World Health Organization, 2007). This recurrence is at least in part due to the fact that the
majority of individuals suffering from depression do not get treatment, which is uncommon compared to the other diseases with high disability burden (Andrews & Titov, 2007).

**Treatment for depression can be successful.**

Nearly a dozen psychological treatments for depression have been rigorously tested to meet evidence-based standards, and dozens of medications have FDA approval for psychiatric treatment of depression. Several types and derivatives of psychotherapy have shown significant benefits, some of which that have met the standards for evidence-based practice, including cognitive therapy, behavioral activation, and interpersonal psychotherapy (APA Presidential Task Force on Evidence-Based Practice, 2006). One study indicated that 48% of severely depressed participants responded to cognitive therapy, 76% of severely depressed clients responded to behavioral activation, and 49% of severely depressed participants responded to antidepressant treatment (Dimidjian et al., 2006). Several self-help options have scientifically shown significant benefit as well, especially when assisted by trained coaches or therapists (Andrews, Cuijpers, Craske, McEvoy, & Titov, 2010; Australian Psychological Society, 2010; Eells, Barrett, Wright, & Thase, 2015). Ultimately, the mental health field has ample data and theory to guide effective treatment of depression for the majority of individuals who seek treatment.

**Many people with depression never seek treatment.**

Although the benefits of seeking help have been well-established, treatment-seeking remains low for depression and for other mental health disorders. Studies estimate that between 51% - 62% (Kessler et al., 2003; Mojtabai, 2009) of individuals suffering from depression in the United States will seek professional help, and these rates
are drastically lower in some geographical areas, reaching levels of 10-30% in many countries (Wang et al., 2007). Rates in some groups within the United States are also significantly lower, with depressed college students seeking treatment an estimated 36% of the time (Eisenberg, Golberstein, & Gollust, 2007). It is important to note that treatment-seeking for mental health issues in general is quite low, with only about 41% of individuals diagnosed with a DSM-IV disorder having sought treatment in the past year (Wang et al., 2005). Furthermore, depressive symptoms are negatively correlated with positive treatment-seeking attitudes; in other words, the more depressed individuals are, the less positive their attitudes are towards treatment, and thus the less likely they are to seek treatment (Keeler, Siegel, & Alvaro, 2013; Siegel, Lienemann, & Tan, 2014). This may account for the finding that that median time it takes for individuals in the U.S. to seek treatment for depression is seven years (Kessler, Olfson, & Berglund, 1998).

**Improving treatment-seeking would have a significant public health impact.**

Given the substantial literature indicating the efficacy of evidence-based therapy for depression, it stands to reason that increasing treatment-seeking could significantly reduce the incidence and costs of depression. Research demonstrates that evidence-based therapies are not only effective in treating a current episode of depression as noted above, but can also reduce relapse relative to not receiving treatment. For example, in one study it was demonstrated that individuals who experience a depressive episode will experience an average of four total depressive episodes, with an average of 20 weeks duration per episode. (Judd, 1997). One author noted, “It is the chronicity of unipolar MDD that has proven to be so debilitating” (Judd, 2000, p. 219). However, in multiple studies that look at the effects of interrupting this natural course of depression with evidence-based
therapeutic interventions, it has been found that the natural course of depression can be substantially altered with evidence-based treatment, such that the risks of relapse can be significantly reduced. One study was able to reduce the risk of recurrence from 80% to 25% using cognitive behavioral therapy over a 2-year period. (Fava, Rafanelli, Grandi, Conti, & Belluardo, 1998). In a six-year follow-up of the same sample, the risk was still substantial with 40% of those receiving the cognitive behavioral intervention reporting relapse, as opposed to 90% of those who did not receive this intervention (Fava et al., 2004). Another study displayed a similar reduction of relapse risk with a different evidence-based treatment, suggesting that the risk of relapse for individuals who were at higher risk for relapse was reduced by 50% using mindfulness-based cognitive therapy (Teasdale et al., 2000). Thus, it logically follows that seeking professional treatment would be an essential step in reducing not only the effects of a given episode, but the larger public health impact of the chronicity of untreated depression.

Although there are many modes of treatment with research support (Draper & O’Donohue, 2011), professional in-person treatment-seeking has a particularly interesting role in regard to treatment-seeking. It has been documented that many people prefer to turn to friends, family members or clergy members in the case of depression or other struggles (Jorm et al., 2000). Additionally, many individuals turn to less intensive or lower cost interventions, such as self-help books or web-based interventions (Alverson et al., 2008; Griffiths & Christensen, 2007). While these supports and treatments should not be dismissed, it’s also worth noting that we currently do not have an understanding regarding the impact of these lower-intensity interventions at a public health level; the effects of informal treatments largely remain unstudied, and lower-intensity interventions
such as web-based therapy tend to have limited impact without the oversite of a ‘coach’ or psychological professional guiding through the intervention (Cuijpers, Donker, van Straten, Li, & Andersson, 2010; Mohr, Cuijpers, & Lehman, 2011). Several studies have noted, for example, that without a psychological professional guiding or monitoring use of the program, significant attrition is likely to occur (Cowpertwait & Clarke, 2013).

Therefore, it follows that at the public health level, it still may be most effective to guide potential professionals as a first line of defense, even if the eventual treatment ends up being an adjunctive or guided self-help program. What we currently understand is the impact of seeking evidence-based treatment provided by mental health professionals; it has been estimated that the financial burden of depression could be reduced by up to 52% if only people sought and received evidence-based care (Vos et al., 2004).

**Outreach campaigns can increase – or decrease – variables related to treatment-seeking.**

Many expensive and extensive campaigns throughout the world have intended to increase treatment-seeking for depression and other mental health issues, and while nearly all materials show significant changes in some important variables related to treatment-seeking, many do not show significant changes in other, possibly more important variables (Klimes-Dougan & Lee, 2010; Lienemann, Siegel, & Crano, 2013).

For example, a nationally-funded campaign in Germany – the Nuremberg Alliance Against Depression – was a community-based intervention that pointed outreach at four levels in hopes to increase information and education about depression, and to promote early treatment of depression (Dietrich, Mergl, Freudenberg, Althaus, & Hegerl, 2010). The outreach program also intended to decrease stigma surrounding depression,
and to inform individuals that treatment for depression was effective. The outreach program used posters, websites, videos, brochures, and leaflets with information about depression and what could be done about it.

A quasi-randomized trial was conducted in which a random sample from the city that received the intervention (Nuremburg) were compared with a random sample from a similar city that did not receive the intervention (Wuerzburg) in order to compare the effects of the outreach intervention on the persons living in the target city compared to those without such an intervention. A baseline survey was distributed two months before the campaign began, and a total of 1,426 participants responded. A post survey, which used an independent sample gathered in the same manner as the baseline, was conducted 10 months after baseline, with a total of 1,507 participants completing the post survey. A final follow-up surveys, again an independent sample, was conducted 22 months after baseline, with a total of 1423 participants completing the survey.

Change scores indicated that during the time of the broad-based campaign, residents of the targeted area showed significant gains in knowledge about depression. Responses also indicated decreases in stigmatizing attitudes regarding depression in German society. These outcomes were discussed as evidence of the success of the intervention, which of course was entirely accurate regarding these specific and important variables. However, these results were not met with an increased belief that depression was treatable. Currently, there are no data to suggest how the successful outcomes may translate to increased treatment-seeking in relation to how the unsuccessful outcome may suggest no changes in treatment-seeking given that actual treatment-seeking behaviors were not measured. However, at a face-valid level, it seems logical that the belief that
depression is treatable would be a necessary but not sufficient attitude to direct people towards seeking treatment. So, although the campaign was effective at increasing knowledge and decreasing stigma, this same intervention may not have been effective at actually increasing treatment-seeking for individuals with depression (Dietrich et al., 2010).

A nationally-funded campaign in the United States called “Real Men, Real Depression” used multiple modalities of reaching out to the public as well, with the aims of increasing treatment-seeking specifically for men suffering from depression (Rochlen, Whilde, & Hoyer, 2005). There is ample literature to suggest that men are less likely to seek treatment than women, and there is additionally some literature to suggest that this effect is even more profound for men with stronger adherence to traditional models of masculinity or gender-role conflict (Blazina & Edward, 1996). The outreach campaign attempted to reach men, and more specifically men with high identification with masculinity or gender role conflict, given that these men show even lower rates of treatment-seeking. The campaign tried to meet these goals by using materials directed specifically towards them in language and images, showing and telling of masculine males who have had depression and have sought treatment. The outreach campaign was large and involved multiple modalities of outreach elements, and the campaign as a whole has not been tested. However, one study tested the brochure element of the larger campaign (Rochlen, McKelley, & Pituch, 2006).

In this study, 209 men received one of three brochures, with the intention of exploring whether the one gender-specific brochure created for the campaign had a greater impact on help-seeking attitudes of men and better appeal to men than did ads
with mixed-gender that may not be perceived as directed towards men. It was hypothesized that men with high gender role conflict and low treatment-seeking attitudes would have increased attitude change about seeking treatment when viewing a brochure using exclusively male images and language. The first brochure was created as part of the Real Men, Real Depression campaign, and included images of men with the text “Real Men. Real Depression. It takes courage to ask for help. These men did.” This brochure included images of men of various ages and races. The second brochure was created for the study, and modified the Real Men Real Depression campaign’s brochure. This modified brochure used the same format and similar language, but removed the male-specific message used by the campaign, and used both men and women in the images. The brochure read: “Real People. Real Depression. It takes courage to ask for help. These people did.” The third brochure was borrowed from the University of Michigan’s Depression Center outreach materials. This brochure read: “Beyond Sadness. Bridging the gap between emotional and physical symptoms of depression,” and it included illustrations of faces of both males and females, each with a thought about depression or depressive symptoms interacting with physical health (e.g., “I haven’t been sleeping well”).

Results suggested that, when compared to the two mixed gender brochures, the NIH-funded brochure increased positive attitudes about seeking treatment for some subgroups of men (specifically, those with low gender-role conflict and negative help-seeking attitudes), but was no more effective at changing attitudes or being found acceptable for the individuals they were specifically aiming to target than the alternative brochures with no such intention. This study is interesting in the current context not
because the outreach material wasn’t effective – it was effective for the general population at statistically changing attitudes about treatment-seeking for individuals who were not depressed. However, it wasn’t aimed at the general population; it was aimed at men, and more specifically men with high gender-role conflict, and more specifically those who were depressed. For this group, it did no better to reach this difficult-to-reach demographic than the other brochures that had no specific intention of reaching this difficult group. In this context, it’s interesting to highlight that even the well-funded and touted successful outreach campaigns do not always work as intended, which further suggests the need for an evidence-based theoretical foundation from which individual campaigns can effectively build (Rochlen et al., 2006).

Another large-scale multi-campus clustered randomized trial, this time in Australia, used national funding over the course of two years to promote mental health literacy and increase treatment-seeking. The campaign used various modalities including emails, posters, campus events, and even “mental health first aid training courses.” At the conclusion of the two-year outreach students in universities targeted by mental health literacy campaigns knew more about depression and other mental illness when compared to students at the matched universities that did not receive such materials, and that was considered a success by the research team. However, there was no difference in treatment-seeking between the two groups at any time during the study (Reavley, McCann, Cvetkovski, & Jorm, 2014).

Another large-scale website and brochure intended to increase mental health literacy (BluePages) was created with several aims in mind, including increasing treatment-seeking. The program is a large text-based informational website intended
largely to inform people about depression, including what it is, how it can be treated, why it might be helpful to seek treatment, etc. This program has been studied in multiple contexts with varying results. While this outreach program found increased willingness to seek treatment in one study (Gulliver, Griffiths, Christensen, & Brewer, 2012), in another study the same material was unsuccessful at increasing treatment-seeking behavior (Christensen, Leach, Barney, Mackinnon, & Griffiths, 2006), leaving the outreach material unreliable at meeting its primary goal.

Ultimately, many large-scale and expensive outreach campaigns – even those successful in increasing knowledge or moving some relevant variables – do not ultimately have reliable or significant effects on treatment-seeking attitudes, intentions, or behaviors.

Not only are effects sometimes lacking, but at times they start to move in the wrong direction. In one notable study, a relatively intensive intervention intended to increase formal treatment-seeking through moving stigma (Syzdek, Addis, Green, Whorley, & Berger, 2013). In this study, which will be described in additional detail below, men were asked to come in for a single one-on-one intervention regarding stigma related to treatment-seeking, and actually engaging in seeking treatment. Ultimately, the intervention for stigma was successful, but moving stigma did not result in the expected movement of treatment-seeking behaviors or intentions (and in fact, there was a non-significant reduction in positive attitudes about formal help-seeking after the motivational interviewing intervention).

An occasional lack of findings for key variables is not where this question ends; several studies have found that these outreach approaches can sometimes significantly
show the opposite of the intended effect. This effect in which the opposite of what was intended ends up occurring is referred to as a “boomerang effect,” or an effect in which the outcomes bounce back entirely from where they are intended to land. These boomerang effects occur with some regularity and predictability in the mental health outreach domains (Klimes-Dougan & Lee, 2010; Lienemann, Siegel, & Crano, 2013; Siegel et al., 2014).

As an example of such a boomerang effect, Lienemann and colleagues (2013) did a brief experimental manipulation looking at whether depressed individuals would show a tendency to become less interested in seeking treatment after being exposed to a public service announcement intending to increase treatment-seeking. A total of 271 college students received either a PSA intended to increase treatment-seeking by focusing on stigma, or a control advertisement that was unrelated to depression. The depression PSA stated, “Depression: You are not to blame for the cause of your depression. Depression is treatable if you are willing to seek help.” The control ad stated, “Buffer Strips: An economically attractive way to demonstrate your commitment to conservation.” The study found a significant boomerang effect, such that viewing the PSA for depression increased self-stigma and decreased treatment-seeking intentions as depressive symptoms increased. To put this another way, depressed people had an increase in self-stigma as a result of viewing the PSA intended to decrease self-stigma, and depressed people had decreased intentions to seek treatment as a result of seeing the PSA intended to increase treatment-seeking. The ad did exactly the opposite of what it was intended to do for those that suffered from depression (Lienemann et al., 2013).
In another study, Klimes-Dougan and Lee (2010) intended to collect data regarding which format or modality of outreach was more successful at reaching young adults with their outreach message. In this study, a total of 279 young adults were randomized to view one of two PSAs or a control condition with no PSA information. The first was a billboard developed by a non-profit suicide-prevention agency. This billboard ad showed an image of a middle-aged man, and read: “Prevent suicide, Treat Depression – See your Doctor.” The second PSA was a 30-second video intended to be a television ad. This ad described symptoms of depression, noted that depression can “even lead to suicide,” and called depression a “brain illness.” The PSA then told the viewer to “see your doctor.” These two PSAs were designed specifically with the intent of helping young people prevent depression by seeking help – however help-seeking items measured showed that the group who viewed the billboard PSA reported significantly more negative help-seeking attitudes (i.e., people were ultimately less likely to endorse treatment-seeking) than did the group that received no information related to depression or suicide at all (Klimes-Dougan & Lee, 2010).

These backwards effects are concerning, particularly when considering the possible missing studies from the literature that would occur due to the “file drawer effect” (Rosenthal, 1979). Given that an outreach message that worked in the negative direction or functioned to decrease treatment-seeking or other relevant variables may be simply considered as a failed trial, it stands to reason that there is a notable possibility of significant data to support these boomerang effects that have not been reported in the literature. Thus, there may be an underrepresentation of studies showing either a lack of success in their campaigns, or possibly a boomerang effect in some cases.
We completed one such unpublished study, in which we anticipated that a brief informational intervention would increase positive treatment-seeking attitudes and willingness to seek treatment, however we found that overall the information had the opposite effect. In this study, undergraduates were given information packets including non-stigmatizing explanations for depression, and information about various treatment options. We hypothesized that the information would have an overall effect of increasing treatment-seeking, following the mental health literacy model and the findings of previous studies (Gonzalez, Tinsley, & Kreuder, 2002; Anthony F. Jorm, 2011). Based on this model, increasing individuals’ knowledge of depression, symptoms, and treatment options (i.e., their literacy on these issues), would theoretically increase their likelihood of seeking treatment. We further hypothesized that simply informing people that computer-based self-help was an option would increase willingness to seek treatment in general. This was theorized based on the often-presented rationale for internet-based interventions, in which the availability of such treatment options could increase treatment-seeking by providing an anonymous (i.e., less stigmatizing) and convenient way to access treatment (Carlbring & Smit, 2008; Griffiths & Christensen, 2007; Young, 2005).

The study included a sample of 87 undergraduates who received an educational information sheet on depression and various modalities of treatment, including bibliotherapy, individual cognitive behavioral psychotherapy, and psychopharmacology. Approximately half the sample was randomized to receive an additional section on information about e-health for depression. We looked at reported willingness to seek treatment before and after reviewing the information, and overall, we found a significant
decrease in willingness to seek treatment after reviewing the intended outreach information. Our original hypothesis – that adding the option of computerized self-help would increase willingness to seek treatment – was found, but it was muted by the main effect such that adding e-health options only functioned to decrease willingness less than the decrease in willingness seen in the control group. Ultimately, for the test group we added information that may have increased treatment-seeking willingness, but seemingly common-sense non-stigmatizing information gave us a boomerang main effect that significantly inhibited the strength of our message.

In sum, whereas some outreach materials are effective at meeting some of their intended aims, there are ample examples of campaigns that do not meet these aims, and some examples of campaigns that have the opposite of the intended effect. There are no well-controlled studies indicating PSAs significantly improving actual treatment-seeking behavior. In one review of PSAs and outreach messages regarding depression or suicide, investigators found that not a single program demonstrated impact on help-seeking, even though related variables (such as knowledge and attitudes about mental health) were improved in some campaigns (Dumesnil & Verger, 2009). It should be noted that some individually-based gatekeeper interventions, in which providers such as physicians have an active intervention role for individuals screened to have depression or suicide risks, there have been some initial findings suggesting increases in treatment-seeking behaviors (see Niederkrotenthaler, 2014 for a review). However, ultimately these individuals are already seeking some form of treatment, and the one-one one interventions have limited impact at a public-health level. Not a single outreach, PSA, or group-level intervention to increase help-seeking is can be found in the literature that reports the intended goal of
increasing actual help-seeking, and the outcomes of related variables such as intentions to seek help or attitudes about treatment-seeking are mixed between effective and iatrogenic. In short, we need a better understanding of the contexts in which these materials might be effective, and the contexts in which they would be less effective or potentially harmful.

**Challenges with improving treatment-seeking may be greater among those who are depressed.**

Many of the reported studies seeking to improve treatment were conducted with general samples. However, most important for reducing the public health burden of depression is the need to increase treatment-seeking among those actually struggling with depression.

There is research to suggest that depressed individuals are a population particularly difficult to influence. For example, several studies have shown that individuals are more amenable to advertising and persuasive messages when they are in a positive mood compared to neutral or negative mood (Kuykendall & Keating, 1990; Worth & Mackie, 1987). It has been hypothesized that the symptoms of depression themselves may in fact negatively affect treatment-seeking attitudes as well as message attempting to change these attitudes (Lienemann et al., 2013; Siegel et al., 2014). Standard symptoms of depression including a tendency to see the world through a negative lens, and negative beliefs about the world, oneself, and one’s future (Beck, 1976), may have implications in terms of how people with depression consume outreach materials (Lienemann et al., 2013). Therefore, in the case of outreach for treatments of depression, persuasive messages regarding the importance of treatment-seeking are likely
to be less persuasive on the particular group for which they are intended. In addition, depression symptoms have been hypothesized to re-frame outreach messages in light of pessimistic views of oneself and the future (Lienemann et al., 2013). For example, an individual with depression may see a public service announcement noting that treatment helps people with depression, and may interpret this message through a depressive lens, thinking that although some may get better, this wouldn’t apply to them (negative views about oneself); although some may have a brighter future, their depression will remain forever unchanged (negative views about the future). There may also be broader assumptions questioning the reliability of the research or the applicability (negative views about the world). As Siegel noted, “From an attitude-strength perspective, people with depression can be considered one of the most difficult populations to persuade” (Siegel et al., 2014, p. 2).

Several studies have shown that in fact outreach material for depression might have a somewhat systematic boomerang effect, such that the message has the opposite of the intended effects specifically on depressed individuals – even when the same outreach material has been shown to be useful with non-depressed populations (Lienemann et al., 2013; Siegel et al., 2014). In a study directly testing this boomerang effect specifically on depression, it was found that in fact a simple message promoting help-seeking behavior functioned to decrease intentions to seek treatment for people with depression, whereas a control neutral message unrelated to depression had no effect (Lienemann et al., 2013). Ultimately, depression itself appears to make persuasive communications less powerful that are intended to help depressed people, which creates a large problem in depression outreach.
Chapter 2: Applying Social Normative Persuasion Literature to Treatment-Seeking

The social persuasion literature could guide efforts to understand and improve treatment-seeking.

One potential solution to improve these outreach efforts would be to apply evidence-based principles from other disciplines. Social persuasion is a particularly apt area to consider because it represents a robust literature that has been applied successfully to a broad range of public health-relevant behavior change efforts. In one review article, it was noted that the future research regarding depression outreach needs to focus on “audience characteristics, sender characteristics, and the actual media content,” and that “attempts should be made to identify which single components are most effective” (Niederkrotenthaler et al., 2014, p. s239). The social persuasion literature provides a clear and empirical path to drive hypotheses regarding which single components of the actual media content messages will reliably promote increases in treatment-seeking and related variables.

Social norms are powerfully persuasive.

Of the variety of evidence-based principles from the persuasion literature, social norms may be the most apt when addressing outreach efforts. Social norms can be defined as statements that provide information regarding the commonness or the acceptability of a given behavior or attitude. There are two distinct types of social norms. The first is descriptive norms, which simply tell the audience that a given practice is normally done or engaged in, or how the audience how they might ‘fit in’ and behave like the group around them. The other type of norm is injunctive, which tells the audience what is normally approved of or what behaviors may be supported, whether or not the
behaviors are common. This tells the audience how they might be respected or valued by the group around them. As an example, it may be common for a given group to not recycle glass when a city does not collect glass recyclables. And yet most people would approve of those who would store up their glass to later take to a recycling center. The descriptive norm would be that most people do not recycle glass, but the injunctive norm would be that most people respect or approve of those who do recycle glass.

Social norms have been shown repeatedly to shift behavior towards the “norm” or towards what most people do or of what most people approve (see Cialdini, 2008 for an overview). It has been commonly found that informing individuals that the majority of people either engage in a given behavior or approve of a given behavior will tend to move people towards more positive attitudes and intentions regarding such behaviors, as well as increasing the tendency to engage in the given behavior. Several researchers have argued that the basic process of normative influence is that norms provide people with information about what will be socially acceptable or socially useful, and this helps to guide behavior (Cialdini, Reno, & Kallgren, 1990; Rimal & Lapinski, 2015). This effect is so powerful that studies have found that even referring to “many” – not specifically the “majority” – still has significant persuasive behavioral effects (Cialdini, 2003).

As an example of the powerful effects of social norms on public health-related behaviors, several studies using descriptive norm manipulations have been shown to reduce alcohol use through college campus’ social norms campaigns (see Lewis & Neighbors, 2006 for a review). These social norms campaigns involve presenting normative alcohol use information to students to correct common misperceptions that drinking is more common than it actually is.
In one study, 252 undergraduates who reported at least one heavy drinking episode in the past month were randomized to receive a descriptive normative message or an unrelated control message (Neighbors, Larimer, & Lewis, 2004). Students completed computerized assessments both on how much they drink, and their perceptions of how much other students on campus drink. The normative message was created in the context of personalized feedback, wherein the message would carry-forward the participants answers to previous assessments and then compare them to the actual norms on campus. The message consisted of a few brief paragraphs and two charts to map out both the frequency and quantity of how much the participant drinks, how much the participant perceives the typical student drinks, and how much the typical student actually drinks. This message was printed for individuals to take with them when leaving the study. Results at both 3- and 6-month assessments showed a reduction in drinking for those who received the one-page intervention compared to those who received the control condition without any normative information. Although the effect sizes were relatively small in this study ($r = .13$ and $r = .14$, at 3 and 6 months respectively), it should again be noted that this was a computerized intervention that had a very small cost or time burden per user, so even small effect sizes can mean a dramatic impact at a public health level (Neighbors et al., 2004).

This and many other studies have found that through correcting perceptions of normal drinking behavior (e.g., students drink less than one might think), they actually change student behavior, without the need to directly address the behavior (i.e. the intervention never discusses that the participant should be drinking less, and yet less drinking predictably occurred (Neighbors et al., 2004; Prince & Carey, 2010).
Descriptive norm studies have been done to increase other prosocial behaviors through social norms strategies, such as opting to re-use hotel towels (Goldstein, Cialdini, & Griskevicius, 2008). In one study looking at a total of 1,058 instances of opportunities to re-use towels of actual hotel guests, guests received one of two signs displaying information about reusing towels. The first message noted the environmental importance of reusing towels, stating: “HELP SAVE THE ENVIRONMENT. You can show your respect for nature and help save the environment by reusing your towels during your stay,” and included information about how they could help nature by reusing towels.” The second message, focused more on descriptive norms, stated: “JOIN YOUR FELLOW GUESTS IN HELPING TO SAVE THE ENVIRONMENT.” Almost 75% of the guests participated in our resource savings program by using their towels more than once. You can join your fellow guests in this program to help save the environment by reusing your towels during your stay.” Results suggested that the social norms message significantly increased the reuse of towels compared to the environmental message alone, with 44.1% reusing towels in the social norms condition compared to 35.1% reusing towels in the environmental message condition.

Another study examined the effects of social norms on littering (Cialdini et al., 1990). In this study, cars in a university parking had leaflets placed on their windshields. This time, instead of informing the students of what others did, they displayed the norm by either maintaining a clean or an already littered parking lot before the subjects arrived at their cars. In addition, subjects were randomized to confederate condition, in which the confederate either threw down a leaflet into the parking lot themselves, or simply walked past. The confederate’s littering was intended to increase the salience of the displayed
norm. Participants in the littered lot, with the pro-littering descriptive norm, were significantly more likely to remove the leaflet from their car and throw it on the ground than were participants from the clean parking lot with the anti-littering descriptive norm. The salience of the confederate’s littering amplified these effects, such that those in the clean parking lot who saw the confederate violate the norm were even less likely to litter (6%) than those who saw the clean parking lot but did not see anyone violating the norm (14%). Those in the littered parking lot who saw the confederate confirm the norm were even more likely to litter (54%) than those who saw the littered parking lot but did not see anyone confirming the norm (32%). Ultimately, this shows that social norms are powerfully persuasive in shifting behavior when implied, and even more powerful when made salient to an individual.

The powerful influence of injunctive norms on behavior has also been displayed in many studies (Göckeritz et al., 2010; Jacobson, Mortensen, & Cialdini, 2011; Prince & Carey, 2010; Smith & Louis 2008). In one study using on tobacco cessation communications, a total of 152 participants saw one of two online communication packets intended to reduce intentions to smoke and to reduce positive attitudes and intentions regarding tobacco use (Hohman, Crano, & Niedbala, 2016). The control condition included a paragraph suggesting that college students similar to the participants do not have an opinion in general about tobacco use; the injunctive social norms message included a paragraph suggesting that only 9% of college students similar to the participants approve of tobacco use. The social norms message that was antagonistic to tobacco use showed reliable decreases in positive attitudes and intentions to use tobacco
when compared to the same message without the social norms statement (Hohman et al., 2016).

In another example, a community sample received electricity bills that included injunctive normative comparisons – homes with relative efficiency would receive a smiley face on their bill as well as information about normal usage; homes with relative inefficiency would receive a frownie face on their bill as well as the same normal usage information (Allcott, 2011). The injunctive norm of just implying what was ‘good’ or of what people approved by giving the frownie face tended to shift behaviors dramatically. The authors estimate that the average program aimed at reducing energy is successful at reducing about 2% of consumption, whereas this intervention – which cost nothing to implement – reduced consumption by 6.3% (Allcott, 2011).

In a study conducted by Smith and Louis (2008), the researchers sought to use norms to increase petition-signing behavior. Participants included 185 students, who were told that a recent study had been done regarding student opinions and behaviors of signing petitions. Students were randomized to receive a set of different graphs showing the proportion of students approving of signing petitions, which based on randomization showed either a majority in favor of signing petitions (pro-injunctive norm) or opposed to signing petitions (anti injunctive norm), and another graph showing a majority of students either reporting engaging in petition-signing (pro descriptive norm) or not reporting engaging in petition-signing (anti descriptive norms). The study found a significant main effect for injunctive norms in the direction intended, and while they found that injunctive norms interacted with descriptive norms, the descriptive norms themselves did not have a main effect. This study not only shows the significant effects of injunctive norms, but
additionally gives reason to believe that, at least in some contexts, injunctive norms can be even more powerful than descriptive norms (Smith & Louis, 2008).

Similarly, in an intervention aiming to increase handwashing through using social norms, the injunctive norms had a significant effect, but descriptive norms did not. In fact, a supportive descriptive norm combined with an unsupportive injunctive norm functioned to decrease handwashing (Lapinski, Anderson, Shugart, & Todd, 2014). These last studies support not only the powerful effect of injunctive normative influence, but they also suggest the need for empirical testing of descriptive norms in context, which although clearly powerful in some contexts as described above, may not have such robust effects in other contexts.

In sum, social norms are a key evidence-based principle in the persuasion literature that can lead to powerful behavior change effects, in formats that fit well with PSAs and related outreach efforts that might be used to increase treatment-seeking. Theoretically descriptive and injunctive norm strategies could be used in outreach efforts to increase treatment-seeking.

Social norms may explain when messages backfire.

An advantage of the persuasion literature is it not only identifies how to improve target behaviors, but it provides concepts that can be used to understand why efforts to influence might have unintended boomerang effects. There have been multiple examples in the research of unintended normalization statements backfiring such that they increased a behavior they intended to decrease (Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007). In fact, one of the classic studies in the descriptive norm literature was directly in response to an unsuccessful naturalistic attempt to dissuade individuals
from an environmentally harmful behavior of taking petrified wood from Arizona’s Petrified Forest National Park. This study researchers were suspicious of the effectiveness of the sign currently in place, which suggested that it was far too normal for hikers to steal the irreplaceable petrified wood so you as a hiker should not (Cialdini, 2003). The research team created two signs, which were displayed at different times. The first gave a norm similar to that which was placed in the park before the study, highlighting the anti-environmental descriptive norm: “Many past visitors have removed petrified wood from the Park, changing the natural state of the Petrified Forest.” The sign also included an image of three visitors taking wood. At other times, the sign stated the pro-environment injunctive norm, stating “Please don’t remove the petrified wood from the Park, in order to preserve the natural state of the Petrified Forest.” This sign also included a picture of a single person stealing a piece of wood, with a “no” symbol of a red circle and cross around the person’s hand. The descriptive message highlighting how unfortunately common the theft was resulted in significantly more theft (7.92% of marked pieces were stolen when this sign was present) than when the injunctive norm highlighting the importance of preservation (1.67% of marked pieces were stolen when this sign was present; Cialdini, 2003).

As the author of this study and the most prominent voice in social normative influence writes,

“There is an understandable, but misguided, tendency to try to mobilize action against a problem by depicting it as regrettably frequent… Although these claims may be both true and well-intentioned, the campaigns’ creators have missed something critically important: Within the statement ‘Many people are doing this undesirable thing” lurks the powerful and under-cutting message “Many people are doing this…”’ (Cialdini, 2003, p. 105).
This depiction of trying to decrease the incidence of a problem by noting how frequently it occurs can be seen throughout the literature, and the effects expected by the normative social influence literature are found in these cases. In one study, researchers attempted to prevent the onset of new eating disorders in female college freshmen (Mann et al., 1997). A total of 509 students were randomized to either the intervention or waitlist. Intervention consisted of having groups of 10-20 subjects participate in a group discussion led by two students from the same university who had eating disorder histories. The groups provided information and personal stories about eating disorders, including how common eating disordered behavior may be. At post, the group who had engaged in the intervention endorsed more symptoms of eating disorders than did those on the wait list. The authors suggest that this boomerang effect may have occurred in the group’s attempts to reduce the stigma associated with eating disorders, with the intended goal of decreasing stigma in order to increase treatment-seeking. Instead it appears to have had the side-effect of telling the groups how “normal” disordered eating behavior was, and thereby acted as an unintentional persuasion of increasing disordered eating behaviors (Mann et al., 1997).

Another study aimed to discourage attitudes that would be consistent with suicidal behavior, and increase positive attitudes towards seeking treatment in response for emotional problems to decrease rates of suicide (Shaffer, Garland, Vieland, Underwood, & Busner, 1991). The study looked at a group intervention of didactic information and discussion in a total of 758 9th and 10th graders, matched to 680 similar students who did not receive this intervention. What they found was that the intervention had no significant effects on treatment-seeking attitudes, but students who received the intervention were
significantly more likely to have their view that “suicide could sometimes be a solution to problems” increase, from pre- to post-intervention. Again, this change was found only for the group that received the intervention specifically intending to decrease this attitude. While the authors do not directly describe any normalization in the intervention descriptions, the unintentional social norms intervention became apparent in the discussion, when the authors note: “A possible explanation for this is the programs’ emphasis on how common suicidal preoccupations and behaviors are in adolescence, and the frequent presentation of a model of suicide as a response to stress…” (Shaffer et al., 1991, p. 595). Once again, it appears that the common-sense communication of highlighting how common the negative thing is showed an important and iatrogenic boomerang effect.

This same finding occurred in a more organic and externally valid outreach effort, in which a German TV series attempted to broach the topic of suicide as part of the fictional drama in an attempt to increase awareness of suicide (Schmidtke & Häfner, 1988). In the show, a young adult male committed suicide. The show was a 6-week weekly aired mini-series, and the show was aired during two different 6-week periods one year apart, which allowed for an ABA quasi-experimental methodology. Again, showing a boomerang effect from the show’s intended purpose, the airing of the show was associated with a significant increase in suicides among youth viewers similar to the suicidal character. Although there the substantial increase in viewer suicides around this time frame could be explained by various alternative hypotheses, the same increase in suicides was found when the 6-episode series was re-run a year later (Schmidtke & Häfner, 1988). Once more, we can see how simply showing viewers that “this is a thing
that happens” can unintentionally become the message that is heard and acted upon, even when the intended message is “this thing that happens more often than it should.”

Ultimately, seemingly kind statements of “you’re not alone in this unhelpful behavior” may regularly and unintentionally merge with a powerful message, “these unhelpful behaviors are common; everyone’s doing them so you can too.” Thus, it appears that the common-sense norm statements intended to destigmatize or show understanding, or those expressing how sadly pervasive a problem may be, can with some predictability backfire and create boomerang effects. This well-intended type of communication – “you’re not alone,” are very commonly found in all sorts of pro-social outreach messages, and we can see evidence that this can be used to understand problematic outcomes from public health behavior change efforts.

**It is common for outreach material to normalize not seeking treatment.**

The social norm literature and the commonly found boomerang effects found in the treatment outreach efforts raise the question of whether misapplied norm messages may in fact be in some way responsible. In other words, we’ve seen how commonly the common-sense communications normalize the behaviors they’re trying to change, and we’ve seen how often PSAs and outreach messages for increasing treatment-seeking may in fact decrease treatment-seeking; it is interesting to note that the latter may in fact be explained by the former. By highlighting how common it is for people to choose not to seek treatment, or to communicate how significant the stigma is around seeking treatment, are outreach messages unintentionally persuading people to decrease positive attitudes regarding treatment-seeking and treatment-seeking behaviors?
A review of outreach efforts suggests such problematic norm messages do occur in treatment outreach materials. For example, in one study briefly referred to earlier that showed a boomerang effect, the researchers looked at a gender-based motivational interviewing (GBMI) intervention to increase treatment-seeking in men (Syzdek et al., 2013). A total of 23 men were randomized to either the in-person GBMI intervention, or to a control condition. The intervention in part highlighted to participants problematically the low rates of treatment-seeking among males, and touched on the stigma associated with treatment-seeking, especially among men. Not surprisingly from the normative persuasion literature, there was a significant difference in attitudes about seeking professional help between the control group and the test group, such that the intervention group had more negative attitudes regarding seeking professional help than did the control group at this time. Although the intervention did have some intended effects, such as reported improvement of attitudes regarding informal treatment-seeking, it is evident that doing nothing may be more effective than meeting one-on-one with individuals when highlighting negative treatment-seeking norms (Syzdek et al., 2013).

In a 2014 article reviewing the impact of mass media awareness campaigns on both decreasing stigma and increasing treatment-seeking for depression and suicidality, the article notes how common it is to normalize depression and suicidality, and to normalize not seeking treatment. The authors note, “…some suicide prevention advocates consider raising public awareness of the scope of the problem of mental illness and suicide as a first key step in reducing the public health problem” (Niederkrotenthaler et al., 2014, p. s235). This further highlights the naturalistic tendency of public health communicators to unintentionally persuade the audience against seeking treatment, or as
these same authors state, “This may increase the likelihood that individuals will believe that engaging in suicide is widespread and therefore acceptable” (Niederkrotenthaler et al., 2014, p. s235).

It is clear that outreach communications and PSAs created for research show this harmful normalization process all too often, wherein the common-sense communications normalizing the negative opinions and behaviors may in fact promote said negative opinions and behaviors. Most outreach campaigns however are never studied, but instead are simply presented to the public in the hopes that they will have their intended effects. Many such mental health outreach programs state that “most people” or the “majority of people” suffering from a mental illness never seek treatment. For example, DepressionOutreach.com states, “Million are unwilling to seek treatment” (“depressionoutreach.com,” n.d.). The National Institute for Mental Health’s site for promoting treatment-seeking in men states, “Many men do not recognize, acknowledge, or seek help for their depression” (“NIMH » Men and Depression,” n.d.). Even the National Institute of Health notes that “Many college students who have depression aren’t getting what they need (“NIMN.NIH.gov,” 2011)” and “Many people with a depressive illness never seek treatment” (“NIMN.NIH.gov,” 2011). In one well-funded, multi-modal National Institute of Health Campaign aimed at increasing treatment-seeking in males with depression (“Real Men, Real Depression”), the following text was used on their website:

“Instead of acknowledging their feelings, asking for help, or seeking appropriate treatment, men may turn to alcohol or drugs when they are depressed, or become frustrated, discouraged, angry, irritable and, sometimes, violently abusive. Some men deal with depression by throwing themselves compulsively into their work, attempting to hide their
depression from themselves, family, and friends; other men may respond to depression by engaging in reckless behavior, taking risks, and putting themselves in harm’s way.” (NIMH 2003, Rochlen, Whilde, & Hoyer 2005).

Note that this statement not only normalizes not seeking help from others, it also normalizes a variety of behaviors that the National Institute of Mental Health would aim to reduce. This outreach initiative as a whole has not been tested, and it is unknown what effect this and similar statements may have had on depressed men. However, the campaign’s short brochure was studied as discussed above, and it was found that it did not increase positive attitudes about treatment-seeking for depressed men in general (Rochlen et al., 2006).

As discussed previously, it is a problematic but generally is a true statement that the majority of people do not seek treatment; for many populations, this is an honest representation of what many large and small outreach campaigns aim to combat. However, it should also be noted that according to the National Comorbidity Survey Replication, one of the most trusted and cited epidemiological statistics on the matter – the majority of people with depression in the United States do seek treatment (as stated above, 51%; (Kessler et al., 2003). So, although there are multiple populations that show lower norms of seeking treatment, it would be acceptable to highlight the lesser-seen side of this social norms statement: that a survey has shown that most people suffering from depression do receive professional treatment for their disorder, and that it is in fact incredibly common for individuals suffering from depression to seek professional help.

Not only do outreach efforts regularly invoke norms that are oppositional to the intended messages with respect to descriptive norms, but they also often evoke additional
injunctive norms that further discourage treatment-seeking based on the norms literature. This can occur specifically in relation to discussing stigma. Ultimately, the drawing attention to the stigma of depression or other mental illness is ultimately a negative injunctive norm; it expresses that most people do not approve of mental illness or seeking help for mental illness, depending on the message. Stating that individuals are stigmatized for seeking treatment is likewise an expression that it is common for individuals to not approve of treatment-seeking.

As an example of evoking negative norms in attempts to normalize stigma, many outreach programs point out how common or normal it is for individuals to experience stigma or discrimination due to issues with mental health. DepressionCenter.org states, “Many may also be hesitant to seek treatment because of stigma” (“U-M Depression Center Outreach and Education,” n.d.). A United Kingdom outreach program states, “Mental health problems are common – but nearly nine out of ten people who experience them say that they face stigma and discrimination as a result” (“time-to-change.org.uk,” n.d.). It should be noted this last campaign was observationally researched in a study published only on their own website (without peer review), and the data suggested that there was “no relationship between campaign awareness and intended help seeking” (“time-to-change.org.uk,” n.d.).

Several large-scale studies have targeted stigma directly, and in the outreach materials of these projects, it is very common for stigma outreach material to directly state or strongly imply the injunctive norm that individuals who seek treatment for mental health issues often experience stigma. In one outreach website, it was stated that the
stigma may be “even worse than the symptoms themselves” (“time-to-change.org.uk,” n.d.).

Unfortunately, it appears that the clear injunctive norms stated throughout these brochures and websites – that “people don’t approve of those who seek treatment” – is less refutable than the descriptive norm. It is repeatedly shown that people realistically do not approve of those who seek treatment, and that this is a realistic injunctive norm against seeking treatment that cannot be honestly denied (Barney, Griffiths, Jorm, & Christensen, 2006; Ben-Porath, 2002; Kelly & Jorm, 2007). Therefore, it may prove ethically problematic to harness the power of injunctive norms in naturalistic or non-research information dissemination. However, it is logical to predict that repeatedly noting how stigmatizing it is to seek treatment might be similar to noting a frownie face in an electricity bill: if the injunctive norm is that the behavior is ‘bad,’ then the behavior is likely to decrease. This ethical real-world limitation also functions to increase the real-world utility of including a descriptive-only norms communication in outreach materials, even though as noted earlier descriptive norms have been found to not be as powerful as injunctive norms in several instances. To put this another way, it would be useful to know if injunctive norms had effects in increasing the effectiveness of depression treatment-seeking outreach communications, especially because we know that injunctive norms can be particularly powerful. However, because it is unlikely that one would be able to ethically use injunctive norms in a real-world communication without lying, it will also be useful to see if the less-powerful, but still empirically-based, descriptive norms may suffice at reaching this goal.
In sum, it appears that outreach efforts regularly use anti-norm messages that both highlight descriptive norms related to not seeking treatment and injunctive norms that people disapprove of treatment. Thus, theoretically the norm literature may explain why outreach efforts often are inert or iatrogenic, but research to date has not directly tested this. Research is now needed to systematically test if and how norms may produce positive and negative effects on treatment-seeking.

**Chapter 3: Additional Considerations**

Although social norms can have powerful positive or negative effects, this is modulated by a variety of factors identified over decades of research. These and other specific details regarding interactions of persuasive communications are critical for understanding how such messages might work more or less effectively, especially with sub-populations that may be more difficult to persuade, such as depressed individuals. Examples include whether the message is self-relevant, direct or indirect, central or peripheral, and whether the message includes multiple types of communications, such as would occur if building a message based on the theory of planned behavior. In the sections that follow, the research in each of these areas is reviewed. The review focuses specifically on potential treatment outreach efforts and with depressed individuals, who are the most important targets for increasing treatment-seeking for depression. This focus is essential given that this is both an extremely common and burdensome problem, that there are evidence-based treatment options that offset this burden, and that this population is among the most difficult populations to persuade. As will be discussed, these factors may be particularly relevant in understanding why outreach messages
sometimes produce unexpected negative results with depressed individuals, and how messages might be revised to better engage these individuals.

**The reference group may (or may not) be important.**

Multiple studies looking at the context in which social norms may be more and less effective have shown that the message may be much more powerful when it speaks not only to what general people do or of what general people approve, but to what people *like you* do, and of what your *ingroup* approves. In one study, 238 students were randomized to one of four groups in a 2x2x2 design, of descriptive norm support vs. descriptive norm oppose, injunctive norm support vs. injunctive norm oppose, and ingroup norm source vs. outgroup norm source (Smith & Louis, 2008). Participants viewed a series of graphs displaying the degree to which students either approved of or did not approve of signing petitions (injunctive norm), and the degree to which students either engaged in or did not engage in signing petitions (descriptive norms). The source of the graphs was also manipulated, such that half of the graphs were purported to have been showing data collected at the participants’ university, and half of the graphs were purported to have been showing data collected at a university in a different state.

Injunctive norms had an overall main effect as would be expected, such that individuals who thought that most people approved of signing the petition were more supportive of signing the petition. However, it was also found that outgroup norms were “globally ineffective,” in that there were no norm effects in either injunctive or descriptive norms when the graphs were purported to show the opinions of behaviors of students unlike the student participants (Smith & Louis, 2008). Similar effects have also been found in multiple studies with similar paradigms, showing that the ingroup and social identity
presentation can significantly impact the impact of a social normative intervention (Jetten, Spears, & R, 1996; Terry & Hogg, 1996; Terry, Hogg, & McKimmie, 2000).

While there does appear to be a clear link between an in-group reference group and the effects of a social norms intervention, this creates a difficult situation in regard to engaging social norms in depression outreach material. There is a strong relationship such that individuals with depression tend to feel ostracized, which means they may not particularly identify with any ingroups (Leary, 1990; McGuire & Raleigh, 1986; Williams & Nida, 2011). In fact, the lack of identity in social groups is so strong, that it has been argued that this lack of social identity may be a strong predictor and possible cause of depression (Cruwys, Haslam, Dingle, Haslam, & Jetten, 2014). And while it might be a logical assumption that a person with depression might feel that they belong to an in-group of ‘depressed’ people, it’s equally likely that they do not value this inclusion and would likely not aim to act as one of their own. In the event that this inclusion was valued, it’s likely that identifying as part of this group and highlighting such an identity may in fact have negative outcomes, possibly enhancing depressive symptoms (Crabtree, Haslam, Postmes, & Haslam, 2010; Cruwys et al., 2014). We do know that choosing the ‘wrong’ ingroup, or a group of which the target does not feel included, would likely have negative effects on the message, as described above (Smith & Louis, 2008). Therefore, it is really unknown how the extent literature might help to inform (or not) this particular population, but there is reason to believe that the standard in maximizing the effects of social norms influence – to include an ingroup reference group – may actually backfire and likely should not be included in social norms outreach materials for depressed individuals.
Lower power status (and therefore depression) may be related to increased norm effectiveness.

Increases in power, including socioeconomic status and hierarchical rank in the target group, tend to be related to decreases in the behavioral consistency with social norms (Keltner, Gruenfeld, & Anderson, 2003). Although there are no studies directly testing social norms interventions in low- vs. high-powered groups, it has been well-documented that individuals high in power are more likely to violate social norms of politeness for people who are higher in power status (Brown & Levinson, 1987). To expand upon this finding, it has been argued that “high power individuals would feel more freedom to act on their personal values and beliefs” (Gelfand & Harrington, 2015, p. 4). The basic idea is that the power of social normative influence lies in its ability to provide the individual with a sense of acceptance from the group and an avoidance of ostracism, both of which would by definition be less likely for people of high status (Keltner et al., 2003). Depression is itself linked with power, both in its clinical description of hopelessness and helplessness (American Psychiatric Association, 2013), but also in its socioeconomic status in that depression and low socioeconomic status are notably correlated (Zimmerman & Katon, 2005). This relationship further promotes the idea that social normative influence may work particularly well in this difficult-to-persuade population. The empirical suggestion that people lower in power may be more susceptible to normative persuasion, and the strong relationship that people with depression tend to be low in power, make social normative persuasion a unique advantage in persuading such a difficult audience.
Social norms may be the most useful component of the well-established theory of planned behavior for treatment-seeking outreach.

The integration of self-efficacy (or perceived behavioral control) and attitudes in addition to social has a large theoretical underpinning of what predicts behaviors: the theory of planned behavior (TPB). In this theory, it is essential not only that the social norms seem to approve the given behavior, but also that the person is self-efficacious, or believes that they have the specific skills, knowledge or logistics to actually engage in the behavior, in addition to having positive attitudes in regard to engagement in the given behavior (Ajzen, 1991). According to the TPB in the current context, social norms would be expected to have the largest effect on behavior when the individual thinks highly of seeking treatment or has attitudes and beliefs that treatment is useful, in addition to believing that they can seek treatment. The theory of planned behavior has been found to be useful in predicting the actual behavior of people in many different contexts, from improving oral health behaviors (Dumitrescu, Wagle, Dogaru, & Manolescu, 2011) to graduating from college (Sutter & Paulson, 2017). However, there are some issues with using all three elements of the theory of planned behavior in the current context. In one meta-analysis, the researchers looked at the variance accounted for by each of the different components of the theory of planned behavior (Armitage & Conner, 2001). While they found that when the three variables were combined for the total theory, the theory of planned behavior was able to account for a significant amount of variance in intentions (39% of the variance) and behavior (27% of the variance) in various contexts. However, the same meta-analysis pointed to the idea that the social norms portion of the theory did not individually account for increases in intention or behavior as they were
used in the 185 individual studies. In combination with the significant literature on social norms reviewed earlier, where social norms in and of themselves can have substantial impacts on intentions and behaviors but can also have unintended boomerang effects, it seems that the logical explanation is that there was significant variance in these studies in terms of how effective the individual norms may have been (i.e., the studies with boomerang effects from the normative statements were included in addition to those with intended effects). This lends credence to the idea that starting a step back to ensure that a solid understanding of social norms is in play before attending to the full model may have substantially increased utility.

To further discuss the utility of testing social norms alone before considering this full theory, it is worth discussing how the missing aspects of the theory of planned behavior may fit into the context at hand. In terms of self-efficacy or perceived behavioral control, in the current context this aspect of the theory would likely be related to specific logistical considerations, considerations of mental health literacy, and issues of how to find help. However, as discussed above, outreach messages and websites that focus primarily on these issues often do not consistently find the increases in variables related to treatment-seeking for which they are looking. This suggests that perceived behavioral control alone may not have too much utility.

Attitudes, the third component of the theory of planned behavior, would relate to participant attitudes regarding professional treatment-seeking. However as noted earlier, participant attitudes often change in response to social norms messages. This suggests that targeting social norms interventions may in fact also target attitudes, although this
would be an empirical question as to whether or not it would do so in the current context of treatment-seeking outreach for depressed individuals.

And lastly in regard to considering the full theory of planned behavior, there have been some recent criticisms to said theory (Sniehotta, Presseau, & Araújo-Soares, 2014). Criticisms include the empirical suggestion that these predictions may not predict longitudinal behavior with much accuracy, and that there may be some construct overlap between intention (one of the primary outcomes) and attitudes, which we also noted above (Sniehotta et al., 2014). This lends further credence to the idea that the first step in creating a foundation for an empirically-based outreach message begins with the one element of the theory; in the event that social norms have utility in relation to treatment-seeking variables, then it would be an empirical question to determine whether the full model of the theory of planned behavior added to the utility or not. Ultimately, because of the rich literature regarding the theory of planned behavior and the social norms, it would be remiss to leave it out of consideration. However, because many interventions on perceived behavioral control have proven unsuccessful, and because there is reason to believe that social norms alone can modify attitudes, there is not currently reason to believe that these aspects of the theory are particularly relevant in changing intentions and behaviors.

**Peripheral messages may be more effective for individuals with depression.**

One model looking into specific conditions of persuadably is the Elaboration Likelihood Model (ELM; Petty & Cacioppo, 1986), and it is worth discussing how this model may or may not play into the effectiveness of an outreach message intended to increase variables related to treatment-seeking specifically in depressed individuals.
ELM ultimately proposes that an individual’s response to a message will depend on a handful of variables that will determine how deeply the person considers or thinks about the content of the message, versus how susceptible a person might be to rely on heuristic or environmental cues about the message. When an individual’s attitude is formed based on careful cognitive processing of the message, this is considered the central route of processing; when instead the attitude is instead based largely on heuristic cues, this is considered the peripheral route of processing (Petty & Cacioppo, 1986). In the case of outreach messages for depression treatment-seeking, a central route of processing would be responsible if an individual became informed about what depression is, how depression can be treated, the treatment rates of depression, and that individual found that this information seemed logical and credible, and therefore was persuaded to seek treatment. Through the peripheral route of processing on the other hand, a person might be informed that a famous person has sought treatment, or see a message with an attractive person wearing a lab coat simply informing them that treatment is ‘good’ in various ways, possibly listing a long list of possible benefits even if many of the list items are similar.

The ELM suggests that some circumstances promote a likelihood of a person being more likely to fall into one or the other route of persuasion. Self-relevance, for example, is known in general samples to make a person more likely to lean towards the central route of persuasion; when an issue is important to the individual, that individual tends to pay more thoughtful attention (Petty & Cacioppo, 1979). There are multiple things to consider when determining whether depression is one such individual variable that may promote one route of persuasion over the other. Of note, several articles have
commented on the likelihood that symptoms of depression, including difficulty concentrating and difficulty following through with tasks, would make it likely that individuals with depression would be better persuaded by peripheral cues such as source credibility (Neimeyer, Metzler, & Dongarra, 1990; Stoltenberg, Leach, & Bratt, 1989). By definition, the peripheral route of persuasion is likely to be more active in situations in which motivation and ability to process the message are low (Petty, Cacioppo, & Kasmer, 2015), and both descriptors would also be definitive descriptors of a depressive presentation (American Psychiatric Association, 2013).

However, in one study, depressed individuals were compared to non-depressed individuals in comparing persuasive methods intended to target more or less elaboration (peripheral vs central route of processing, Neimeyer et al., 1990). The study consisted of 101 participants, who were randomized to one of four conditions varying in quality of the message (high/low), credibility of the source (high/low). These groups were further divided by depressive symptoms (depressed/not depressed) for a total of 8 groups at analysis. Individuals with depressive symptoms were more likely to respond to the source credibility (a peripheral cue) than the non-depressed groups. However, it was also found that the quality of the argument (a central cue), had an impact on individuals with and without depression, and this main effect was larger than the source creditability of the message. This is an interesting finding in that it suggests that the depressive symptoms noted that may interfere with peripheral processing are related to an increase in the power of peripheral heuristic cues when compared to people without depressive symptoms, but that ultimately it wasn’t a strong enough finding to undue a thoughtful central elaboration of a quality message – even for people with such depressive
symptoms. It should be noted however that the participants used in the study were sub-clinically depressed, which may not adequately generalize to the elaboration likelihood of individuals who would benefit from treatment (Neimeyer et al., 1990).

In opposition to this finding that peripheral cues may have increased utility in depressed compared to non-depressed individuals, several studies have suggested that when a person is in a negative mood, they tend to be more skeptical and more logical in taking in new information (Forgas & East, 2008). This theory suggests that negative moods are related to looking for danger, and that they create a sense of skepticism and that this skepticism lends to an environment in which the central route of processing may be more likely. In addition, self-relevant information tends to lead a person towards a more central processing (Petty & Cacioppo, 1979). This could conceptually work towards the assumption that high-quality outreach messages may have a greater impact for individuals with depression (Petty et al., 2015), however the self-relevant content would likely suggest that the viewer already has an opinion regarding the persuasive message (Hutton & Baumeister, 1992). Because of the power of the confirmation bias, in which individuals who have an opinion seek information that confirms their opinion and dismiss information that does not, the self-relevance may in fact be a double-edged sword (Del Vicario, Scala, Caldarelli, Stanley, & Quattrociocchi, 2017). In other words, the self-relevance that creates an increased likelihood of central processing is the exact thing that makes it more likely that individuals with depression already have an opinion against treatment-seeking that might be difficult to change, which could theoretically make the message backfire (Hutton & Baumeister, 1992). In addition to probable counterarguments, there is ample evidence to suggest that negative affect, which would
encapsulate depression among various other presentations, significantly increases skepticism and promotes more in-depth thinking (Forgas, 2013; Forgas & East, 2008).

So, while it may be that the central messages may be more likely to persuade individuals with depression, it seems likely that these messages may persuade individuals with depression in the opposite direction as intended, given the confirmation of opinions already held about self-relevant information. Therefore, a high-quality message filled with credible information may be better attended to but met with additional skepticism and rejection of the message.

From synthesizing the literature regarding route of processing, it seems there is reason to believe both that messages intended to engage central processing and messages intended to engage peripheral processing would have theoretical reasons to be avoided in order to maximize message effects. The conclusion seems again consistent with what Seigel notes (2014), individuals with depression are simply a very difficult population to persuade, and it may be that peripheral messages would be more effective in minimizing counter-arguments or confirmatory biases. Notably, social normative messages fall clearly into the realm of peripherally processed persuasive messages, giving the audience or viewer a quick heuristic to decide whether something is agreeable based on what others think of it, instead of processing the message deeply about the merits or dangers of engaging in said behavior.

Avoiding resistance to persuasion is essential to any persuasive message.

The persuasion literature states that overt or direct persuasive messages can in some cases activate resistance and skepticism due to the persuasion itself (Ahluwalia, 2000; Knowles & Linn, 2004; Knowles & Riner, 2007). The theory suggests that when
people realize that they are targeted for persuasion, they interpret this as a threat to their personal freedom and therefore increase in reactivity and skepticism to the tactic, regardless of the message itself (Knowles & Riner, 2007).

The cognitive biases that are inherent in depression line up with many of the issues that would be more likely to evoke this skepticism or resistance. As noted previously, negative moods increase skepticism towards messages (Forgas & East, 2008), and cognitive biases common in depression are likely to increase resistance and skepticism in more direct ways, like viewing the message through a negative or less hopeful lens (Beck, 1976). Because of these issues, it has been hypothesized that overt or direct persuasion targeted at depressed individuals themselves, informing them of the merits of seeking treatment may not be a useful strategy, and this claim has some empirical support (Siegel et al., 2014).

In one study, Siegel and colleagues (2014) tested the effects of using an indirect persuasive message intended to overcome skepticism and resistance for increasing treatment-seeking intentions in individuals with depression. The technique used was based on an ‘overheard’ message strategy, in which a person does not become resistant to the message due to the fact that the message doesn’t seem to pose any threat; it’s perceived intention is not to persuade the target, and therefore it bypasses the skepticism it might meet if the individual interpreted the message as a direction of what he or she ‘should’ do. Such strategies would not prompt elaboration or central processing about the message either, which would activate the negative lens and skepticism common in depression. A message that just gives information seemingly unintended for the target is simply heard, and far more likely to be simply accepted. In this study, they compared an
online outreach message directed at the reader, and the same outreach message with pronouns directing the reader to others (i.e., “Are you feeling distressed? … You are not weak.” vs. “Do you know someone who is feeling distressed? … They are not weak”).

As the resistance literature would suggest, they found a boomerang effect with the direct outreach message, finding that depressed individuals who were directly targeted in the campaigns were significantly less likely to seek treatment after reading the outreach material. As they hypothesized, the persuasion strategy undermined the expected resistance. In other words, individuals with depression were more likely to report increased treatment-seeking intentions when receiving the indirect message than when receiving the direct persuasive message with otherwise identical language (Siegel et al., 2014). This initial data lends significantly to the theory that borrowing specific techniques from the persuasion literature that attend to the depressive cognitions might be a more effective approach to target persuasive treatment outreach material for depression.

Some persuasion techniques that may be best suited to the persuadability issues with depression may be those that that simply are never recognized as a persuasion attempt (Knowles & Riner, 2007). They never tell the audience what they should do; they just provide information to a non-specific audience. It would be expected that blatant listing of facts about depression and treatment, without overt attempts to change an individual’s beliefs or to get people to behave in any given way, would be well-suited to a depressed population in order to minimize this reactivity. And yet, the basic education tactics and mental health literacy goals so common in the outreach materials do not reliably improve variables related to seeking treatment, possibly in part due to the reliance on a central route of persuasion that may not work well for depressed
individuals, and may in fact be causing the boomerang effect so often seen in these studies, as discussed above.

In sum, it appears that an indirect message evoking the peripheral route of persuasion with an unidentified ingroup that does not activate resistance to persuasion would be an essential first step to changing intentions and behaviors in treatment-seeking, especially in a difficult-to-persuade group such as depression. In social norms manipulations, the essential and functional portion of the message is simple: “this is what people do” (or, for injunctive norms, “this is what people think is okay”). They do not specify what the reader should do, just passively notes what is done. This does not appear to be a persuasive message, and similar to the ‘overheard’ omega strategy, it does not appear to be directed at the individual for whom it is directed. Gelfand and colleagues (2015) have noted that descriptive norms tend to work especially well when an individual is relying on heuristic cues. Göckeritz and colleagues have suggested that social norm messages play into the ELM by avoiding central processing (Göckeritz et al., 2010), limiting the common counterpliance reaction to deep processing of self-relevant information with which one does not already agree. As powerful as social norms are independent of the audience, the immediate defenses commonly interacting with depressive symptoms and direct persuasive messages are not likely to be activated (Knowles & Riner, 2007). While there is still plenty of reason to believe that any treatment-seeking message would be less effective for individuals with depression than for those without such symptoms, in synthesizing all of this data, it seems that a brief social norms intervention may have significantly increased utility for individuals with depression than interventions not attending to the complexities of speaking to such a
difficult population to persuade. A social norm intervention appears to overcome all identified barriers to the persuasiveness of current outreach messages, and gives a perfectly passive yet powerful message to individuals who may benefit from seeking treatment for depression. Systematically manipulating and identifying the intricacies of specific messages to both depressed and non-depressed individuals will clarify the best use of persuasive language and communication to serve as a foundation on which to build the most effective messages possible in meeting the unmet need of persuading depressed individuals to seek help.

Overview of the study

The proposed project aims to test strategic persuasive techniques aimed to better reach the difficult-to-persuade group of individuals with depression in order to meet the public health crisis of untreated depression. Given the amount of money, effort, and emphasis given to mental health outreach campaigns, it is critical to identify if common phrasings used to target these problems are actually functioning to decrease the power of the message, and what language could work best to maximize the impact of the message. This is intended to optimize the limited budget and access that depression outreach campaigns may have to work with in order to combat such dramatic public health concerns. With appropriate consideration of the successful and less-than successful findings in previously studied outreach campaigns, the large literature on social persuasion techniques including social normative interventions, and considerations of how this particularly important group may react differently than the larger population to the same messages, we have developed hypotheses regarding how outreach campaigns could be optimized for maximum impact on depressed individuals. Because there is
reason to believe that depressive populations are among the most difficult populations to persuade, it logically follows that the findings in this line of research would likely generalize to mental health outreach of different disorders, however additional research would be needed to confirm this assumption. Studies testing the impact of small wording changes on large public health issues such as this one could lead to a cost-effective starting point to change the way that outreach campaigns discuss these essential messages, and may help to minimize or eliminate the myriad of null or iatrogenic findings so common in these expensive, large-scale campaigns.

For the current study, we developed a series of depression outreach public service announcements (PSAs). The PSAs were formatted for Internet viewing, and displayed minimal content to ensure that the findings can be easily replicated in additional studies or outreach materials. The PSAs each highlighted one of the five different normalization approaches: descriptive normalization, injunctive normalization, combination normalization (both injunctive and descriptive), a neutral control with no normalization content, and one that represented those that we were commonly able to find in current outreach materials: mixed anti-normalization or “anti-norms” (i.e. most people don’t seek treatment and most people are stigmatized for seeking treatment).

The current study assesses the effects of the PSA conditions on treatment-seeking attitudes, behaviors, and intentions.

**Hypotheses.** We hypothesized the following:

**Hypothesis 1.** PSA condition will be related to differential attitudes towards treatment-seeking, intentions to seek treatment, and initial treatment-seeking behaviors. Positive treatment-seeking norms, including injunctive, descriptive, and combined
conditions, will result in more positive attitudes, higher intentions, and increased initial
treatment-seeking behaviors when compared to the control condition and the anti-norms
condition. The anti-norms condition will result in less positive attitudes, lower intentions,
and decreased initial treatment-seeking behaviors when compared to all other conditions.

**Hypothesis 2.** Depression will be related to decreased positive attitudes, intentions
to seek treatment, and initial treatment-seeking behaviors.

**Hypothesis 3.** Despite the lower attitudes, intentions and treatment seeking
behavior relative to the full sample, the sub-sample of individuals with depression also
will show condition effects similar to the non-depressed sub-sample, such that positive
norms (injunctive, descriptive, and combination), will result in more positive attitudes,
higher intentions to seek treatment, and increases in clicking on the behavioral link when
compared to the control condition and the anti-norm condition. In other words, when
examining the interaction of depression and condition effects, there will be no significant
moderation effect of level of depression on our condition effects.

**Chapter 4: Method**

**Participants**

Participants were voluntary responders from Amazon’s Mechanical Turk (MTurk), an online “crowdsourcing” web service that connects intelligent work – including surveys and web-based experiments – to “workers” or participants. This recruitment mechanism has been used with increasing frequency for psychological research. A study regarding the population of Mechanical Turk “workers” found that “Mechanical Turk Workers are at least as representative of the U.S. population as traditional subject pools, with gender, race, age and education of Internet samples all
matching the population more closely than college undergraduate samples and internet samples in general” (Buhrmester, Kwang, & Gosling, 2011, p. 5). There is some evidence to suggest that MTurk participants may be systematically different in some ways, including being less extraverted and having lower self-esteem than community samples (Goodman, Cryder, & Cheema, 2013). However, they have been found to be similar to community samples in terms of demographics, decision-making, and in terms of reading and following simple instructions (Goodman et al., 2013; Paolacci, Chandler, & Ipeirotis, 2010). Mechanical Turk has also been found to have similar rates of depression compared to the United States population (Shapiro, Chandler, & Mueller, 2013), although for the current study we used a targeted recruitment strategy (stating in the description that we were looking for people who had “struggled with the blues”) in order to increase the proportion of depressed individuals in the sample).

A total of 609 MTurk workers participated. Previous research has suggested that when using MTurk, researchers may want to include an attention test due to the nature of the environment (Crump, McDonnell, & Gureckis, 2013); we included an attentional manipulation check for this purpose. Of the original 609 participants, 43 participants either dropped out or did not answer the manipulation check, and an additional 190 did not pass the manipulation check. This left a total of 376 participants included for data analysis.

The individuals who were removed from the analyzed sample (those who did not pass the manipulation check) slightly different than the analyzed sample, in that participants who passed the manipulation check were more likely to be female, $F(2, 603) = 4.61 (p < .05)$. Those who had the opinion that they themselves may suffer from a
mental or behavioral health issues (or those who were unsure) were more likely to pass the manipulation check than those who thought they did not suffer from such a disorder, $F(2, 603) = 3.90 \ (p < .05)$. Note that this finding was only in relation to those reporting that they thought they might suffer from a mental health disorder in general; there was no such difference in passing the manipulation check for those who thought they might suffer from depression, $F(2, 603) = .51 \ (p = .60)$, and differences in actual depression scores could not be tested due to the fact that the depression assessment was administered after the manipulation check. No other significant differences in demographic or mental health variables, including perceived mental health issue, depression, age, race, ethnicity, education, urban/rural living, job type, gender, or income bracket.

Of the analyzed sample of 376 participants, 47% were female with an average age of 34 ($M = 30, SD = 11.2 \ Range: \ 18-83$). Seventy-five percent of the sample identified as white or Caucasian, 11% identified as Asian, 9% identified as Black or African American, and the remaining 5% was comprised of individuals who identified as either American Indian (0.5%), Other (1.3%), or More Than One Race (3.2%). Seven percent identified as Hispanic or Latino. The income level among participants was distributed such that less than 1% reported a household income of less than $25,000; 13% reported a household income of $25,000 - 35,999; 25% reported a household income of $35,000 - 49,999; 15% reported $50,000 - 74,999; 38% reported $75,000 - 99,999; 8% reported $100,000 - $149,999; and 1% reported a household income of over $200,000. In terms of the highest level of education, the largest subset of the sample – 38% – had received a bachelor’s degree (less than 1% did not complete high school, 13% had a high school degree, 25% had received some college, 15% had an associate’s degree, 38% had
received a bachelor’s degree, 8% had received a master’s degree, and 1% had received a doctoral degree). As per the inclusion criteria, the entire sample currently lived within the United States; 49% of the sample reported living in a suburban area, 32% reported living in an urban area, and 19% reported living in a rural area. Individuals reported primarily working in several types of jobs: 35% reported working in professional or managerial roles, 22% reported being currently unemployed, 15% reported clerical/sales work, 12% reported service occupations, 11% reported miscellaneous occupations, and 2% reported structural work. Less than 1% each reported agricultural/fishery/forestry work, processing occupations, machine trades, and bench work occupations.

Approximately 36% of the sample reported that they did not believe they suffered from any emotional, behavioral, or mental health disorders, whereas 35% were unsure and 29% believed they did suffer from such an issue. Similarly, 51% believed that they did not suffer from depression, whereas 25% believed that they did suffer from depression, and 24% were unsure. The depression analysis showed that 36% of the sample met the clinical cutoff on the Center for Epidemiologic Studies Depression Scale – Revised (see below) for depression.

**Inclusion/Exclusion criteria.** To be included in the study, participants were required to speak English fluently, currently live in the United States, and be over the age of 18. Individuals with a history of psychological treatment were excluded from the study in order to avoid including a sample that would have expected ceiling effects on intentions to seek treatment, attitudes about seeking treatment, and initial treatment-seeking behaviors. Ultimately it was determined that data from these individuals would not be a useful given that we could assume high intentions and positive attitudes about
treatment-seeking regardless of the condition, and would not be able to interpret initial treatment-seeking behaviors for individuals who had already in treatment (i.e., would it be due to the fact that they already had access to therapist referrals, because they already had seen benefit [or not] from having sought treatment, etc.).

**Recruitment.** The study listing, called a Human Intelligence Task (HIT) on Mechanical Turk, was titled “Promoting Psychology,” and the very brief description allowed by the site stated, “The current survey is looking for participants who have struggled with the blues to give information and opinions that might help to promote psychology. The survey is expected to take approximately 15 minutes.” Participants were remunerated for participation in a scale on par with MTurk standards based on the length of the survey, amounting to 10 cents per approximate minute of participation for a total of $1.50 per subject.

**Procedures**

Interested and eligible individuals followed the MTurk link to the online study, which took place on the online survey program Qualtrics.com. The Qualtrics survey began with a brief screening for inclusion and exclusion criteria, which asked participants their age (assessing to ensure participants were 18 and over), whether they fluently speak English, live in the United States, and whether they have ever sought psychosocial or psychopharmacological treatment for an emotional, behavioral, or mental issue. Eligible individuals were then directed to the consent form. “Participants who have struggled with the blues” was listed in the recruitment materials as what we were looking for in participants, but was not part of the screening or inclusion/exclusion criteria, which we did in order to give us a broader range of participant depression scores while also limiting
the scope of the study to a feasible size. With this strategic recruitment description, 36% of our sample met the clinical cutoff for depression (Van Dam & Earleywine, 2011).

The consent form outlined the majority of study details, including the inclusion and exclusion criteria, procedures, most potential risks and benefits, confidentiality, compensation, and their right to withdraw at any time without penalty. A few study details, including the true purpose of the study and the true audience of the public service announcements, were not revealed in the consent form due to the deception of the participants in the study; these details were later revealed in the debriefing. The contact information for the study investigator was provided at the bottom of the consent form, and a ‘print’ button was available for individuals to keep a copy of the consent form for their records. Individuals were required to select consent in a multiple-choice question in order to continue on to the study. Consenting participants were automatically directed to a brief self-report demographics assessment.

Following the demographics assessment, participants were randomized to condition. The first item on the page included text instructions, stating that participants should pay attention to the ad as they would be asked about it later in the survey. Text instructions also informed participants to click around the PSA to communicate which elements the user liked, and which elements the user did not like. Below the instructions, participants were shown a graphical and text-based image comprising a PSA. The PSA gave information to briefly help identify depression, expressed what was intended to be a brief non-stigmatizing view of depression, and a hopeful statement regarding the effectiveness of treatment. These elements were the same between every condition. The final statement on the page, which we’ll hereby refer to as the intervention statement, was
a statement of norms (or lack thereof) based on the participant’s condition (See Appendix B). Participants were not able to move on to the next page until the PSA had been on the screen for 15 seconds.

Immediately after viewing the PSA, participants were directed to a manipulation check in which they were briefly ‘quizzed’ on the information they received, including two questions regarding the intervention statement: “According to the ad, loosely what portion of people with depression seek help?” and “What did the ad say about the general approval of help-seeking for depression?” Both questions were found in each condition, and both questions included the answers found in the various ads, as well as an answer stating, “The ad didn’t say.” This combination of answers led to a correct combination of answers for each condition, and multiple incorrect combinations. Participants were excluded from data analysis if the answers from these two questions were not correct based on their condition.

Post-manipulation, participants were given a brief treatment-seeking intention question, followed by a questionnaire on treatment-seeking attitudes and a depression assessment (see Measures section and Appendix B). Following post-assessment, participants were given the option to be directed to a therapist finder in a new browser to provide an objective measure of initial treatment behavior (e.g., looking for a therapist). Individuals who chose this selection were asked whether they followed the link with themselves or someone else in mind.

Lastly, participants were directed to a debriefing page, on which we discussed the true purpose of the study and the actual statistics regarding both descriptive and injunctive norms for seeking treatment. Also on this page, participants were provided
with the randomly generated code for payment via MTurk, and all participants were
given the therapist finder link to look for services if they were interested.

**Conditions.** The study included a total of five between-group conditions, which
were different only in the intervention statement embedded in the outreach PSA. The
exact intervention statements can be found in Figure 1 (full PSAs available in Appendix
A).

![Descriptive, Injunctive, Combination, Anti-norms, Control]

*Figure 1.* Text by condition for the intervention statement.

**Measures**

**Outcome Measures.**

*Treatment-seeking intentions question* (*Created for this study*). This primary
outcome measure was a single question: “If you thought you had depression, to what
degree would you intend to see a professional?” Answers were on a 6-point Likert scale
from “Definitely Not” to “Definitely.”

*Attitudes Toward Seeking Professional Psychological Help Scale – Short Form*
(*ATSPPH-SF*: Elhai, Schweinle, & Anderson, 2008). This measure is a widely-used 10-
item assessment in which participants are asked to select the degree to which they agree
or disagree with various statements relating to attitudes towards seeking professional help. Answers are on a 4-point Likert scale from “Strongly Disagree” to “Strongly Agree.” The assessment has been validated in multiple settings, including with college students and primary care patients, and has consistently shown adequate reliability and validity (Elhai et al., 2008). For the current study, we also found a high level of internal consistency, with a Cronbach’s alpha of .85.

*Treatment-seeking behavior link (Created for this study).* This is a behavioral measure, in which the participants saw an option to ‘find a therapist’ through the Association for Behavioral and Cognitive Therapy’s therapist finder link. Qualtrics measured whether participants clicked on the link or not. For participants who clicked on the link, they were asked a question regarding whether they clicked on the link looking for themselves, or looking for someone else. This answer was also recorded, and the therapy finder opened in a new window or tab.

**Manipulation Check.**

*PSA Quiz Manipulation Check (Created for this study).* This measure consists of six questions regarding the PSA that the participant has just seen on the previous page. One purpose of this measure is the participant expectation – we informed participants that there would be a measure to test their knowledge, providing incentive for participants to pay attention to the PSA. The primary purpose however was as a measure itself, which provided information regarding which participants were attending to the PSA. Two questions directly tested memory and attention to the intervention statement (“According to the ad, loosely what portion of people with depression seek help?” and “What did the ad say about the general approval of help-seeking for depression?”). Several other
questions were added with the intention to distract from the importance of the intervention statement questions (e.g., “According to the ad, how can depression feel?”). Two additional questions were added to contribute to the deception cover story (that they were participating as a market research study), but these questions also allowed for some qualitative responses to what people were thinking about the PSA (“What did you like most about the ad?” and “What did you like least about the ad?”). As noted above, this measure was used primarily to remove subjects from analysis who did not prove their attention to the intervention statement, but secondary functions included as a motivator for the participants to pay attention to the ad, and as qualitative data to better understand to what aspects of the ads participants were responding.

Moderator.

Center for Epidemiologic Studies Depression Scale - Revised (CESD-R). Depression was measured using the 20-item CESD-R. The CESD-R is a measure designed to assess the symptoms of depression in line with the Diagnostic and Statistical Manual. It has been found to have good applicability in a general sample. The CESD-R has also been shown to have both convergent validity with other validated measures for depression, and divergent validity with highly comorbid or symptomatically similar presentations. In the current study, we also found a very high level of internal consistency (α = .96).

Covariate.

Demographic and mental health treatment questionnaire (Created for this study). This questionnaire included basic demographic information such as age, gender, ethnicity, education, income, rural/urban living, and job type. Two questions were also
added relating to perceived need for treatment (“In your opinion, do you have any emotional, behavioral, or mental health issues that might benefit from treatment?” and “In your opinion, do you suffer from depression?”).
these outliers and conducted a one-way between subject’s ANOVA to compare the effect of PSA condition on treatment-seeking attitudes. We found that treatment-seeking attitudes were significantly different by condition, $F(4, 365) = 2.46$ ($p < .05$). Post Hoc LSD analyses showed significant differences between the anti-norms condition ($M = 15.00$, $SD = 4.25$) and the control ($M = 17.08$, $SD = 4.65$; 95% CI [-3.65, -.51], $p < .05$), injunctive ($M = 16.76$, $SD = 5.09$; 95% CI [-3.29, -.24], $p < .05$), and combined conditions ($M = 17.09$, $SD = 5.80$; 95% CI [-3.82, -.36], $p < .05$), such that anti-norms were related to significantly less positive attitudes. The descriptive condition ($M = 15.81$, $SD = 4.25$) was not statistically different from any condition.

![Figure 2. Treatment-seeking attitudes (ATTPHS) by Condition.](image)

**Intentions.** The intentions single-item question did not produce answers that were normally distributed both from a visual assessment and from a Shapiro-Wilk’s test for all conditions; the data were moderately positively skewed. Square root transformation also produced positively skewed data and was unable to transform the data to a degree that it could meet assumptions for a one-way ANOVA. Therefore, instead of performing a one-way between subjects ANOVA looking at the effects of the PSA condition on treatment-seeking we opted to transform the data into a dichotomous variable, split such that the
three answers from “Definitely not” to “Somewhat unlikely” were combined and coded as ‘no intention,’ and the three answers from “Somewhat likely” to “Definitely” were combined and coded as ‘intention.’

![Figure 3: Intention to seek treatment percentage by condition.](image)

With the intention dichotomized variable, we ran a chi-square test for association between PSA condition and intention to seek treatment. All expected cell frequencies were greater than five, making chi-square an appropriate test. There was a statistically significant association between condition and intention to seek treatment, $\chi^2 (4) = 11.16$ ($p < .05$).

Looking at conditions individually compared to each other in chi square analyses, we found that there was a statistically significant association on intention to seek treatment between descriptive and combined ($\chi^2 (1) = 4.45$, $p < .05$), descriptive and injunctive ($\chi^2 (1) = 6.97$, $p < .01$), anti-norms and combination ($\chi^2 (1) = 4.09$, $p < .05$), and anti-norms and injunctive ($\chi^2 (1) = 6.15$, $p < .01$). To put this another way, injunctive and combination were not statistically different from each other, and resulted in the highest intentions. The control was in not significantly different than any group, and resulted in intentions in between the other two sets of conditions. Descriptive and anti-
norms were not statistically different from each other, and resulted in the lowest intentions.

Overall, intentions were significantly related to condition such that those who received the anti-norms or descriptive PSAs were significantly less likely to report intentions to seek treatment than those who received the combination or injunctive norm PSAs.

**Behaviors.** We ran a chi square test of association between the dichotomous initial treatment-seeking behavior (clicking on the link/not clicking on the link) and condition. Due to the small portion of participants who selected the initial treatment-seeking behavior (20 participants out of the total 384), the chi squares tests did not meet the assumption qualifications of having all cell frequencies count above five participants. Therefore, it may not be interpretable that there were no significant associations between condition and initial treatment-seeking behavior, $\chi^2(4) = 5.15, p = .27$.

**Hypothesis 2: Depression will be related to decreased positive attitudes, intentions to seek treatment, and initial treatment-seeking behavior.**

To further understand the relationship between depression and the outcome variables, we used depression as the independent variable without the interaction term to examine if levels of depression predicted decreases in intentions or attitudes, regardless of condition. The depression assessment was coded for clinical significance cutoff (CESD-R scores of or above 16, “CESD-R,” n.d.; Van Dam & Earleywine, 2011), such that participants were divided into depressed or non-depressed sub-samples for all depression analyses to follow. We found that, consistent with our hypothesis, higher
levels of depression were associated with increases in negative responses to our treatment-seeking variables.

Looking first at attitudes, we ran a one-way ANOVA with depression as the independent variable and attitudes as the dependent variable, with no groups included in the analysis. We found that depression was significantly related to attitudes about treatment-seeking, \( F(1, 370) = 4.10, p < .05 \), such that the depression group had more negative attitudes about seeking treatment. We ran a chi-square analysis looking at depression and intention, again regardless of condition, and here too found that depression was significantly associated with lower intentions to seek treatment \( (\chi^2(1) = .11.57, p < .05) \). One-way ANOVAs looking at the self-report variables in the demographics section of the study, asking participants if they ‘thought they might’ suffer from either mental health issues generally or from depression specifically, also resulted in lower intentions to seek treatment \( (\chi^2(2) = 6.24, p < .05) \), and that those who reported that they are or might be suffering from depression were also related to lower intentions to seek treatment \( (\chi^2(2) = 22.16, p < .05) \). The results confirm what has been proposed in the literature and found in a few previous studies: that those with depression think more negatively about variables related to treatment-seeking than do non-depressed individuals, regardless of condition.

Similar associations were found with the behavioral link for which assumptions were met to run a chi-square. Clicking on the behavioral link was associated with increased depression both in terms of the participants’ opinions that they have depression \( (\chi^2(2) = 8.19, p < .05) \), and in the clinical cutoff score for depression \( (\chi^2(1) = 14.25, p < .001) \). However, for this analysis, the association was the opposite direction of the
intentions – those who met the clinical cutoff for depression engaged in initial treatment-seeking behavior more frequently.

In sum, we were unfortunately able to confirm that individuals with depression did in fact have differential responding to the primary outcome measures, in that they were less likely to intend to seek treatment, and they had more negative attitudes about seeking treatment. Individuals with depression were however more likely to click on the initial treatment-seeking behavior link, although again the overall rate of clicking on this link was quite low. This is in line with the suggestion in the literature that individuals with depression are in fact more difficult to persuade than individuals without depression. In addition, while the depression link worked as intended with the individuals who did end up clicking largely doing so because they were interested in themselves seeking treatment, the low rate of this initial treatment-seeking behavior suggested that the majority of those who likely would benefit from seeking treatment did not choose to do so at that time in that context, which is consistent with the low intentions of the depressed sub-group.

**Hypothesis 3: Depression will not moderate the effect of conditions on outcome variables.**

In this hypothesis, we assessed if the conditions effects worked for both those with depression and those without, despite the main effect of increases depression reducing positive responding across all of our outcome measures. A univariate general linear model with depression x condition interaction was run to determine whether depression moderated the condition effects. As hypothesized, the interaction was not significant for either intention ($F(4, 370) = .78, p = .54$) or for attitudes ($F(4, 370) = .80,$
suggesting that condition effects were not moderated by depression status for these outcomes. The small portion of individuals who selected the behavioral link did not allow for tests to be run on a dichotomous variable between conditions, however of the 20 participants who clicked on the link (out of the total sample of 376 participants), 15 of them were at or above the cutoff for depression (out of the depression sub-sample of 132 participants).

Post Hoc Analysis. The results suggest that the effect of condition as found in Hypothesis 1 was not affected by depression status. However, given that Hypothesis 3 hypothesized null results, further exploring the data surrounding how depression may interact with the intervention was important. To do this we conducted a series of separate analyses with only the 132 participants meeting or exceeding the cutoff for depression, and the same analyses with only the 239 participants who were below this cutoff.

A one-way ANOVA looking at attitudes for the depressed sub-sample was not statistically significant, $F(4, 127) = 1.45, p = .22$. This same analysis was conducted with the non-depressed sub-sample, and here too the condition effects found in Hypothesis 1 were not found to be significant, $F(4, 23) = 1.35, p = .25$. We conducted a post hoc power analysis with the program G*Power 3 (Faul, Erdfelder, Lang, & Buchner, 2007) to determine whether this null finding could be accounted for by a lack of power. Analysis confirmed that due to the low effect size in both groups (depressed $f = .21$, non-depressed $f = .15$) in combination with the relatively low sub-sample sizes considering the 5 groups (depressed $n = 132$, non-depressed $n = 239$), power was not adequate to interpret the null finding as meaningful (depressed power = .46, non-depressed power = .43).
It may be noted that, although not significant, examination of the descriptive data indicated that the anti-norms condition was related to less positive treatment-seeking attitudes than all other groups, and the control condition was related to the highest levels of positive treatment-seeking attitudes. The three positive norms statements were relatively close in values, and were between the mean values of the control condition and the anti-norms condition, thereby not showing similar patterns to the full sample. This is contrary to the non-depressed group which showed a pattern of results consistent with Hypothesis 1 testing, such that descriptive and injunctive norms were related to increased intentions and more positive treatment-seeking attitudes, and descriptive and anti-norms were related to lower intentions and less positive treatment-seeking attitudes, with the control condition falling between the two pairs. Because they were underpowered, this is not interpretable, however it may continue to suggest that, similar to the larger sample, anti-norms continue to result in less-positive outcomes relating to treatment seeking. Because there was no moderation effect and the control condition was not found to result in more positive outcomes elsewhere, it is not interpretable that this descriptively differs from the larger sample, however it may be worth considering in future research.
Looking at intentions to seek treatment in the depressed sub-sample, we conducted a chi-square test of homogeneity between condition and the dichotomously split intention to ensure that this would be an appropriate test, to meet all assumptions and all expected cell counts for the analysis were greater than five. This assumption was met. The chi-square analysis showed no significant differences in intention to seek treatment between groups ($\chi^2 (4) = 2.38, p = .66$). Looking now at these same analyses with the non-depressed sub-sample, the chi-square test of homogeneity showed that all expected cell counts were now greater than 5, which met the assumptions to allowed for interpretable analysis. The chi-square analysis found that, similar to the full sample and in the same pattern as the full sample, the condition effects were significant ($\chi^2 (4) = 11.14, p < .05$).

A power analysis was completed to determine whether the lack of finding in the depressed sub-sample could be accounted for by insufficient power. The power analysis confirmed that a lack of power may account for this null finding in the depressed sub-sample, whereas there was significantly increase power to detect an effect in the non-depressed sub-sample (power = .20). Ultimately, there was insufficient power to determine differences in intention to seek treatment in the depressed subsample, so it may not be particularly meaningful that we failed to confirm differences between condition in this sub-sample. However, it may be noted that, again the descriptive statistics showed that the anti-norms condition reported lower intentions than did any other condition, and the control condition reported the highest intentions in the depressed group. This is
contrary to the non-depressed group where the pattern of results was very similar to those seen in Hypothesis 1. This suggests that, although not statistically significant, it may be that the anti-norms were related to decreased intentions as expected, but possibly positive norms statements may fare no better, or possibly worse, than not mentioning social norms at all for the depressed group.

![Graph](image)

Figure 5. Intention to seek treatment in depressed and non-depressed subsamples by condition.

The small proportion of individuals who clicked on the initial treatment-seeking behavior link was too small to meet assumptions for any testing in these even smaller depressed and non-depressed sub-samples, and again was not interpretable.

To summarize, in Hypothesis 1 testing we found condition differences such that both injunctive and combination norms statements led to significantly higher intentions to seek treatment and attitudes about treatment-seeking than did descriptive or anti-norms statements, with the control condition falling in the middle of the two sets on these variables. When testing Hypothesis 2, we found that increases in depression were associated with less positive attitudes about seeking treatment, lower intentions to seek
treatment, and higher rates of responding to the initial treatment-seeking behavior link. When testing Hypothesis 3, the interaction of depression status did not moderate the condition effects found in Hypothesis 1. In examining the condition effects for both depressed and non-depressed subsamples, despite a lack of power and non-significant tests of differences, viewing the descriptive data suggests that the results of Hypothesis 1 were largely attributable to effects of the manipulations in those people in our sample who did not meet the clinical cutoffs for depression. In the non-depressed group, the patterns of results were similar to those found in Hypothesis 1 for both Intentions and attitudes. The depressed sample showed a different but consistent pattern of results for both attitudes and intentions, blunting our willingness to state that Hypotheses 3 was supported overall.

In the depressed sample, it appeared that the anti-norms statements consistently resulted in less positive treatment-seeking as seen in Hypothesis 1 and in the non-depressed group analyses, but the control statement resulted in more positive treatment-seeking variables than all the positive norming statements for both intentions and attitudes. While these results were non-significant and underpowered, and in many ways uninterpretable, they are nonetheless suggestive, and suggest that given the small effect sizes found in this study, that the effects in the depressed group may be statistically different in a larger study, though this statement is speculative with the current data.

**Exploratory analyses.**

**Qualitative Analysis.** Upon completion of the analyses reported above, we were interested in some post-hoc analyses that may offer explanations to some of the unexpected findings above, or that may provide utility in expanding upon results or
offering insight into further studies. The open-ended questions asked of participants at the end of the exposure to the manipulations were primarily intended to help with the deception needed for the study, and they asked the participants: “In one or two sentences, what did you like most about the ad?” and “In one or two sentences, what did you like least about the ad?” (see Appendix B). This was a required question, and therefore all participants included in analysis had written something in both boxes. Coding categories were created through reading through initial responses to get a sense of themes, while looking specifically at issues related to the condition statement. However, it is worth noting specifically that the participants had no prompting to respond specifically to the condition statement, nor to what they did or did not like about whatever it was they were noting; they were simply asked to respond to what they most or least liked regarding any part of the ad (the majority of participants did not mention the condition statement in either response). The categories determined for coding included (a) generally noting the statement as either positive or negative for any reason (this category included all other categories), (b) noting reactivity to the statement, (c) questioning the accuracy or truth of the statement, (d) noting the statement’s lack of fit in the ad (generally these responses noted that the wording or layout seemed out of place). One additional category was only found to be thematic in one condition, but similar to the other conditions listed it was coded for in all participants to ensure that it was indeed condition-specific. This category involved feeling that the condition statement was judgmental, and it related to the descriptive condition.

With only the general open-ended questioning that could prompt responses to any portion of the ad, a total of 110 participants (29% of the sample total sample) referred in
some way to the condition statement and therefore were included in the qualitative analysis. All responses referencing the condition statement can be found in Appendix C.

Responses were coded as applying to the condition statement both if they specifically noted the relevant aspects or verbiage of the statement, or if they included the relevant essence of the statement (for example, noting the commonness or acceptance of seeking treatment). There was no condition verbiage in the control condition, but every control condition response was reviewed to ensure that no relevant statements appeared in the responses regardless of what was shown in the ad (i.e., to be sure that approval or commonness of treatment-seeking was not mentioned by the participant even though it was not mentioned in the ad), to ensure accurate comparison between groups. Also, given that some participants in multiple groups noted not liking the condition statement and alluded to it feeling ‘out of place,’ responses in the response condition that clearly noted the layout of the condition area were also included in the analysis, but in a sense this category related to a dislike of the condition statement for reasons that were not theoretically useful (these were coded as (a) noting the condition statement and (d) noting the statement’s lack of fit in the ad).

All statements were coded in the relevant categories by whether the response was in the ‘most liked’ response or the ‘least liked’ response. In the two cases in which participants noted the condition statement in both the ‘most liked’ and ‘least liked’ questions, the responses were viewed for which statement seemed to be held to a stronger degree or was more detailed, and category (a) generally noted the condition statement, was coded as either positive or negative. For example, one participant noted both “I like that it shows that people do get discriminated on when seeking treatment,” and “I think
that pointing it out that it is discrimanated on [sic] might keep people from seeking treatment.” This participant was coded as having a negative response to the condition statement because the negative statement gave more detail.

For the 110 participants who noted the condition statement for any reason at all, a total of 63% noted that something relating to the condition statement was what they liked least about the PSA (38% of these were from the depressed sub-sample), whereas 37% noted that something related to the condition statement was what they liked most about the PSA (32% of these were from the depressed sub-sample). All assumptions were met for a chi-square analysis, which showed a significant difference in positive versus negative statements by group ($\chi^2(4) = 24.49, p < .05$), and notable discrepancies were found in every group (see figure 6).

Figure 6. Participants who noted the condition statement in qualitative responses as what they ‘liked most’ or ‘liked ‘least’ about the PSA, by condition.

For the descriptive group, 91% of those that provided a response noting the condition statement, noted that the condition statement itself was what they liked least about the PSA (30% of the negative responses were from the depressed sub-sample – note that the depressed group represented 35% of the total sample). For the control
condition, 100% of the three responses meeting coding criteria were negative (33% of the negative responses were from the depressed sub-group). In the anti-norms group, 63% reported negative responses to the condition statement (57% of the negative responses were from the depressed sub-group). In the combination condition, only 23% had negative responses (20% of the negative responses were from the depressed sub-group), and in the injunctive condition 66% noted that the condition statement was what they liked least about the ad (37% of the negative responses were from the depressed sub-group). Given that about 36% of the sample was in the depressed sub-group, it appears that individuals with depression were about as reactive as would be expected in most conditions, but that they reacted to the anti-norms statement at much higher rates than would be expected (i.e., individuals with depression found the condition statement in the anti-norms statement to be the least liked aspect of the ad with far greater frequency than individuals without depression). However, we were unable to run a chi square analysis to determine whether this conceptual finding was statistically significant due to the fact that assumptions for a chi square analysis were not met (several cells had expected counts less than 5).
Figure 7: Depressed and non-depressed qualitative responses that noted the condition statement as what they liked most and what they liked least by condition.

While we could not run the analysis by condition, we did run a chi-square analysis with those who noted the condition statement against depression in general, with the question of whether we could see a relationship between depressive negativity and the condition statements in general. No relationships were found ($\chi^2(1) = .51, p = .47$). However, this relatively small sub-group was notably underpowered (power = .07).

We coded each open-ended response for reference to resistance to the condition statement, which we operationalized as either when no alternative reason was given (i.e., the implication that the person simply had a reaction to the statement, good or bad), or when the participant noted an alternative reason but also included emotional language (such as ‘hate’ or ‘comforting’). This group had high overlap with the group above, but leaves out theoretically distinct statements that noted the condition statements, but didn’t seem to have personal reactions to the content (for example, noting the layout or bluntness of the phrase, or unemotionally questioning the accuracy of the statement). A total of 84 participants made a comment noting a reactivity to the condition statement, with 48.4% of these responses noting that their reaction made the condition statement the element of the ad they liked the least (39% of these responses were from the depressed sub-sample), and 51.2% of these responses noting that the condition statement was the element of the ad they liked the most (33% of these responses were from the depressed sub-sample). Some examples of this include statements like, “I like that the advertisement tried to remove any negativity associated with depression as well as emphasize that seeking help is generally approved of by others,” “I HATE that it says most people
approve that you speak out!” and “I liked that they said I'm not the only one who hasn't sought help.”

A chi-square analysis was conducted looking only at the 84 participants who were coded as noting a reactivity to the condition statement. This showed a significant difference ($\chi^2(3) = 18.09, p < .05$), such that those in the descriptive condition were more likely to have negative reactivity (88% negative; 33% of these were from the depressed sub-sample), those in the anti-norms condition were equally likely to have positive or negative reactivity (50% negative; 44% of these were from the depressed sub-sample), those in the combination condition were more likely to have positive reactivity (19% negative; 0 of these were from the depressed sub-sample), and those in the injunctive condition were equally likely to have positive or negative reactivity (49% negative; 54% of these were from the depressed sub-sample). As noted above, no participants in the control condition noted reactivity (see Figure 8).

We ran a chi-square analysis with those who noted reactivity to the condition statement, with the question of whether we could see a relationship with depressive skepticism to the condition statement. However, here too no relationships were found ($\chi^2(1) = .38, p = .54$), and again this small subgroup of the total sample was underpowered (power = .08).
Figure 8: Participant reactivity to the condition statement by condition.

A total of 13 individuals noted that the thing they liked least about the PSA was that they questioned or did not believe the condition statement. For example, one participant noted, “I don't believe that most approve of those who seek help. Most would say that, but still judge harshly.” No analyses were appropriate for the small sample size of a constant variable (given that all responses were negative), however the raw numbers are conceptually interesting. Notably, not a single participant questioned the accuracy of the anti-norms condition, whereas nine individuals noted they did not believe that most people seek treatment (descriptive condition). Three participants questioned whether it was true that most people approved of those who seek treatment (injunctive condition), and although the same statements were made in the combination condition as were noted in the descriptive and injunctive conditions, only one participant questioned the credibility of either statement when both were combined (in this single case, it was the injunctive statement that was questioned). Clearly the number of such responses is too low to draw meaningful conclusions, however it is worth noting the observation that this occurred at a higher rate in the descriptive condition, but did not occur at a notable rate in any other condition – even when the descriptive condition was still present but combined with the injunctive statement, as was done in the combination condition. It appears that there may be something specific about the descriptive condition that evokes skepticism.

The lack of fit in the ad is similarly uninterpretable but worth noting, given that it occurred at a significantly higher rate in the injunctive condition than any other (descriptive = 2, control = 2, anti = 0, combo = 2, injunctive = 9). It’s entirely possible
that this is a spurious finding given the low numbers, however it is also possible that the layout may have affected attention to the condition statement, in that the same space was reserved for the condition statement in each ad, and the same font size was used for each statement, but each ad had a different character length. Possible interpretations and implications relating to outcomes will be discussed below, however it is worth noting that this category is useful in offsetting things that were not liked about the statement that did not appear to be theoretically interesting (i.e., the thing they didn’t like wasn’t the statement itself). This helps to draw a conceptual distinction between the categories of generally noting the condition and reacting to the condition.

Lastly, it’s worth noting that an unexpected response was found in the descriptive condition that may account for the unexpected effect of this condition on the primary outcomes. Of the 22 individuals who noted anything at all about the descriptive condition statement (or the 20 of which who noted something negative), a total of 8 individuals mentioned that they felt the condition statement was judgmental, promoting shame, or meant to make people feel badly for not seeking treatment. There were no mentions of the statement feeling judgmental in any other condition, which although again not statistically testable, is worth reporting for conceptualization and future research. Responses in this condition included statements such as “I didn't like the most people seek help because it makes people feel helpless if they haven't gotten help or are unable to get help,” and “I didn't like the statement that said that most people seek help. Firstly, it doesn't feel like it's true and second, it makes me feel like I'm wrong for not seeking help, in a judgmental way.”

Table 1
Rates of qualitative responses by condition, qualitative coding category and direction (liked/disliked).

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Covariates. Independent of condition, there were some interesting findings worth noting regarding various demographics predicting differential outcomes. For each of the demographic variables (other than self-reported depression or mental health issue, which were reported above in Hypothesis 2), we ran a chi-squared analysis of the demographic by the dichotomous intention and behavioral variables. For each demographic variable, we also ran a one-way ANOVA for the continuous attitudes variable.

Intentions. Associations were found between income and intentions such that higher income brackets were more likely to be associated with higher intentions to seek treatment regardless of condition ($\chi^2(7) = 14.17, p < .05$).
**Behaviors.** No significant associations were found with age, race, ethnicity, education, urban/rural living, job type, gender, or income bracket.

**Attitudes.** Gender was significantly related to attitudes about treatment-seeking, such that females had significantly more positive attitudes about treatment-seeking than did male participants, $F(2, 372), (p < .01)$.

**Depression Correlations.** We ran Spearman’s correlations on all demographic variables against depression to ensure that there were not any covariates that could better account for our findings relating to depression. Unsurprisingly, we found a strong correlation between clinical cutoff scores for depression and individuals’ opinions that they suffered from depression and ($r_s(369) = -.24, p < .005$), as well as individuals’ opinions that they suffered from any mental health disorder ($r_s(369) = -.20, p < .005$). In addition however, we found that the clinical cutoff for depression was correlated with education ($r_s(369) = -.11, p < .05$), and marginally correlated with income ($r_s(369) = -.10, p = .05$). Gender, race, ethnicity, urban/rural living, job type, and age were unrelated to depression.

Given that both depression and income were related to intentions, we ran two additional analyses to determine whether the intentions findings for Hypotheses 2 and 3 might be better accounted for by income than depression. We ran a one-way ANCOVA with income as a covariate, continuous intentions as the dependent variable, and depression as the independent variable (i.e., adding income as a covariate to the intentions analysis from Hypothesis 2). We tested for outliers, and no cases were removed for having either standardized residuals greater than +/- 3, or for having a combination of high Cook’s D and leverage values. Once depression means had been
adjusted for income, we found that we could retain our conclusions from Hypothesis 2, in that depression still predicted intention to seek treatment ($F(1, 368) = 15.33, p < .005$).

To confirm that our results for Hypothesis 3 regarding intentions, we ran another ANCOVA with income as a covariate, continuous intentions as the dependent variable, and the interaction term of depression x condition as the independent variable. We tested for outliers, and a total of 3 cases were eliminated based on having a combination of high Cook’s D and leverage values. Consistent with Hypothesis 3, after adjusting for income, there was not a significant depression moderation effect on intention to seek treatment ($F(105,266) = .96, p = .58$).

In sum, post-hoc analyses helped to explain the unexpected findings regarding how the descriptive normative statement functioned in the larger group, leading especially to unexpected resistance, increased skepticism of credibility of the statement, and feeling judged by the statement itself. Lastly, we found that treatment-seeking variables were largely unrelated to demographic variables, however in the two cases where relationships were found, they could be expected. For example, individuals in higher income brackets were more likely to report intentions to seek treatment, which makes sense given the cost of traditional treatment. Females were more likely than males to report more positive attitudes regarding treatment-seeking, which is consistent with the literature regarding the increased stigma and difficulty with treatment-seeking among males. Because of the correlation between depression and income, we ran ANCOVA analyses to ensure that our previous hypotheses involving depression were not better accounted for by income, and we found that income did not better explain the effects involving depression and income in either Hypothesis 2 or Hypothesis 3.
Chapter 6: Discussion

Summary of results

Ultimately, it is clear that the anti-norms statements so commonly found in outreach materials, those that attempt to show the reader the power of the problem by noting how prevalent and normal the problems can be, are not useful and can ultimately undermine the message. We can conclude that the significant funds and effort spent annually on outreach should be informed of better practices regarding how to increase treatment-seeking for individuals who suffer from depression to have a better chance at minimizing boomerang effects.

Interestingly, the effects of descriptive condition were opposite of our predictions – we had hypothesized that both types of norms statements (descriptive and injunctive), as well as the combination of both, would increase treatment-seeking relative to the control condition. What we found instead was that the descriptive norms condition was more closely related to the anti-norms condition in terms of the outcome variables, in that both were related to more negative attitudes about treatment-seeking and lower intentions to seek treatment. In further exploring the qualitative data questions included in the manipulation check and intended primarily to further promote the deception story, we found that ultimately our wording was not perceived as the omega strategy that we intended, but instead as a blatant persuasion “everybody’s doing it” tactic, or as a judgmental statement of “why aren’t you doing this common thing?” In the open-ended questions in the manipulation check, dozens of individuals noted that they didn’t like intervention statement of the descriptive condition because it felt pushy or otherwise felt that it was trying to take away autonomy, and another handful noted that it felt like we
were noting a judgement of those who weren’t acting ‘normal’ by seeking treatment. In a sense, this may be among the most important findings – that the way we worded our descriptive norm, we created a separate boomerang effect than the one we were predicting. As noted from the literature, it’s not uncommon for descriptive norms to be less effective than injunctive norms (Smith & Louis, 2008). However, because of the theory and the power of descriptive norm interventions in some contexts, in combination with the fact that this intervention is simple to add to any intervention and has the added ethical benefit of being true, there was an empirically-based hope that it could have utility in this context. We didn’t find that the descriptive norms were inert, as the descriptive norm critics might have hypothesized. Instead, we found that they were worse at the intended goals of increasing positive attitudes and increasing intentions than was an empty space (the control condition). While there are several possibilities regarding why this boomerang effect occurred, the incredibly useful bottom line is that there is a science to crafting a message that works as intended, and there is utility to testing statements individually instead of simply relying on common sense or even general literature.

A few possibilities as to why this unexpected finding occurred were supported by the qualitative analysis. The first is that the descriptive condition failed to have the effects of the omega strategy (or overcoming resistance to persuasion) that we had anticipated. We noted an expectation that simply stated the commonness or acceptance of a behavior would not be likely to invoke a resistance to persuasion, because it would not be seen as ‘you should do this,’ but instead that ‘this is what is done.’ However, as noted there was a significant reactivity to this condition that was statistically different
from every other condition. You could see examples in the individual open-ended statements that, unlike what was intended, it did feel to some like we were saying what they should do. For example, one participant noted: “Most people seek help seems pressuring to me.” So, it appears that one assumption we were relying on in our theory of why this statement would be effective was not met – some people clearly did see it as an attempt to tell them what they should do. However, it’s interesting to note that the exact same statement was also listed as half of the combination condition, which did not induce the same reactivity – and in fact, more people in the combination condition had a positive reactivity specifically noting the condition statement than in any other group. Again, this included the exact same statement that induced the most negative reactivity. Similarly, in the descriptive condition – but not in any other condition – people noted with some regularity that the condition statement felt judgmental. It was not read as simply “this is what people do,” it was read as “this is what normal, acceptable people do, and all others are weird or wrong.” Clearly, this is not the omega strategy we were aiming for. Again, this powerfully shows that the exact language used in an intervention matters – evidently the exact same statement couched inside a longer statement that adds injunctive norms has no evidence of any boomerang, and simply behaves as intended and hypothesized.

The other possible explanation we found in the qualitative analysis was that people simply did not believe the descriptive norm. Nearly half of those in the descriptive condition who mentioned the condition statement also thought to mentioned in their brief response that they didn’t believe it was true. Responses to what they liked least about the ad in the descriptive condition included statements like, “The claim that most seek help. Totally untrue;” and “I didn't like that it said most people seek help
because that was a lie.” The open-ended statements were brief, so we don’t currently have the ability to determine whether there is an issue in regards to credibility here that might be solved with the addition of quoting an expert or adding a source. What we do know however is that participants tended not to believe us (in the way that we worded it and with the information we included) that most people seek treatment. Participants did not report this same skepticism when this same statement was combined with the injunctive norm; in this case only one single participant noted that they questioned the veracity of the claim, and the question was actually in regards to the injunctive statement. Again, it’s worth noting that according to the commonly cited large database of the National Comorbidity survey (Kessler et al., 2003), our descriptive statement was correct – most people with depression do seek treatment. And yet, the injunctive statement, that most people approve of those who seek treatment, appears to be completely false from all literature we could find and was completely fabricated, but it was hardly a theme for individuals who received this statement to question its veracity. Also worth noting, not a single participant commented on the veracity of the anti-norms condition – seemingly it was easy to accept for participants that most people don’t seek treatment and those that do are often met with discrimination. There are a couple ways to interpret this. One is that there is something about the statement itself or the way it was isolated on the ad that increased skepticism, maybe the plain or blunt verbiage that was selected for methodological reasons but that realistically may not have had a great flow or feel, or that it took up the same space that was used for longer statements in other conditions so it seemed larger or out of place promoting more attention and thereby skepticism. However, and possibly more plausibly, this also could mean that the very common anti-
norm statements made throughout the internet, PSAs and advertisements throughout the
country have actually succeeded in forming opinions to the extent that individuals are
convinced of the anti-norm’s truth as ‘common knowledge.’ Ultimately, it appears that
descriptive norms may have to work even harder to offset the questionably correct but
common information that outreach materials that groups like the NIMH and other
outreach organizations may have helped to spread, which we already have shown may in
fact be iatrogenic (“NIMH » Men and Depression,” n.d.). Future research should
consider several possibilities, and test both different verbiage of descriptive norms,
differences in source credibility on treatment-seeking attitudes, intentions, and related
variables, and look for associations between preconceptions about the commonness of
treatment-seeking in relation to the how effectively the descriptive norm can affect
variables related to treatment-seeking.

While still looking at the qualitative analysis, it is interesting to note that a total of
nine participants out of 18 in the anti-norms condition who mentioned the condition
statement mentioned specifically liking the anti-norms statement. The individuals
mentioned something in relation to feeling validated or to bringing attention to what they
felt was an important problem with treatment – the stigma. One participant simply noted,
“I liked that they said I'm not the only one who hasn't sought help.” This set of
responses, while not statistically important, is meaningful in that it highlights both the
tendency for people to want to highlight negative norms with a lack of awareness of how
that will impact attitudes and intentions. The single norms statement as a participant
response also showed the power that norms are supposed to have – that you’re not alone
in doing this unhelpful thing. This too is important to note in that it shows the danger in
associating *liking* a communication with having that communication be *useful* for the intended outcome; in the case of the anti-norm statement, people reported liking the statement just fine, but the outcome measures clearly showed that it negatively affected treatment-seeking attitudes and intentions.

All other conditions displayed expected association in the full sample, in that the control condition produced outcomes between the anti-norms condition and the other positive norms conditions (injunctive and combination). As noted previously, it’s interesting to consider that the combination norms statement listed the exact wording as the descriptive in addition to the exact wording of the injunctive conditions. In terms of veracity or skepticism this has a few interesting possibilities, but it is also interesting to consider the significant difference in outcomes between descriptive and combination norms for both treatment-seeking attitudes and intentions given this overlap. Again, the literature suggested that injunctive norms would be more powerful than descriptive norms, but it is possible that injunctive norms were powerful enough to undo the damage that was done by descriptive norms. It’s also possible that attention spread between two sentences made the condition statement stand out less in a way that was better able to catch the skeptic attention of the user, similar to ‘hiding’ the persuasive message by using the ‘overheard’ persuasion technique discussed earlier to overcome resistance to persuasion (Siegel et al., 2014). Future research may look into whether injunctive norms are in fact powerful enough to overcome messages known or suspected to cause reactivity or change outcomes in the opposite direction of the injunctive norm, in the context of treatment-seeking or otherwise. In addition, it may be worth testing whether
length or detail of the paragraph that holds a normative statement has any effects on variables of interest, again in this or other contexts.

This study also confirmed some previous findings regarding the difficulty specifically with individuals who are depressed or who believe they might be depressed. For both intentions and attitudes, depression variables were related to lower rates of treatment-seeking outcome variables. Again, the previous findings and predictions that depressed individuals seem to be the most difficult to target seem to be confirmed. However, it is also interesting in this vein to note that individuals with depression were more likely to pass the attention manipulation check, even when individuals with depression tend to have difficulty with concentration, and therefore one might expect that they would be less likely to pass an attention control. One interpretation of this finding could be that, as the elaboration likelihood model would suggest, those for whom the ad was relevant (i.e., depressed individuals) had increased motivation to concentrate on or attend to the ad. This also could point to a self-selecting bias however, in which those who were depressed and chose to participate in the first place were more open to or interested in learning about or looking at depression, which is what the advertisement for the study stated was the purpose of the study. If this were the case, those who chose to participate would already have a biased interest in the information provided within the study before the advertisement occurred. Further studies may look into self-selecting biases of depressed individuals, but may also look into whether focusing additionally on the multiple factors in the ELM that may interact with depression and how individuals with depression attend to and process messages about depression. Specifically, it may be interesting to look more specifically into whether focusing more on the central route of
processing may have added or differential effects compared to or in addition to social normative messages.

Interestingly, we did not find depression to be a significant moderator in our direct test of moderation, although we did find that individuals with depression showed overall less positive attitudes towards treatment seeking, lower intentions to seek treatment, but also higher rates (statistically) of initial treatment-seeking behavior, regardless of condition. We did find that sub-samples of non-depressed individuals showed condition effects on intention to seek treatment, whereas the depressed sub-sample did not show this same effect, however the depressed sample was smaller and had lower power, and was underpowered for this analysis. We did not find any significant condition effects on treatment-seeking attitudes in either the depressed or the non-depressed subsamples, but both analyses were underpowered. Given the combination of results in all hypotheses, it may be that the differential negativity towards treatment-seeking variables is so strong as to wash out any condition effects, such that individuals with depression simply didn’t respond to any of the conditions and remained skeptical and different to persuade. However, with the descriptive reports suggesting some trends similar to the larger group, in combination with the smaller effect sizes found in the depressed sub-group, it is certainly feasible that the condition effects may still be present but would take a substantially larger sample size to detect. So, while it failed to confirm our hypotheses that positive social norms messages may be more effective in persuading individuals with depression, it was far from disconfirming this hypothesis. This is especially true when again considering the substantial effect it could have to move a small portion of depressed individuals to seek treatment when looking at a very large
public-health setting. In short, the sub-sample of depressed individuals was underpowered to detect effects of condition statements, so it remains possible that depressed individuals are equally un-persuaded by all conditions, or that even the control condition may result in more positive attitudes and higher intentions to seek treatment than positive norms statements, but it remains entirely possible be that social norms may prove effective persuasive communication devices, even for those with depression. Further testing would be needed with larger sample sizes, and with alternate types of persuasion in order to determine which types of communication in fact are most successful at moving variables related to treatment-seeking, and the behavior of actually seeking treatment.

In addition, it would be worth attempting to replicate social norms interventions with both depressed and non-depressed individuals, especially in comparison to other types of persuasive messages or with baseline data, to determine whether norms messages can reliably overcome the differences in groups, or move depressed groups closer to the non-depressed groups after the intervention. Including baseline assessment of treatment-seeking variables may also help to determine the direction of said change, which would be especially useful given the descriptive data that the control conditions led to non-statistically more positive attitudes and higher intentions to seek treatment.

There was an extremely low positive response to the initial treatment-seeking behavior question, such that only a total 20 out of 376, or a total of 5.32% of the sample opted to view the link. It may be likely that the low response rate simply is evidence that the intervention is not powerful enough to evoke behavior change, or not powerful enough to evoke immediate behavior, and this is certainly a possibility. However, it’s
also possible that this responding was due to the distinctive differences in the MTurk populations and the greater population. For example, it has been found that MTurk participants tend to be more frugal than a community sample (Goodman et al., 2013), which may lead to a decrease in willingness to seek treatment for other reasons. Additionally, due to the nature of the MTurk tasks, it’s possible that participants simply have competing contingencies to stay ‘in’ the tasks and not look at outside links while they are ‘working.’ Additional research would be warranted to determine whether the rates are low because the treatment gap is strongly at play, or whether something about the sample or the analog itself might be at play.

The literature on the treatment gap shows a broad range of what percentage of individuals who could benefit from treatment end up seeking treatment, but our sample ran significantly lower than any reported ranges. Of a total of 132 individuals met the CESD-R cutoff for depression, by inclusion criteria none were currently seeking treatment, and only 15 out of 132 – or 11% – followed our initial treatment-seeking behavior link. We would of course expect that the criteria itself would lead to a self-selection of individuals who had actively chosen not to seek treatment, such that we would find significantly lower rates of treatment-seeking in our sample than in other reported samples. However, even in this case we would expect a higher response rate for those who were not depressed who were interested in looking for treatment for someone they knew, but it seems that even this reason for clicking on the link resulted in lower responses than one might expect. Studies suggest that one in 12 individuals suffer from depression, which would imply that the significant majority of people know someone to some degree who is suffering from depression (Pratt & Brody, 2014). And yet, only 2%
of those without depression clicked on the link (5 individuals of 244). We did find that individuals with depression were more likely to click on the link, however we would conceptually expect this to be true for individuals who clicked on the link for themselves, which was ultimately 85% of all individuals who clicked on the link. It is unknown what rates one would expect when looking into treatment for others, but this conceptually seems low, and given that it is also low for individuals who meet criteria for depression, it is worth questioning whether it is something in the setting, language or modality of offering help that was responsible for the low response rate. Ultimately, because the intention findings did not match up well with the initial behavioral links, and because we know that intentions are strong predictors of behavior, we find the behavioral outcome measure in this study to be uninterpretable and warranting further study.

Another possibility for this lack of behavioral follow-through however might be related to an unintended effect of social normative influence itself. As noted above, ultimately the reason social norms are believed to work is that they guide behavior by informing the individual regarding what is socially acceptable or desirable, or to avoid isolation or rejection. One possibility that became apparent after two qualitative responses mentioned similar concerns, is that seeking treatment is not similar to other settings in this regard: no one would need to be convinced that a person who is not currently seeking treatment should not be ostracized. Yet the question at hand is whether people who DO seek treatment should be accepted. Ultimately, the risk is unidirectional; there is no risk to social appeal to stay out of therapy. But even if most people think treatment-seeking is a positive thing, this still leaves the minority that this theory suggests might still be feared. Although it was only noted three times directly between the two
conditions noting positive injunctive norms, a couple participants did notice this issue, stating: “I didn't like that it said most people approve of people who get help because it just made me think of the stigma associated, and it basically means that not all people approve of those who get help,” “Most makes me immediately think of those who won't accept it,” and “saying "most" isn't too comforting to me.” It should be noted however that if this is the case that this context can only possibly offer harm in pointing out the possible stigma that could come with seeking treatment, it would not undermine the still powerful effects of anti-norms – we would still expect from this theory and from the alternate findings in the study that the norms suggesting ostracism and deviance from others would make it even more unlikely to follow that link. Further research including pre- and post-communication attitudes and intentions would be needed to determine whether highlighting the possibility that even a minority of others might look down on treatment may have negative effects on such variables.

As discussed in the introduction, we know that norms may be less likely to guide behavior in confidential settings, which was the case in this study. This is another possible explanation as to why the behavior did not line up with the stated intentions. It may be that, as discussed above, the confidentiality inherent in both research studies and in seeking treatment minimizes the effects of these social norms statements.

Confidentiality too was noted by a few individuals in the open-ended question, in which one participant stated: “Gaining other's approval is not that relevant because I probably would keep it private if I did ever seek help.” Ultimately, confidentiality may relate to several issues in this study, including that some individuals may have increased apprehension to seeking treatment in thinking about that others may find out about it, and
that social norms may in fact not be as powerful for a scenario in which no one could watch the behavior and therefore there would be no reason to expect the positive outcomes of engaging in socially acceptable behavior: social approval.

One last possible explanation for why the behavioral response was lower than predicted is that it was an issue of timing or larger context. As has been noted in another study in which test groups reported different attitudes but did not display different behaviors, it is possible that the intentions might translate into behavior at a later date or in another context (Smith, 2015). Therefore, whereas we did not have any measurable changes in behavior, it’s possible that the significant changes in intentions by condition relate to behaviors that will come at a later time or date, or in a different context or modality. Of course, as noted previously, intentions can be a good analog, but are not an acceptable replacement for measuring behavior. It would be essential in future research to add longitudinal follow-up to determine whether the communication had an impact on actually engaging in treatment-seeking behavior.

Limitations

**Depressed Sample.** Just over a third of our sample met CESD-R criteria for depression, which means that our sample may not provide adequate generalizability to depressed individuals. We know from extent literature that individuals with depression may react differently to the same communication, so it would be essential to determine how this sample specifically may respond to a given communication. It is certainly a useful step to compare the groups of depressed and non-depressed individuals to gain progressive understanding of when and how these populations are similar and different,
but ultimately it will be the depressed sample alone that would determine the utility of a depression outreach communication.

**Long term follow-up.** A consistent concern throughout the literature is that the vast majority of treatment-seeking studies tend to focus on attitudes, and we have very little information regarding how these interventions affect actual treatment-seeking behavior. This common problem will unfortunately also be a limitation in the proposed study for logistical reasons. We would expect that a large grant would be necessary to keep a reasonable attrition level in a community sample with such minimal incentive. The initial treatment-seeking behavior link was intended to speak to this concern, but as noted it was unsuccessful in doing so, and future research would need to modify the study to increase the responsiveness to the analog behavioral measure, or would need funding or alternative solutions to measure long-term behaviors. While measurement of the actual behavior should not be undermined, we would like to note that treatment-seeking intentions have been found to be notably predictive of treatment-seeking behaviors (Schomerus, Matschinger, & Angermeyer, 2009). Therefore, it may be useful to find consistent and reliable effects on intentions before spending resources to measure behaviors, but clearly we will not understand any communication’s effects on behaviors unless or until we measure said behaviors, and future research should clearly consider such measures.

**Baseline assessments.** Ideally, we would have liked to include measures of treatment-seeking intentions and attitudes before and after the intervention, however we determined that this may have a priming effect that could influence the engagement with the material. We intended to keep any treatment-seeking information to a minimum
before the intervention. Such communication or priming may communicate to the participant that the PSA is in fact an attempt to persuade, and this may activate reactance to the message or to the study. The current study only explores the relationship of the outcome variables to the condition at a single time point. It would be a useful addition to evaluate change scores in various moveable outcomes related to treatment-seeking, in order to better determine what elements of the PSA to carry forward to future research. For example, although the results clearly suggest that the injunctive normative PSA increased intentions and attitudes towards treatment-seeking relative to the other conditions, it’s still possible that there was a net reduction in these outcomes when compared to baseline (i.e., it’s possible that even the most useful PSA in this study still created a ‘boomerang effect’). Including these measures early in the study may bias responding by priming the participants to be thinking about treatment-seeking and their relationship to it before viewing the PSA, however future research in this area would contribute greatly to our understanding of how to best use PSAs to increase treatment-seeking for depression. Future studies should explore this possibility or alternatives to avoid this possible priming.

Participants. As noted elsewhere in this document, the MTurk population may not be fully generalizable to other populations. The high rate of individuals who did not pass the attention control questions may have otherwise biased the analyzed participant data, and self-selection based on the study description may also have biased the sample. Individuals in the MTurk population have been noted to be more frugal than the general population, and this may limit treatment-seeking intentions for financial reasons. Future studies may want to include populations with systematically different financial access to
treatment-seeking, including offering web-based interventions as a behavioral link option, or by recruiting from a sample of students with access to free college counseling center treatment.

One of the most interesting findings in the literature is when outreach materials are able to change the anticipated mediator, but are not able to change intentions regarding treatment-seeking. It has been hypothesized that additional barriers, such as finances and other logistical issues, may account for these unexpected findings. It would be interesting to replicate such studies with college students or other populations with access to free or affordable treatment to determine whether finances do in fact account for the lack of change in intentions.

Conclusions

Lienemann and colleagues once wrote, “Anyone who creates a D-PSA [depression PSA] targeting people with depression without considering how the mind of a person with depression operates is engaging in behavior akin to reckless endangerment” (Lienemann et al., 2013, p. 726). The findings that statements suggesting that most people either don’t seek treatment or are discriminated against by doing so appear to fall into this category. While the results from this study are not sufficient to give us insight into creating an evidence-based PSA specifically for people who are depressed, the study does provide ample evidence regarding what to avoid, and initial insights about the next steps in creating an evidence-based depression PSA.

Ultimately, the initial results suggest that there is general utility to using both combined and injunctive norms, and that it is certainly useful to avoid anti-norms communications. But it does not give us insight as to whether this reliably reaches
depressed individuals, or whether it affects actual behavior. And the unexpected and interesting boomerang effect that occurred from the descriptive condition gives further promise to the notion of testing individual statements for utility before sending them to the masses and hoping for the best. While the current study clearly shows that to the masses, treatment-seeking norms for depression guide intentions and attitudes in most ways as we would expect them to, it also suggests that for a group so difficult to persuade, minimal norms interventions may not be enough to make significant change in the target population. Further research will be needed to continue to build a foundation of understanding how to effectively target this difficult audience without causing unintended boomerang effects in persuasive outreach messages, and ultimately how to combat the public health crisis of untreated depression in the United States.
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Appendices

Appendix A: Study advertisements by condition.

Anti-norms condition.

Do you know someone who is feeling Distressed?

Feeling Helpless?

Feeling Worthless?

THEY MIGHT BE DEPRESSED, AND IT’S NOT THEIR FAULT.

Depression can feel bleak, but it doesn’t have to be. Professional treatment can teach ways to cope.

MOST PEOPLE NEVER SEEK HELP, AND MOST WHO SEEK HELP EXPERIENCE DISCRIMINATION.
Combination Norms Condition.

**Do you know someone who is feeling**

**Distressed?**

**Feeling Helpless?**

**Feeling Worthless?**

**They might be depressed, and it's not their fault.**

Depression can feel bleak, but it doesn't have to be. **Professional treatment can teach ways to cope.**

**Most people seek help, and most people approve of those who seek help.**
Descriptive Condition

Do you know someone who is feeling distressed?

Feeling helpless?

Feeling worthless?

They might be depressed, and it's not their fault.

Depression can feel bleak, but it doesn't have to be. Professional treatment can teach ways to cope.

Most people seek help.
Injunctive Condition

Do you know someone who is feeling Distressed?

Feeling Helpless?

Feeling Worthless?

THEY MIGHT BE DEPRESSED, AND IT’S NOT THEIR FAULT.

Depression can feel bleak, but it doesn’t have to be. Professional treatment can teach ways to cope.

MOST PEOPLE APPROVE OF THOSE WHO SEEK HELP.
Do you know someone who is feeling Distressed?

Feeling Helpless?

Feeling Worthless?

They might be depressed, and it's not their fault.

Depression can feel bleak, but it doesn't have to be. Professional treatment can teach ways to cope.
Appendix B: Study Materials (Qualtrics Survey)

Screening

[Age] How old are you?

If How old are you? Is Less Than 18, Then Skip To Unfortunately, you are not eligible...

[Resident] Do you currently live in the United States?

☐ Yes (1)
☐ No (2)

If No Is Selected, Then Skip To Unfortunately, you are not eligible..

[Treatment History] Have you ever seen a professional for emotional, behavioral or psychological reasons?

☐ Yes (1)
☐ No (2)

If Yes Is Selected, Then Skip To Unfortunately, you are not eligible...

[Language] Do you speak English fluently?

☐ Yes (1)
☐ No (2)

If No Is Selected, Then Skip To Unfortunately, you are not eligible...
Introduction

Before you agree to be in this study, please take time to read this form. It explains why we are doing the study; and the procedures, risks, discomforts, benefits and precautions involved. This form may use words that you do not understand. Please ask the researchers to explain anything that you do not understand.

Please be completely truthful about your eligibility to be in this study. If you are not truthful, you may harm yourself by being in the study.

You do not have to be in this study. Your participation is voluntary.

Take as much time as you need to decide. If you say yes now but change your mind, you may quit the study at any time. Just navigate out of the survey on your browser if you do not want to continue.

**Why are we doing this study?**
We are doing this study to find out how best to promote psychology.

**Why are we asking you to be in this study?**
We are asking you to be in this study because you are an Mturk worker who is over 18, is fluent in English, has not sought professional help for an emotional, behavioral, or psychological issue, and currently lives in the United States.

**What happens if you agree to be in the study?**
If you agree to be in this study you will be asked to answer a variety of questions related to your knowledge and opinions of mental health treatment.

**How long will you be in the study?**
The study will take about 15 minutes of your time just this one time.

**What happens if you do not want to be in the study?**
Nothing will happen if you decide not to be in this study.

**Is there any way being in this study could be bad for you?**
If you agree to be in this study, you may experience slight emotional arousal due to answering questions related to mental health.

**Will being in this study help you in any way?**
Being in this study may not help you, but you may learn about psychology in ways that may or may not be useful to you or to people you know. Benefits of doing research are not definite; however we hope to learn how best to promote psychology treatment.

**How will we protect your private information and the information we collect about you?**
We will treat your identity with professional standards of confidentiality and protect your private information to the extent allowed by law. We will do this by not collecting any personally identifying information from you. Although all data will be de-identified, we will also encrypt all data for the study.

**Who will know that you are in in this study and who will have access to the information we collect about you?**
The researchers, the US Department of Health and Human Services (DHHS), the University of Nevada, and the Reno Social Behavioral Institutional Review Board will have access to your study records.

**Will it cost you anything to be in the study?**
There will be no costs to you to be in the study. Will you be paid for being in this study? You will receive a payment of $1.50 for participation, to be delivered through your MTurk account.

**What happens if you agree to be in the study now, but change your mind later?**
You do not have to stay in the study. You may withdraw from the study at any time by navigating out of the survey on your browser.

**What if the study changes while you are in it?**
If anything about the study changes or if we use your data in a different way, we will tell you and ask if you if you want to stay in the study. We will also tell you about any important new information that may affect your willingness to stay in the study.

**Who can you contact if you have questions about the study or want to report an injury?**
At any time, if you have questions about this study or wish to report an injury that may be related to your participation in this study, contact Crissa Levin at 775-453-0406, or Anthony Papa at 775-682-8666.
Who can you contact if you want to ask about your rights as a research participant?
You may ask about your rights as a research participant or talk (anonymously if you choose) to the University of Nevada, Reno Social Behavioral Institutional Review Board by calling (775) 327-2368 or sending a note from the Contact Us page of this website: http://www.unr.edu/research-integrity.

Do the researchers have monetary interests tied to this study?
The researchers and/or their families do not have any monetary interests tied to this study.

Agreement to be in study
If you agree to be in the study, click “I Agree” below. You may also print a copy for your records. [print button]

By clicking “I Agree” below, you are saying:

- You agree to be in this study.
- You have read about the information in this document and all of your questions have been answered.

You know that:

- You may stop participating in the research at any time.
- You may call the University office in charge of research at (775) 327-2368 if you have any questions about the study or about your rights.

☑ I Agree (1)
☑ I Do Not Agree (2)

If I Agree Is Selected, Then Skip To End of Block

[If ‘I Do Not Agree’ is selected] Unfortunately, you are not eligible to participate in this study. Thank you for your interest and willingness, and have a great day!

If Unfortunately, you are not ... Is Displayed, Then Skip To End of Survey
Demographic Questionnaire
Which best describes your gender?
☐ Male (1)
☐ Female (2)
☐ Other (3)

Which best describes your race?
☐ American Indian/Alaska Native (1)
☐ Asian (2)
☐ Hawaiian/Other Pacific Islander (3)
☐ Black or African American (4)
☐ White (5)
☐ Other (6)
☐ More than one race (7)

Which best describes your ethnicity?
☐ Hispanic or Latino (1)
☐ Not Hispanic or Latino (2)

Which best describes your household annual income?
☐ Less than $25,000 (1)
☐ $25,000 - $34,999 (2)
☐ $35,000 - $49,999 (3)
☐ $50,000 - $74,999 (4)
☐ $75,000 - $99,999 (5)
☐ $100,000 - $149,999 (6)
☐ $150,000 - $199,999 (7)
☐ $200,000 or more (8)

In your opinion, do you have any emotional, behavioral, or mental health issues that might benefit from treatment?
☐ Yes (1)
☐ No (2)
☐ Unsure (3)
What is your highest level of education?

- Some high school or less (1)
- High school Degree or GED (2)
- Completed some college (3)
- Associate Degree (4)
- Bachelor's Degree (5)
- Master's Degree (6)
- PhD, JD MD, or other doctoral-level degree (7)

Which best describes the area in which you live?

- Rural (1)
- Urban (2)
- Suburban (3)
- Other or unsure (4)

In your opinion, do you suffer from depression?

- Yes (1)
- No (2)
- Unsure (3)

How would you categorize your current job?

- Professional, technical, and managerial (1)
- Clerical and sales (2)
- Service occupations (3)
- Agricultural, fishery, and forestry (4)
- Processing occupations (5)
- Machine trades (6)
- Benchwork occupations (7)
- Structural work (8)
- Miscellaneous occupations (9)
- Unemployed (10)
Condition Page
The version of the advertisement we're testing is below. Please be sure to pay attention to
the ad, as we'll be asking your opinions about it later in the survey.

Please click once on the concepts you like (green), and twice on the concepts you dislike
(red). Note that you must view the image for 15 seconds before the next button will
become available.

[screenshot of interacting with the advertisement as described]
Manipulation Check
To ensure that you paid attention to the ad, we have a brief quiz about what you might have seen in the ad, followed by a few questions about your own opinions of the ad. Please answer the multiple-choice questions to the best of your ability, and say whatever first comes to mind for the short answer questions.

What color was used for the first line of the ad?
- Black (1)
- Red (2)
- White (3)

According to the ad, how can depression feel?
- Confusing (1)
- Bleak (2)
- Like a bad dream (3)
- Physically painful (4)

According to the ad, loosely what portion of people with depression seek help?
- Most people seek help. (1)
- Most people do not seek help. (2)
- Approximately 50% of people with depression seek help. (3)
- The ad didn't say. (4)

What did the ad say about the general approval of help-seeking for depression?
- Most people approve of those who seek help. (1)
- Most people who seek help experience discrimination. (2)
- Approximately 50% of people approve of those who seek help. (3)
- The ad didn't say. (4)

In one or two sentences, what did you like most about the ad?

In one or two sentences, what did you like least about the ad?
Intention question.
If you thought you had depression, to what degree would you intend to see a professional?

- Definitely not (1)
- Probably unlikely (2)
- Somewhat unlikely (3)
- Somewhat likely (4)
- Probably likely (5)
- Definitely (6)
Attitudes Towards Professional Help Seeking (ATTPHS)
Read each statement below and select the answer that most closely represents the degree that you Agree or Disagree with the statement. There is no right or wrong answer to each statement; your own reaction is what is important.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree (1)</th>
<th>Disagree (2)</th>
<th>Agree (3)</th>
<th>Strongly Agree (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>If I believed I was having a mental breakdown, my first inclination would be to get professional attention. (1)</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>The idea of talking about problems with a psychologist strikes me as a poor way to get rid of emotional conflicts. (2)</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>If I were experiencing a series of emotional crises at this point in my life, I would be confident that I could find relief in psychotherapy. (3)</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>There is something admirable in the attitude of a person who is willing to cope with his or her conflicts and fears without resorting to professional help. (4)</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>I would want to get psychological help if I were worried or upset for a long period of time. (5)</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>I might want to have psychological counseling in the future. (6)</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>A person with an emotional problem is not likely to solve it alone; he or she is likely to solve it with professional help. (7)</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>Considering the time and expense involved in psychotherapy, it would have doubtful value for a person like me. (8)</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>A person should work out his or her own problems; getting psychological counseling would be a last resort. (9)</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>Personal and emotional troubles, like many things, tend to work out by themselves. (10)</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
</tr>
</tbody>
</table>
Center for Epidemiologic Studies Depression Scale – Revised (CESD-R).
For each statement, please indicate how often you have felt this way recently by selecting the option you most agree with.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Not at all or less than 1 day last week. (1)</th>
<th>One or two days last week. (2)</th>
<th>Three to four days last week. (3)</th>
<th>Five to seven days last week. (4)</th>
<th>Nearly every day for two weeks. (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>My appetite was poor. (1)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I could not shake off the blues. (2)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I had trouble keeping my mind on what I was doing. (3)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I felt depressed. (4)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>My sleep was restless. (5)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I felt sad. (6)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I could not get going. (7)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Nothing made me happy. (8)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I felt like a bad person. (9)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I lost interest in my usual activities. (10)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I slept much more than usual. (11)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I felt like I was moving too slowly. (12)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I felt fidgety. (13)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I wished I were dead. (14)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I wanted to hurt myself. (15)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I was tired all the time. (16)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I did not like myself. (17)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I lost a lot of weight without trying to. (18)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I had a lot of trouble getting to sleep. (19)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I could not focus on the important things. (20)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
Initial Treatment-Seeking Behavior Link

Thank you for your participation! Now that we've highlighted issues with treatment, we just wanted to offer an easy opportunity to seek help if you or someone you know might benefit. The link below will send you to a therapist finder, where you can find a professional in your area. If you're interested in finding a therapist for yourself or someone you know, feel free to click the link below and it will open in a new tab.

☒ I want to search for a professional therapist by zip code (1)
☒ I do not want to search for a therapist (2)

If I do not want to search for... Is Selected, Then Skip To Thank you for your participation...

For whom are you interested in finding a therapist?

☒ Myself (1)
☒ Someone I know (2)

Please be sure to continue here to receive your payment code before viewing the therapist finder page. This link to the Association for Behavioral and Cognitive Therapists 'Find A Therapist' feature will open in a new window.
Debriefing
Thank you for your participation in this study. Now that you have completed the entire survey, we want to let you know that we have not been entirely honest with you about the study purpose, or about some of the statistics you may have seen in the brief advertisement you viewed.

The purpose of this study was to see if the advertisement convince you to seek treatment, or to change your personal attitudes about treatment-seeking for depression. We were testing a few persuasion principles to see if there were ways to make a message promoting treatment-seeking for depression have more reach and help more people. One thing we were looking at was based on the idea that often people who know they are being persuaded are more resistant to persuasion and more skeptical of the message, so we were a little bit indirect about the fact that we were trying to persuade you.

The other principle we were looking at was whether different "social norms" statements (statements about what other people do or of what other people approve) would be more or less powerful in this type of advertising. There is a lot of research to suggest that telling people "most people seek treatment" or "most people approve of those who seek treatment" would actually make people more willing and interested in seeking treatment, and yet most of the advertising out there right now says the opposite. Some of you got an advertisement that basically said one or both of these message, but some of you got a very different message - that most people DO NOT seek treatment, or that most people are stigmatized for seeking treatment. So you can see that to test this question, we ultimately had to lie to a lot of participants. The truth is, that if you look at mental health issues in general, most people do not seek treatment (Wang et al., 2005). If you look at depression specifically though, it varies from one study to another, but the most reliable source in our view says about 51% of people with depression seek treatment (so we could say that most people with depression DO seek treatment; Kessler et al, 2003). Unfortunately though, the data suggests that approving of seeking help is far less common, and it appears that it's quite common for people seeking psychological help to be stigmatized, looked down upon, and treated poorly for having sought treatment (Barney, Griffiths, Jorm, & Christensen, 2006; Ben-Porath, 2002; Kelly & Jorm, 2007).

The reason why it was important to test this question (and therefore lie to you) is because the rest of the ad was true - many people suffer from depression, and treatment for depression really can be very helpful - but far fewer people seek treatment for depression than we would hope. We're hoping to find ways to reach out to the public more effectively, and hopefully increase the number of people who seek treatment that might benefit from psychological help.
If you feel concerned about this study or your participation, please feel free to contact Crissa Levin at 775-453-0406 or Anthony Papa at 775-682-8666, or the University of Nevada Reno Research Integrity Office at (775) 327-2368. If you would like to find a therapist near you, you can use this Find A Therapist feature (the same link presented in the study). If you are in a crisis or have any thoughts of harming yourself, the National Hopeline Center is available 24/7 by calling 1-800-SUICIDE (800-784-2433).

Thank you again for your participation, and you will find your MTurk participant code (for payment) on the next page.
Appendix C: Qualitative Responses.

All qualitative responses to the questions “In one or two sentences, what did you like most [/least] about the ad?” that mentioned reference to the condition statement are below. The responses are grouped by both condition, and whether their response to the condition statement was in the ‘liked most’ or ‘liked least’ response. Responses are printed as listed by student, which includes typos as they were entered.

Anti-norms qualitative responses that referenced the condition statement as what they ‘liked most’ about the ad:

<table>
<thead>
<tr>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>what I like about the ad was that it highlights real facts about depression in which those experiencing don't seek help and others seem to discriminate in a way.</td>
</tr>
<tr>
<td>The ad touched on key points. That people with depression may try to hide it, the feel a stigma against seeking help even if they want it, sometimes the depression itself prevents them from seeking help, a friend can help along the way, and that often their behaviors aren't the result of their own thoughts and actions but the depressions Control on their life. In just a couple lines the ad really said a lot.</td>
</tr>
<tr>
<td>I liked the imagery and the mention of discrimination. Really shows how when someone is depressed and needs help feeling alone and being discriminated against only makes things worse</td>
</tr>
<tr>
<td>I liked that they said I'm not the only one who hasn't sought help.</td>
</tr>
<tr>
<td>I liked that it explains depression isn't something the person experience can help and that it's common for those experiencing depression to be discriminated against</td>
</tr>
<tr>
<td>I like that it shows that people do get discriminated on when seeking treatment.</td>
</tr>
<tr>
<td>I like that it gave you the stats about how people seek help and how other react to it.</td>
</tr>
<tr>
<td>How it says that most people who have depression don't seek help, and that those who do may experience discrimination. This part of the ad draws attention to the stigma that people place on mental health issues, and may help in combating it.</td>
</tr>
</tbody>
</table>
Anti-norms qualitative responses that referenced the condition statement as what they ‘liked least’ about the ad:

<table>
<thead>
<tr>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>The statement that those who seek help are discriminated against, which hardly encourages people to seek needed help.</td>
</tr>
<tr>
<td>At the top, I didn't like the phrasing about feeling worthless. I realize that's how people feel at times with depression, but it seems wrong and inappropriate to reinforce that feeling with placing it in the ad. I also didn't like at the bottom about being discriminated against when you seek treatment. If the ad is about encouraging people to seek treatment then I would think you wouldn't want to reinforce the chance of discrimination.</td>
</tr>
<tr>
<td>That the discrimination is probably factual. It offers no improvement plan for that.</td>
</tr>
<tr>
<td>It should not mention that if you seek help you will face discrimination.</td>
</tr>
<tr>
<td>I didn't like that people are discriminated against just for trying to get help.</td>
</tr>
<tr>
<td>The last bit about being discriminated against. This will probably drive sufferers away from seeking treatment.</td>
</tr>
<tr>
<td>The part talking about discrimination, which would scare most people off from getting help.</td>
</tr>
<tr>
<td>I didn't like that it said people seeking help would face discrimination, and didn't really explain how or why that would be.</td>
</tr>
<tr>
<td>I thought the bottom part talking about how those who seek help are discriminated against would discourage people from doing so.</td>
</tr>
<tr>
<td>I didn't like that it said depressed people would be discriminated against. It might make people not seek help.</td>
</tr>
<tr>
<td>Focused a lot on the negatives of treatment. did not really encourage me to get help.</td>
</tr>
<tr>
<td>I don't enjoy the fact that the few that seek help for their depression often experience discrimination.</td>
</tr>
<tr>
<td>Saying you will be discriminated against.</td>
</tr>
<tr>
<td>It says that people who seek help get discriminated. I think that can push people away who need help.</td>
</tr>
<tr>
<td>I think that pointing it out that it is discriminated on might keep people from seeking treatment.</td>
</tr>
</tbody>
</table>
Combination condition qualitative responses that referenced the condition statement as what they ‘liked most’ about the ad:

| The statement about most approving seeking help for depression. |
| The encouragement that I got from seeing that most people seek help and that it's not anyone's fault if they experience depression. |
| the colors and the statements about it. I also liked the approval of other people |
| That most people approve of those that seek help. |
| That it made it seem alright to want to seek help |
| Made you think that you are not alone. |
| It's telling people its ok |
| It states that people approve of those who seek help. |
| It made it sound like seeking help for depression was not unique, which might encourage people to think that it's more common than they do. |
| It made it out like it's not bad to be depressed and it's not a bad thing to want to get help. |
| It encouraged people to seek help and reassured them that most people would approve of them getting help. It also reaffirmed that depression is not their fault. |
| I liked that it was comforting and told people that help and feeling better was possible and that they are supported. |
| I liked that it shows that getting treatment for depression is acceptable and a good thing. |
| I liked that it promoted getting help and not being stigmatized by it. |
| I liked how the ad was positive and encouraged the viewer to feel normal about their situation. |
| I liked how the ad suggested that people approve of others seeking help. I liked the way the ad was organized and structured. |
| I like that it encourages people to seek help and that their experience is relatively normal |
Combination condition qualitative responses that referenced the condition statement as what they ‘liked least’ about the ad:

<table>
<thead>
<tr>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>I didn't like the fact that they made it sound like depressed people need approval from others about their treatment.</td>
</tr>
<tr>
<td>saying &quot;most&quot; isn't too comforting to me, the color changes were weird</td>
</tr>
<tr>
<td>Nothing really. The only issue was that the comment that most people seek professional help wasn't well worded.</td>
</tr>
<tr>
<td>the blurb at the bottom was abit weird about most people seeking help and being approved of</td>
</tr>
<tr>
<td>That it said most people seek help or that most approve of seeking it. Most people seem to look down on those who suffer from it and figure they're just being whiny, lazy, etc so many suffer in silence.</td>
</tr>
</tbody>
</table>
Control condition qualitative responses that referenced the condition statement as what they ‘liked most’ about the ad:
No responses met these criteria.

Control condition qualitative responses that referenced the condition statement as what they ‘liked least’ about the ad:

<table>
<thead>
<tr>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>The yellow hands - they were weird and didn't go with the rest of the ad.</td>
</tr>
<tr>
<td>I thought that the message could have been explained differently. I can't quite explain it but there was something off about the text. Also there was too much blank space at the bottom.</td>
</tr>
<tr>
<td>The difference between the photo and the bottom half, they were so different it was distracting</td>
</tr>
</tbody>
</table>
Descriptive condition qualitative responses that referenced the condition statement as what they ‘liked most’ about the ad:

<table>
<thead>
<tr>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>I like the sentence &quot;Most People Seek Help&quot;. It is true in the day to day life. Most of people living their life in a mechanical way.</td>
</tr>
<tr>
<td>I like that it was inviting people to get help by saying that most people get help. This makes people who need help feel like it is normal and will be more open to getting help.</td>
</tr>
<tr>
<td>I liked how it made depression seem like it was okay, and okay to get help</td>
</tr>
<tr>
<td>I liked that it made me feel like I wasn't alone.</td>
</tr>
</tbody>
</table>
Descriptive condition qualitative responses that referenced the condition statement as what they ‘liked least’ about the ad:

| Most people seek help seems to pressuring to me. |
| I think "most people seek help" could make people who are scared to get help even more apprehensive. |
| I don't like the claim that most people seek help. It seems like a harmless term saying that other people do it and you should too but it essentially calls out the individual who hasn't sought help. |
| I didn't like the fact that it said most people get help because it may make someone with depression feel guilty or ashamed about not getting help. |
| I didn't like the most people seek help because it makes people feel helpless if they haven't gotten help or are unable to get help. |
| I didn't like the statement that said that most people seek help. Firstly, it doesn't feel like it's true and second, it makes me feel like I'm wrong for not seeking help, in a judgmental way. |
| I didn't like that it said most people get help. Seemed irrelevant to me. |
| I didn't care for the second part saying that everyone else seeks help. I don't really care about whether other people seek help. |
| I thought the wording "most people seek help," sounded negative for someone who maybe struggles with asking for the help that they need. |
| The statement that 'most people seek help.' I think most people are too embarrassed to seek help and DO NOT seek help so this is misleading. |
| I don't like that it says most people seek help. that could make a depressed individual feel like more of a failure for not seeking help. |
| I didn't like the wording of the ad as far as "most people seek help" because that's not really accurate. |
| The claim that most seek help. Totally untrue. |
| I felt like some of the sentences marked in red were lies and made the whole ad feel less helpful. |
| That it says most people seek help which I don't believe is true |
| I didn't like that it said most people seek help because that was a lie |
| I didnt like how it said most people seek help. |
| I liked the ad overall, the least liked part was the box that claimed " Most people seek help". |
| I disliked that it said most people get help, cuz i'm not sure thats true. |
| I didn't understand the line that most people seek help. It didn't seem to make sense to me. |
Injunctive condition qualitative responses that referenced the condition statement as what they ‘liked most’ about the ad:

<table>
<thead>
<tr>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>The overall message that there is nothing wrong with seeking help</td>
</tr>
<tr>
<td>The line that states that most people approve those who seek help.</td>
</tr>
<tr>
<td>The idea of calling in both those with depression and the approval of those without (approval).</td>
</tr>
<tr>
<td>The ad made it seem like a good and accepted idea to seek help.</td>
</tr>
<tr>
<td>That it would be okay to seek help because most people approve of those who did.</td>
</tr>
<tr>
<td>It made it sound like you would not be thought bad of for seeking help.</td>
</tr>
<tr>
<td>It made it seem like people would approve</td>
</tr>
<tr>
<td>I liked the fact that the ad tried to show that those who suffer from depression are still accepted if they seek treatment.</td>
</tr>
<tr>
<td>I liked that the ad mentioned that most people approve of those who seek help.</td>
</tr>
<tr>
<td>I liked that the ad gave a sense that depression is, in a way, normal, meaning many people suffer from it and it's okay to admit it and to seek help for it.</td>
</tr>
<tr>
<td>I liked that it helps people who may think it is a personal weakness to seek help. It tells them that it is okay to do so; no one will disapprove of them.</td>
</tr>
<tr>
<td>I liked how the ad gave hope to those that are feeling depressed and the idea of getting help was approved by most people. The ad made it feel like even though someone was depressed there was help out there and they are not the only ones who are feeling the emotions.</td>
</tr>
<tr>
<td>I like that the advertisement tried to remove any negativity associated with depression as well as emphasize that seeking help is generally approved of by others.</td>
</tr>
<tr>
<td>Most people approve of those who seek help</td>
</tr>
<tr>
<td>I like that it didn't blame the person suffering</td>
</tr>
<tr>
<td>I like that the ad doesn't seem pushy and uses good keywords to make me think that it might be beneficial to seek help.</td>
</tr>
</tbody>
</table>
Injunctive condition qualitative responses that referenced the condition statement as what they ‘liked least’ about the ad:

<table>
<thead>
<tr>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>I didn't like that it said most people approve of people who get help because it just made me think of the stigma associated, and it basically means that not all people approve of those who get help.</td>
</tr>
<tr>
<td>I don't believe that most approve of those who seek help. Most would say that, but still judge harshly. Plus the whole bottom half was not a good aesthetic match for the top.</td>
</tr>
<tr>
<td>That it was all about how you feel if you seek help. It was all about embarrassment.</td>
</tr>
<tr>
<td>I didn't like the wording about most people approving. It implies one needs other's approval.</td>
</tr>
<tr>
<td>I didn't like the way the bottom sentence about approval was worded. It came across wrong I think.</td>
</tr>
<tr>
<td>The 'most people approve of those that seek help' felt more a nudge to get you to find help for others, not yourself.</td>
</tr>
<tr>
<td>The part about most people approving. I don't think that is really necessary to say.</td>
</tr>
<tr>
<td>I didn't understand the reason to include the part about other peoples approval.</td>
</tr>
<tr>
<td>I felt it was odd to say &quot;most people approve of those who seek help.&quot; Seems like most could be removed or changed in some way to make it more optimistic.</td>
</tr>
<tr>
<td>I'm not sure where they gather the basis that most people approve.</td>
</tr>
<tr>
<td>I did not like the bottom left message saying that most people approve because I think that people might not want people to know at all. I also don't think the distressed in the top right flowed with the rest of the ad. It should have been placed differently and said &quot;feeling distressed&quot;</td>
</tr>
<tr>
<td>I didn't really like how the ad insisted that people approved of people who seek out help. It felt a little pushy.</td>
</tr>
<tr>
<td>I didn't know the impression that most people approve of others seeking help. People suffering from depression can be discouraged by such statements.</td>
</tr>
<tr>
<td>I did not like that it talked about how most people approve of those who seek help. Gaining other's approval is not that relevant because I probably would keep it private if I did ever seek help.</td>
</tr>
<tr>
<td>I HATE that it says most people approve that you speak out! That's not true and that makes people feel pressured to talk about their emotions.</td>
</tr>
<tr>
<td>I didn't like the approval part. I didn't like the worthless part.</td>
</tr>
<tr>
<td>I didn't really like the part about people approve of those who seek help. It was just worded weird to me.</td>
</tr>
<tr>
<td>I didn't really see the need for the part where it said &quot;most people approve of those who seek help.&quot;</td>
</tr>
</tbody>
</table>
I didn't like the fact that it stated most people approve of those who seek help. I don't think it should matter how many people approve to motivate a person to seek help.

I don't like that it focused on the approval of others.

Most makes me immediately think of those who won't accept it.

The "Most people approve of those who seek help" line sounds weird to me.

I didn't like the way the words were laid across the first image, I also thought it was strange they talked about people approving of seeking help.

The part about people will approve of you for getting help. I do not know that sounds like a really wrong thing to say to get someone to come in for help. They don't need to think of other people, or other people's views, the main thing is they feel 'bad' and they can feel better as long as they come for the help that is there waiting for them. / / /

I really did not feel that the ad had to say that most people approve of those who seek help. I believe this could hurt the ad and I didn't like it.

the last message kind of works against those suffering because looking to be approved by others can also be a problem.