

TREATMENT SEEKING FOR SOCIAL ANXIETY

A RANDOMIZED STUDY OF ONLINE INTERVENTIONS TO FACILITATE TREATMENT
SEEKING FOR SOCIAL ANXIETY

by

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TREATMENT SEEKING FOR SOCIAL ANXIETY

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A Randomized Study of Online Interventions to Facilitate Treatment Seeking for Social
Anxiety

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Abstract

Objective: Social Anxiety Disorder (SAD) is one of the most prevalent psychological disorders and often causes substantial distress and impairment. Although effective psychotherapy exists (e.g. cognitive-behavioral therapy), the majority of affected adults never seeks treatment for their SAD. The present study aimed to address this challenge by developing, implementing, and evaluating the impact of two distinct online interventions designed to facilitate treatment seeking among adults with social anxiety symptoms.

Method: Adults with elevated social anxiety were recruited online through Amazon's Mechanical Turk. Participants were randomly assigned to one of two online, single-session conditions: (1) brief psychoeducation, interactive Acceptance and Commitment Therapy (ACT) and Motivational Interviewing (MI)- based intervention, and referral information or (2) brief psychoeducation and referral information alone. Follow-up (FU) data was collected one month post-intervention. A sample of $N = 245$ adults completed the intervention session. **Results:** Hypotheses regarding the feasibility of the intervention were supported. Both conditions were engaged and reported moderate satisfaction. The data supported the hypothesis that both conditions would improve attitudes toward seeking treatment, intentions to seek treatment, and perceived behavioral control over seeking

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treatment over time, with exceptions on particular subscales. Hypotheses regarding group differences were partially supported. On some outcomes (e.g. attitudes), the motivational condition was more effective than the control, as hypothesized, whereas on others the conditions did not differ significantly. Behavior reported at FU revealed that across groups, the majority of participants engaged in at least one action toward seeking treatment following the intervention. The data supported the hypothesis that the motivational condition would engage in more total treatment seeking behavior than the control, but this did not hold true on behavior subscales (with the exception that motivational condition participants sought significantly more “alternative” treatments, including life coach, meditation, herbal supplements, toastmasters, religious/spiritual advisor, exercise, or other, than the control). **Conclusions:** Utilizing a brief online format is a promising direction for facilitating treatment seeking for social anxiety. We recommend that future research include an active comparison or match conditions on length, have sufficient statistical power to detect group differences in behavioral outcomes, and use simpler language to describe evidence-based treatment.

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Introduction

Social Anxiety Disorder (SAD, also called Social Phobia) is the second most common anxiety disorder and one of the most prevalent psychological disorders, with a lifetime prevalence of 12% (Kessler et al., 2005). SAD often causes substantial distress and impairment, substantially diminishing quality of life (Stein & Stein, 2008). The National Comorbidity Survey Replication found that 93% of individuals diagnosed with SAD reported impairment in home, work, relationships, and/or social life and over one-third endorsed that impairment as severe (Ruscio et al., 2008). SAD is also economically costly, mainly due to losses in productivity: estimated yearly costs are \$385 million per one million inhabitants, controlling for comorbidity (Acarturk et al., 2009b), and costs increase with symptom severity (Stuhldreher et al., 2014). Even subthreshold SAD results in significant functional impairment (Fehm, Beesdo, Jacobi, & Fiedler, 2008). Notably, SAD typically onsets during childhood or adolescence (Grant et al., 2005) and often runs a chronic course if untreated (Bruce et al., 2005), causing substantial impact across the lifespan.

SAD also confers risk for the development of other psychological disorders. For instance, SAD often temporally precedes and is considered a risk factor for the development of depression (Stein et al., 2001). Additionally, SAD often precedes the development of substance use disorders. For example, Buckner, Bonn-Miller, Zvolensky, and Schmidt (2007) found that among the internalizing disorders, SAD served as a unique risk factor for the subsequent onset of cannabis and alcohol dependence.

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Fortunately, various forms of psychotherapy are effective for SAD (Acarturk et al., 2009a). In particular, there is strong empirical support for cognitive-behavioral therapy (CBT) in both group and individual delivery formats for treating SAD (e.g. Hoffman & Smits, 2008). CBT improves SAD symptoms and quality of life in both the short and long term, and across both specialty (Heimberg, 2002) and community settings (Stewart & Chambless, 2009). More recently, mindfulness- and acceptance-based behavioral treatments for SAD have demonstrated similar efficacy to traditional CBT in both group (Kocovski, Fleming, Hawley, Huta, & Antony 2013) and individual (Craske et al., 2014) delivery formats, thus providing an alternative behavioral treatment option.

Despite the existence of effective treatment, the majority of affected adults never seeks or receives *any* type of SAD treatment (Keller, 2006). Iza et al. (2013) found that, in a large epidemiological data set, only one-quarter of adults with SAD had ever sought treatment for their SAD. Similarly, Ruscio et al. (2008), examining another epidemiological data set, indicated that approximately two-thirds of adults with SAD had sought treatment for any mental health problem in their lifetime, but only one-third had sought treatment for SAD. Insufficient treatment seeking for SAD was even more prevalent among the subset of adults who met criteria solely for SAD (i.e. without comorbid diagnoses; Ruscio et al., 2008). Among that subset, those with greater number of social fears - that is, those who were most distressed and impaired - sought treatment at the lowest rates (1–4 fears: 26% sought treatment in their lifetime, 5–7 fears: 17 %, 8–10 fears: 14%, and 11+ fears: 8%).

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In summary, adults with SAD tend not to seek treatment for their SAD despite the impairment and chronicity of the disorder. Even when adults with SAD eventually seek treatment, it is often many years after the onset of the disorder. For example, Wang et al. (2005) reported a median 16-year delay between disorder onset and treatment seeking for SAD.

To compound the low rates of receiving *any* treatment for SAD, only a minority of adults with SAD who seek treatment *for that disorder* receive an adequate dose of treatment. Wang et al. (2005) found that only 38% of adults diagnosed with SAD who received treatment for their SAD in the year prior had received “minimally adequate treatment” according to standard anxiety disorder treatment guidelines (requiring at least two months of antidepressant or anxiolytic pharmacotherapy plus at least four visits with any type of physician, *or* at least eight, 30-minute minimum psychotherapy visits with any health services professional). For treatment seeking adults with SAD, the median number of visits (in general medical or mental health specialty settings) was roughly three, which is below recommended levels.

In addition to insufficient *quantity* of treatment, adults with SAD often receive inadequate *quality* treatment. Keller (2006) examined treatment approaches utilized early in the course of SAD and found that various community settings more often utilized supportive and psychodynamic treatment approaches than they did cognitive and behavioral methods. Unfortunately, supportive and psychodynamic approaches have less empirical support than do cognitive and behavioral approaches for SAD (supportive: Cottraux et al., 2000; psychodynamic: Leichsenring

et al., 2014). Similarly, Wolitzky-Taylor et al. (2015) found that less than half of adults with a primary diagnosis of SAD who sought treatment in a large adult outpatient psychiatry clinic were offered CBT, and only 10% were offered behavioral exposure (likely the most powerful component of CBT; see Glenn et al., 2013). In summary, the literature indicates that adults with SAD are generally not seeking nor receiving evidence-based psychotherapy for their disorder. Given the prevalence, chronicity, and individual and societal impact of SAD, this treatment dissemination gap poses a compelling public health challenge.

The present study aims to address this challenge by developing, implementing, and evaluating the impact of two distinct online interventions designed to facilitate treatment seeking among adults with social anxiety. Both intervention conditions include information (psychoeducation and treatment referrals) designed to improve knowledge. They also educate participants about what constitutes evidence-based treatment for SAD, thus addressing the issue of treatment quality. Additionally, one condition employs in-depth reflective exercises designed to increase motivation for treatment and test these effects above and beyond the effects of knowledge.

Findings from existing literature related to treatment seeking, in conjunction with theory, guided the determination of the key content and delivery format to utilize in the interventions included in the present study. To date, most treatment dissemination research has attended to therapist-level (e.g. misguided beliefs about exposure therapy) and system-level (e.g. healthcare policy) barriers to evidence-based mental health treatment (McHugh & Barlow, 2010). Client-level barriers have received less attention. Gallo et al. (2013) suggest that understanding and

addressing client-levels barriers is important for moving toward increased consumer demand for evidence-based mental health treatments.

Understanding the Challenge: Barriers to Treatment Seeking

To understand client-level barriers to seeking evidence-based treatment for SAD specifically, one must first understand the barriers to treatment seeking *of any kind* for adults with SAD, given the notably low rates.

SAD-specific barriers. Griffiths (2013) synthesized existing knowledge and theory regarding treatment seeking barriers to into a useful conceptual “framework for increasing help-seeking” in SAD (see Diagram 1). This theoretical model incorporates SAD-specific barriers (“*illness factors*”), general treatment seeking barriers (*knowledge, beliefs, attitudes, accessibility of help*), and elements of *attitudes and behavior*. Griffiths organized the barriers into a pathway by which treatment seeking in SAD is hypothesized to occur, in order to guide the development of

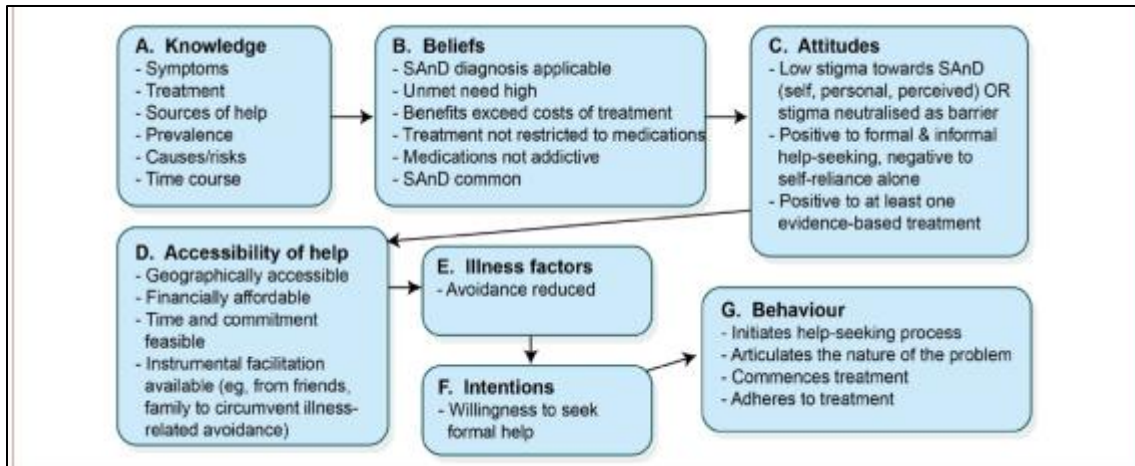


Diagram 1. Source: Griffiths et al. (2013), by permission

interventions to change help-seeking behavior. Emphasizing such factors as attitudes and intentions, this model is congruent with established behavior change

theories including the Theory of Planned Behavior (Ajzen, 1991), while integrating what is known about SAD.

However, one seemingly important factor to behavior change - motivation derived from personal values (who and what are most important to a person) - is not clearly emphasized in this model. Griffiths (2013) posits that motivational enhancement techniques could impact the *intentions* and *behavior* components but does not emphasize values-based motivation as a core factor. Making the decision to seek treatment can be challenging and anxiety-provoking for adults with SAD. Thus, strong motivation drawn from personally relevant values or goals may be a necessary and even a core element of treatment seeking in SAD – as has been shown in the parallel literature on treatment seeking in the context of substance use disorders (Lundahl & Burke, 2009). Unfortunately, research on barriers to treatment seeking in SAD to date has not directly examined the role of insufficient motivation. However, preliminary intervention studies utilizing motivational enhancement techniques, discussed in the *Frameworks for Intervention* section below, have successfully facilitated evidence-based psychotherapy utilization in adults with anxiety disorders (Buckner & Schmidt, 2009 and Maltby & Tolin, 2005). Such findings suggest the centrality of personal motivation based on exploration of personal values and goals in motivating treatment-related behavioral change in anxiety disorders, thus warranting inclusion in the present study.

Approaches from ACT are promising because as reviewed, the distress and avoidance that is symptomatic of SAD typically causes impairment across several domains of functioning. Often, the domains that are impacted (e.g. connection with

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others, contributions to work) are personally valuable to individuals. Promoting identification of personal values/ways in which social anxiety interferes with these values and introducing skills to align behavior with values even in the presence of difficult internal experience is directly applicable to actions toward treatment seeking.

SAD studies to date. When adults with SAD do seek mental health treatment, they are more likely to be seeking treatment for comorbid mental health concerns than they are for their SAD specifically, despite the significant distress and impairment conferred by SAD itself (Ruscio et al., 2008). Interestingly however, Zimmerman and Chelminski (2003) found that when adults seeking treatment for other mental health concerns (who also meet diagnostic criteria for SAD) are asked directly, 75% endorse that they would also like treatment addressing their SAD. This finding does not generalize to an entirely non-treatment seeking population, however it does suggest that adults with SAD may lack the knowledge needed to identify SAD as a treatment target.

A small number of studies have examined barriers to treatment seeking for SAD. Dalrymple and Zimmerman (2011) found that among general outpatient treatment seeking adults who also meet criteria for SAD, having a shorter duration of illness, reporting a greater number of feared situations, and experiencing depressive symptoms each predicted a higher likelihood of identifying SAD as their target of treatment or expressing desire for SAD treatment. The authors speculated that a cohort effect or attitudes (e.g. "I'm used to it") could account for the former effect, while degree of impairment may account for the latter two.

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Two additional studies (Olfson et al., 2000 and Chartier-Otis, 2010) have found support for specific treatment seeking barriers in SAD, and these findings were incorporated into the Griffiths (2013) model. Olfson et al. (2000) examined retrospective self-report data from the 1996 National Anxiety Disorders Screening Day. Adults who experienced social anxiety symptoms (full SAD criteria not assessed) but had not sought treatment were asked to identify which barriers from a list were relevant for them. The most frequently endorsed barrier was uncertainty over where to seek help, which fits into the *knowledge* component of the Griffiths (2013) framework. Additionally, at least one-fifth of adults endorsed reasons related to *attitudes* (e.g. “could handle the situation on their own,” and “being afraid of what others might think or say”) or *accessibility of help* (e.g. “inability to afford treatment”). This study thus provides preliminary information about barriers to treatment seeking in SAD. However, their use of an unscreened sample, limited range of investigated barriers and fact that it was conducted more than 15 years ago preclude broad conclusions about the current state of treatment seeking in SAD.

Chartier-Otis (2010) examined perceived barriers in Canadian adults with SAD and/or panic disorder with agoraphobia who perceived a need for treatment but had not yet sought it. Adults frequently endorsed barriers that fit into the Griffiths (2013) *knowledge* (63% “didn’t know where to get help”) and *beliefs* domains (44% “didn’t think they could be helped”) and sometimes endorsed barriers in the *accessibility of help* domain (greater than half of adults endorsed concerns about cost, health insurance, or long waits for an appointment; one-quarter or fewer endorsed difficulty reaching a provider by phone, childcare needs,

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distance from home, limited provider hours, or loss of pay from work). Additionally, adults endorsed barriers related to fear of judgment (41% were “embarrassed to talk to someone about the problems they were having” and 38% were “worried about what others would think”), which appears to fit into the Griffiths (2013) *attitudes* domain. Fear of judgment also could reflect the *illness factors* domain because fear of judgment is an SAD feature, however this finding did not differ between adults with SAD and panic disorder, indicating that it may more generally capture stigma.

Neither Olfson (2000) nor Chartier-Otis (2010) directly assessed intentions or motivation. The present study thus fills a gap by aiming to improve understanding of intentions and motivation as elements of the treatment seeking process among adults with social anxiety symptoms.

Another barrier to treatment seeking in SAD appears to be inherent in the very process that is required to initiate treatment. Coles, Turk, Jindra, and Heimberg (2004) examined the “path to initiation of treatment” for SAD in adults who responded to advertisements posted by an anxiety disorder specialty clinic. They found very high attrition: of 395 phone inquiries regarding SAD treatment, only 60 adults (15%) actually started treatment. The authors identified three “critical points” associated with high pre-treatment attrition: (1) scheduling an initial in-person screening interview (19% refused the offer to schedule this interview), (2) attending the initial interview (48% of adults who scheduled an interview failed to attend), and (3) initiating a treatment program (52% of adults who attended the initial interview did not initiate treatment). At the first critical point, the only

barrier identified was greater “spontaneously reported” financial concerns by adults who declined an initial interview; the authors reported that missing data limits this finding. For the second critical point, being Caucasian versus African-American, more educated, younger, and either a student or working-part time as opposed to working full-time predicted attendance; gender did not. For the third critical point, variables including demographics, symptom severity, life satisfaction, and comorbidity all failed to predict treatment initiation. These findings underscore the complexities involved in the treatment seeking process for SAD. Coles et al. (2004) concluded that there is a need for future research efforts to be directed toward increasing the number of adults with SAD who utilize treatment services.

Broader barriers: mental health literacy. Perceiving a need for treatment is a critical though insufficient step toward seeking treatment. Yet one study found that only one-third of adults who met criteria for any anxiety disorder (with or without mood or substance use comorbidity) reported that they needed or “might have needed” professional assistance for any mental health difficulty, and only one-fifth of adults who met criteria for only anxiety disorder(s) perceived a need for mental health assistance (Mojtabai et al., 2011). Across anxiety, mood, and substance use disorders, low perceived need for treatment remained the most commonly reported barrier, controlling for disorder severity.

One important factor contributing to perceived need for treatment is “mental health literacy” (MHL; Jorm, 2000). MHL refers to knowledge about disorders, interventions, and where to seek information, as well as attitudes that facilitate

recognition and help seeking. Across anxiety disorders, insufficient MHL has been found to be an influential barrier to treatment seeking (Johnson and Coles, 2013).

MHL for SAD is particularly low relative to other psychological disorders. Community adults were substantially less likely to correctly identify SAD in a vignette compared to other anxiety disorders and depression or to label it as cause for concern (Coles, Schubert, Heimberg, & Weiss, 2014). Even physicians often fail to recognize or identify SAD in primary care patients (Weiller, Bisserbe, Boyer, Lepine, & Lecrubier, 1996), though more recent studies are needed. It is unknown whether adults with SAD have difficulty recognizing the disorder in themselves. It is speculated that due to the early age of onset and pervasiveness of SAD symptoms, adults perceive their social anxiety as an unchangeable part of their personality (Ruscio et al., 2007). To our knowledge, however, this has not been directly tested. Nonetheless, low awareness of SAD in the community generally, especially compared to other disorders such as depression, creates a context in which perceived need for treatment, and treatment seeking, is less likely.

Broader barriers: attitudes. Across disorders, even among adults who do perceive a need for treatment, many psychological barriers to seeking treatment remain. Attitude-related barriers appear to be particularly influential. Mojtabai et al. (2011) found that only 59% of adults with any disorder who perceived a need for treatment actually sought help. Among the 41% who perceived a need but did not seek help, “attitudinal” barriers including desire to handle the problem on one’s own, perceived ineffectiveness of treatment, and perceived stigma, were much more commonly reported than practical barriers (e.g. cost, convenience, transportation).

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Ninety-seven percent endorsed at least one attitudinal barrier while 22% endorsed at least one practical barrier.

SAD-specific attitudes. SAD symptom-related factors- *illness factors*- may serve as additional barriers to treatment seeking. Central to SAD is fear and avoidance of social situations that involve possible scrutiny or judgment by others. An inherent requirement for treatment is interaction with an unknown individual with the expectation to reveal information about oneself. Therefore, treatment settings may represent situations that evoke the very anxiety symptoms that individuals with SAD seek to avoid.

Another relevant characteristic found in adults with SAD (Hedman, Ström, Stümel, & Mortberg 2013) is higher proneness to experience internal shame, that is, shame related to negative self-evaluations (Tracy, Robins, & Tangney, 2007), which may serve as a barrier to self-disclosure. Shame is also relevant to internalized stigma – holding stigmatized attitudes toward oneself based on one’s group membership. A systematic review across disorder types, including anxiety, found that mental health stigma – especially “internalized” and “treatment” stigma (associated with seeking/receiving mental health treatment) – had a small-to-moderately detrimental impact on mental health treatment seeking (Clement et al., 2015). Research has yet to specifically examine the impact of stigma or shame on treatment seeking in SAD.

Chartier-Otis et al. (2010) found that 41% of adults diagnosed with either SAD or Panic Disorder reported the barrier of feeling “too embarrassed to discuss their problems.” There were no significant differences between adults with SAD and

panic disorder, so the specificity to SAD remains speculative and in need of further investigation. Both Chartier-Otis et al. (2010) and Olfson et al. (2000) reported that adults with SAD endorse fear of others' judgment if they were to learn of their treatment seeking. It is unclear how much this fear is intensified by the core fear of judgment inherent to SAD or whether it reflects the perceived stigma that has been identified as a treatment barrier across disorders (e.g. Johnson & Coles, 2013). Nonetheless, SAD-related fear, avoidance, and perhaps shame likely compound known barriers to seeking treatment.

Summary. In conclusion, research findings vary in regards to the relative importance of different types of barriers to treatment seeking. Psychological barriers including *knowledge* (low mental health literacy regarding disorder and treatment) and *attitudinal factors*, as well as practical barriers- e.g., *accessibility of help*- are components of the Griffiths (2013) model that have been shown to be relevant in SAD. The *illness factors*, *beliefs*, *intentions*, and *behavior* components of this model remain underexplored. Additionally, within *intentions*, the role of values-based motivation in treatment seeking remains unexamined.

Addressing specific barriers is important for promoting treatment seeking. However, the extant literature is conflicting and lacking regarding which barriers are most important or modifiable or how best to intervene. Thus, we draw upon examples of interventions that have successfully increased treatment seeking, particularly within the anxiety disorders, as foundational models for ways to achieve this in social anxiety.

Framework for Interventions to Increase Treatment Seeking

There is limited literature examining interventions that aim to increase treatment seeking in SAD or in anxiety disorders more generally. Gulliver, Griffiths, Christensen, and Brewer (2012) concluded that the field lacks a widely accepted theoretical model on which to base such interventions. Generally, research that has examined mental health treatment seeking has focused on changing attitudes toward treatment seeking, intentions to seek treatment, and/or treatment seeking behavior, which are components of the Theory of Planned Behavior (Ajzen, 1991).

Interventions have incorporated MHL information, destigmatization, help-seeking “source information” (i.e. where and how to seek treatment), personalized feedback about symptoms, and uncommonly, CBT techniques (Gulliver et al., 2012).

RCTs to promote treatment initiation in anxiety. To our knowledge, only two small randomized controlled studies have attempted to facilitate treatment seeking for any anxiety disorder and only one of these focused on social anxiety. In this SAD-focused study, Buckner and Schmidt (2009) tested an intervention designed to increase CBT-seeking in 27 non-treatment seeking socially anxious adults. They compared Motivational Enhancement Therapy (MET; originally developed for alcohol use disorders by Miller, Zweben, DiClemente, & Rychtarik, 1992), which is a brief treatment based on Motivational Interviewing (MI; Miller & Rollnick, 2002) to a control condition which included brief personalized feedback and psychoeducation about SAD. Participants in both conditions attended three individual sessions including baseline (pre-intervention) and post-assessments; the motivational condition lasted six and a half hours total and the control condition

three hours total. Post-intervention, all participants were referred to their university outpatient anxiety clinic and offered CBT for a discounted fee. By one-month follow-up, MET participants were significantly more likely than controls to have attended a CBT appointment (when including only participants who completed follow-up; when follow-up questionnaire non-completers were assumed not to have sought treatment, this finding reduced to a trend). Additionally, MET participants reported a steeper increase in self-reported willingness to schedule an appointment, and willingness predicted CBT appointment attendance across all participants. MET participants also experienced a steeper increase in confidence that they could change anxiety-related behavior, and somewhat greater interest in being contacted by a therapist. These findings provide promising preliminary support for the use of MET techniques to facilitate evidence-based treatment seeking behavior in adults with SAD and are especially notable given the lack of successful behavioral outcomes in the broader literature.

Several limitations of Buckner and Schmidt (2009) indicate a need for further research and provide insight into changes to make for the present study. First, the small sample size in Buckner and Schmidt (2009) significantly limited power to detect group differences, particularly given the attrition by follow-up. Additionally, the goal of the study was to change treatment seeking behavior, yet the stages of change questionnaires used both in the intervention and assessment asked participants about changing their “social anxiety-related behaviors” instead of their treatment seeking behaviors. This mismatch, acknowledged by the authors, limited the conceptual clarity for mechanisms of change typically examined in MET/MI

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interventions. The MET condition also provided significantly greater experimenter attention and provider contact time compared to the control condition, which on its own could increase openness to treatment. Finally, as discussed by the authors, participants were recruited via advertisements for “An Interview Study of Anxiety.” This may have created sampling bias in that participants were self-selected to be willing to discuss their social anxiety, which may not characterize many adults with these symptoms.

In the second small study, Maltby and Tolin (2005) adapted MI principles in adults with obsessive-compulsive disorder (OCD) who had previously refused evidence-based therapy (Exposure and Response Prevention; ERP), with the goal of encouraging enrollment in ERP. The 4-session motivational intervention, $n = 7$, (including MI, psychoeducation, viewing a videotape of simulated ERP, a phone conversation with an ERP completer, and construction of a sample exposure hierarchy), compared to a waitlist control, $n = 5$, resulted in significantly higher rates of accepting, entering, and completing ERP. These results are promising, especially given that the participants had previously refused ERP. In their examination of barriers, Maltby and Tolin (2005) also found that participants indicated at pre-test that they were on average “ready” or “close to ready” to begin working on their OCD symptoms, and were moderately confident that ERP would help. Nonetheless, participants indicated high (75 out of 100) fear of treatment at pre-test, which at post-test had decreased significantly more in the intervention than waitlist group (though the intervention group still reported moderate post-test fear of treatment).

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The authors concluded that fear of treatment is likely an influential barrier to enrolling in evidence-based treatment for OCD and that decreasing (though not necessarily eliminating) fear of treatment may be an important method of encouraging treatment enrollment. The intervention included several potentially potent ingredients, so identification of which components facilitated change remains unknown. Additionally, participants in this study were recruited from “ERP research projects and an outpatient clinic” and had already been offered and refused ERP, so they were presumably more likely to be treatment seeking. Thus, participants likely differed in important ways from adults who have never sought or been offered treatment. The small sample size also limits conclusions. Nonetheless, given that apprehension about treatment is also a barrier to treatment seeking in SAD, this study again demonstrates the potential utility of motivation-enhancing intervention techniques that could be adapted for SAD. In the present study, we include information about “what to expect” alongside our referral information in an effort to reduce fear of treatment.

RCTs to increase treatment seeking in the broader literature. Gulliver et al. (2012) reviewed randomized controlled trials (RCTs) of interventions seeking to increase “help-seeking” in young adults with depression or general psychological distress. The review identified only six relevant studies (with interventions ranging from five minutes to six weeks); they did not include the two studies described above (Maltby & Tolin, 2005 and Buckner & Schmidt, 2009). The studies targeted either depression or general mental health treatment seeking; none used an anxiety disorder population or focused on anxiety. Nonetheless, the interventions targeted

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known barriers to treatment seeking. For example, all interventions included some MHL (i.e. psychoeducation) content. Other components included, in addition to psychoeducation: destigmatization information (three studies), treatment resources (three studies), phone check-ins (two studies), a video conveying a personal experience with psychotherapy (one study), personalized feedback about symptoms (two studies), and online CBT techniques (one study).

All of the trials that measured attitudes toward treatment seeking ($n = 5$) found improvements in “attitudes, willingness, and beliefs” post-intervention compared to control groups (varying by study’s intervention format, including control videos, phone calls, or emails/written material). The only study to assess behavioral intentions at post-test (Costin et al., 2009), used a brief email intervention to target MHL and provided information about sources of treatment for depression, but revealed no effect on intentions to seek treatment. Only three studies measured behavior. Of those, only one study, which used a web-based CBT-based intervention and personalized feedback about symptoms in depression, resulted in significant behavior change compared to control (Christensen, Leach, Barney, Mackinnon, & Griffiths, 2006). The other two interventions had included MHL and provided treatment resources; additionally, one targeted destigmatization. In summary, these results indicate that psychoeducation (MHL) improves attitudes but may be insufficient to increase treatment seeking behavior.

In conjunction with the MET studies, this preliminary data indicates that in addition to psychoeducation and personalized feedback, directly targeting behavioral motivation and skills- perhaps via cognitive-behavioral or motivation-

enhancement techniques- may be necessary to impact behavior change. Maltby and Tolin's (2005) OCD study indicated that additionally, techniques that decrease fear of treatment may be important to treatment seeking interventions.

At present, additional research is needed regarding which intervention strategies effectively influence treatment seeking behavior in SAD specifically given that only one single, relatively small study has been conducted to date.

The Present Study

As detailed above, there remains a lack of clarity regarding which components of the Griffiths et al. (2013) framework are likely to be most influential and necessary and which methods would be most effective at promoting change. In the present study, we aimed to address this research gap by comparing approaches to improving treatment seeking attitudes, intentions, perceived behavioral control, and related behavior among adults with significant levels of social anxiety symptoms.

We used an online delivery format to address some practical and SAD-specific barriers. Generally, Griffiths (2013) recommends testing treatment seeking interventions delivered via the Internet in order to increase the scope of treatment utilization and to promote appealing and accessible options. We thus aim to increase accessibility. Additionally, we seek to decrease illness-related avoidance by potentially reducing the barrier of social anxiety-related fear of direct contact with providers. Relatedly, higher social anxiety scores have been shown to predict a preference for online social interactions (Caplan et al., 2007) and an online format may enable us to encounter adults with SAD "where they are." To our knowledge, an

online format has not previously been tested in the application of increasing treatment seeking for social anxiety.

Specifically, we use Amazon's Mechanical Turk (MTurk), an online crowdsourcing website, to recruit participants. MTurk is an increasingly popular platform for efficiently recruiting large and diverse psychology research samples (e.g. Buhrmester, Kwang, & Gosling, 2011; Crump, McDonnell, & Gureckis, 2013). In particular, MTurk has been recognized as a promising way to study psychiatric (Shapiro, Chandler, & Mueller, 2013) and challenging-to-recruit (e.g. Arch & Carr, 2016) populations. MTurk data has been shown to be of high quality in terms of reliability and validity (Shapiro, Chandler, & Mueller, 2013; Rand, 2012).

In regards to intervention content, in this study we directly addressed two elements of the treatment seeking problem: (1) the mental health literacy gap, and (2) the gap in understanding how to motivate attitudes, perceived behavioral control, intentions, and behavior change in regards to treatment seeking. The first element is included because knowledge is a basic foundation of any treatment seeking intervention and addresses the notable MHL gap in SAD in particular. The second component is included because motivational factors above and beyond knowledge are also likely to contribute to variables related to treatment seeking behavior. We thus compared two intervention arms, delivered entirely online, including (1) A Control condition consisting of brief psychoeducation about CBT for social anxiety and (2) a Motivational condition consisting of the same brief psychoeducation plus a single online-session values and motivation-based intervention.

Background: psychoeducational component. We include basic psychoeducation in both conditions as the foundation for promoting evidence-based treatment seeking. Psychoeducation generally is comprised of information and education regarding mental health issues, treatments, and recommendations; it empowers consumers to make informed choices regarding mental health. Jorm (2012) emphasizes the relative lack of community attention to mental health literacy yet its critical importance in facilitating movement toward improved mental health. One potential way to reduce this MHL gap in SAD is through targeted psychoeducation aiming to increase awareness of SAD and treatment options.

Psychoeducation has comprised the core of various treatment seeking intervention efforts, such as broad direct-to-consumer marketing (Gallo et al., 2015), several studies in the review by Gulliver et al. (2012), and as one component of Buckner and Schmidt's (2009) motivational intervention for SAD. A meta-analysis of psychoeducation interventions for depression, anxiety, and psychological distress concluded that passive psychoeducational interventions can reduce distress and symptoms of depression (though effect sizes are small; Donker, Griffiths, Cuijpers, and Christensen, 2009). The authors suggest that because psychoeducational interventions are easy to implement, inexpensive, and immediate, they can be readily disseminated. Thus, psychoeducation may be an important component of a first-line, treatment seeking intervention.

Background: motivational component. In addition to basic psychoeducation, the motivational condition includes interactive content drawing on participants' own experiences. It is likely that in addition to improving

knowledge, perceived need for treatment, and awareness of available resources, it is necessary to facilitate positive attitudes toward treatment and increase motivation and readiness to seek treatment. Facilitating change in attitudes and beliefs is important but does not automatically lead to behavior change (Ajzen & Fishbein, 2005). Thus, additional methods of changing motivation to seek treatment, measured by intentions, perceived behavioral control, and behaviors, are warranted. Although behavioral intentions do not completely predict behavior change, a meta-analysis of experimental studies indicates that on average, a medium-to-large change in intention leads to a small-to-medium change in behavior (Webb and Sheeran, 2006). Both intentions and direct behavior represent useful intervention metrics.

Various theoretical models for identifying stages and processes of motivating behavior change have been studied extensively in the health behavior change literature (Prochaska, 2013) and have increasingly been applied in the mental health literature (see Norcross, Krebs, and Prochaska, 2011 for a review). However, as discussed by Gulliver et al. (2012), as of yet the field lacks an integrated theoretical model for conceptualizing change in regards to mental health treatment seeking behavior. We therefore drew our approaches from the intervention literature that has been conducted in the context of psychiatric samples and which link to numerous components of behavior change models. In particular, within psychiatric samples, two therapeutic traditions with extensive empirical support in facilitating motivation and commitment to behavior change are MI (Miller &

Rollnick, 2002) and Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999).

Given the scant existing research on interventions to increase SAD treatment seeking, innovation is needed to understand how to improve motivation in this context. Given the extent of the challenge – that is, the very low rates of SAD treatment seeking - we sought to optimize the effectiveness of our intervention by combining a variety of approaches, drawn from MI and ACT, that could be translated into an online context. Rather than purporting to deliver these full-model therapies as they would be delivered in-person, we simply drew from them a limited number of exercises that could be completed on one’s own and appeared to be potential candidates for facilitating motivation to seek treatment.

Motivational Interviewing (MI). MI, originally developed for use with alcohol use disorders (Miller & Rollnick, 2002), is a client-centered, directive therapeutic style that assists clients in exploring and resolving ambivalence regarding motivation and commitment to behavior change. Motivational Enhancement Therapy (MET; originally developed for alcohol use disorders by Miller, Zweben, DiClemente, & Rychtarik, 1992) is a briefer, manual-based adaptation of MI developed for use in clinical trials.

Although MI/MET is well recognized for its use with substance use disorder populations, its use has expanded and it has now been applied to a wider range of behavioral contexts including health behavior and mental health treatment engagement (see Lundahl and Burke, 2009 for a review of meta-analyses, and Lundahl, Kunz, Brownell, Tollefson, and Burke 2010 and Rubak, Sandbæk,

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Lauritzen, and Christensen 2005 for meta-analyses). MI/MET approaches are sometimes used on their own and often used pre-treatment or as an adjunct during treatment to enhance engagement/adherence and efficacy (Lundahl et al., 2010). MI has also been successfully used to encourage treatment initiation for substance use (e.g. Carroll, Libby, Sheehan, & Hyland, 2001) and to encourage treatment initiation for tobacco dependence in adults with schizophrenia (Steinberg, Ziedonis, Krejci, & Brandon, 2004).

MI has been applied pre-treatment or as an adjunct to treatment in the context of non-substance use mental health problems (see Westra, Aviram, & Doell, 2011 for a review). In anxiety disorders, preliminary evidence from small RCTs indicates that MI/MET can be a useful adjunct to CBT/exposure therapy. For example, MI it was found to increase homework compliance and decrease worry in generalized anxiety disorder (GAD; Westra, Arkowitz, & Dozois, 2009) and to lead to greater homework compliance and a greater number of CBT-responders in a mixed group of adults with SAD, GAD, or panic disorder (Westra & Dozois, 2006). MI also increased symptom recognition, personal relevance of treatment material, and willingness to change in combat veterans with PTSD undergoing CBT (Murphy, Thompson, Murray, Rainey, & Uddo, 2009).

Thus, an MI approach is promising to apply in the context of SAD. Further, as Buckner and Schmidt (2009) demonstrated, MET appears to be feasible and more effective than brief psychoeducation + feedback at facilitating evidence-based treatment seeking in adults with SAD.

Although the use of self-help and Internet-based interventions for the treatment of depression and anxiety disorders has flourished, the empirical literature examining online applications of MI/MET remains sparse. Webber, Tate, and Quintiliani (2008) tested an online group behavioral weight loss program that included two online group chat sessions guided by MI principles (participants were emailed MI-based questions and online discussion was facilitated by MI-style topics). They concluded that MI was adaptable to an online environment (facilitated motivation and weight loss), although they did not include a no-MI control group. To our knowledge, an individual MI/MET-based online intervention has yet to be tested, likely because MI is characterized as a therapeutic style rather than a set of techniques (Miller & Rollnick, 2009). Nonetheless, because specific MI-inspired *exercises* have been successfully utilized in brief interventions (i.e. Buckner & Schmidt, 2009 and Webber et al., 2008), we propose that such *exercises* could be adapted as part of an online, self-guided program.

Acceptance and Commitment Therapy (ACT). ACT is a third-wave behavioral psychotherapy that strives to increase “psychological flexibility,” defined as “the ability to contact the present moment more fully as a conscious human being and to change or persist in behavior when doing so serves valued ends” (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). ACT integrates six core inter-related therapeutic components: cognitive defusion (flexible distancing from the literal content of thought), acceptance (openness to experiencing private events such as feelings in order to facilitate meaningful behavioral action), contact with the present moment (mindfulness), self-as-context (transcendent sense of self), values (chosen

life directions) and committed action (behavioral patterns that are linked to personal values).

ACT has been successfully utilized in numerous trials for mental and physical health disorders including anxiety disorders (see Landy, Schneider, and Arch, 2015 for a review), depression, psychosis, stress, and chronic pain, and to reduce health risk behaviors (see Powers, Zum Vörde Sive Vörding, and Emmelkamp, 2009; Ruiz, 2012; and A-Tjack et al, 2015 for meta-analyses). An example of ACT's successful application to health behavior change, in conjunction with the use of technology to deliver ACT-based interventions, is in the realm of smoking cessation. ACT for smoking cessation was feasible and just as effective as a CBT intervention when delivered via phone (Bricker, Bush, Zbikowski, Mercer, & Heffner, 2014a) and more effective than existing gold-standard programs when delivered via a web-based program (Bricker, Wyszynski, Comstock, & Heffner, 2013) and a smartphone application (Bricker et al., 2014b). In another large-scale application to health behavior change, an ACT intervention (also including strategies to improve health behaviors) for 410 colorectal cancer survivors, delivered via 11 phone sessions, improved physical activity, diet, and body mass index compared to usual care (Hawkes et al., 2013). Additionally, a meta-analysis of laboratory studies found support for the potency of the individual ACT components (Levin, Hildebrandt, Lillis, & Hayes, 2012). The extant literature indicates that ACT provides a robust model for promoting behavior change and can be adapted to online formats.

In conclusion, we drew from both ACT and MI/MET because of the evidence base for both in promoting behavior change with an emphasis on an individual's personally

relevant and meaningful goals. Including ACT techniques also strengthens the intervention in that ACT has been tested in technology, web-based and self-help contexts, while scant research has investigated the self-help or online application of MI.

Bricker and Tollison (2011) compared the different yet complementary conceptual frameworks behind MI and ACT and concluded that it would be useful for future research to “develop and empirically test a conceptually-coherent combination of MI with ACT: combine MI’s focus on enhancing motivation and developing a committed action plan with ACT’s focus on helping clients develop willingness to experience distressing thoughts, emotions, and sensations.” The authors also stated that although MI and ACT approach the concept of personal values in different ways, they importantly share an emphasis on values as motivators. Combining MI and ACT approaches therefore appears to be a reasonable and potentially fruitful endeavor.

Summary. In conclusion, the present study aimed to (1) develop a robust brief intervention to increase treatment seeking for social anxiety, drawing from a synthesis of empirically-supported approaches, that could be applied within an online context; (2) assess the feasibility of this approach; and (3) evaluate the relative efficacy of a values-based motivation-enhancement relative to psychoeducation control in ability to facilitate treatment seeking (4) including seeking treatment that is evidence-based. This work expands on Buckner and Schmidt (2009) and utilized some components of their intervention content, using a larger sample, adding elements from ACT, recruiting and delivering the intervention

entirely online, and including more detailed and comprehensive referral information.

As stated, we did not purport to deliver ACT or MI, given that these are therapy models involving many complex therapist behaviors and attitudes that cannot in full form be translated into a self-guided online format. Rather, we included specific ACT and MI-inspired interactive exercises to guide participants to considering seeking treatment that could potentially enhance their quality of life.

Aim and hypotheses. The aim of the present study was to establish the feasibility and compare the efficacy of two distinct online, randomly assigned interventions for facilitating treatment seeking for social anxiety. The two conditions were: (1) “Control,” consisting of brief psychoeducation + treatment referrals and (2) “Motivational,” consisting of brief psychoeducation + treatment referrals + extensive motivation-enhancement techniques including personalized feedback and values. We also aimed to educate participants about what constitutes evidence-based treatment for SAD and in doing so, increase the likelihood that the SAD treatment they seek and receive is evidence-based.

The core research questions and hypotheses include:

1. To what extent do these brief online interventions provide a feasible and acceptable delivery modality for increasing *any* treatment seeking, and specifically *evidence-based* treatment seeking, among adults with elevated social anxiety symptoms?

Hypothesis 1: The online interventions would be feasible and acceptable as defined by: (a) ability to recruit the target sample size of socially anxious

participants and retain at least 70% through FU (determined by *apriori* power analysis: 116 participants were required at FU to detect a medium effect size for main outcomes, requiring at least 166 to complete the intervention), (b) the majority of participants attending to content and adequately (see *Method*) completing the online modules, including questionnaires and exercises requiring written responses, and (c) participants reporting a mean of at least 2.83 on the modified Client Satisfaction Questionnaire-8(CSQ-8)¹. An exploratory hypothesis for feasibility was that participants would report at least moderate ratings (mean of at least 3) on Additional Feedback on Benefits², the scale developed specifically for the present study, and would report positive qualitative feedback regarding study participation.

2. Do the interventions change treatment seeking attitudes, behavioral intentions, and perceived behavioral control over time, are gains maintained at FU, and does this differ by condition?

Hypothesis 2a: We anticipated that both interventions would improve treatment seeking attitudes, behavioral intentions, and perceived behavioral control from Pre to Post-intervention and that gains would be maintained at FU. ***Hypothesis 2b:*** We hypothesized that the motivational condition would

¹ See *Method* for details on the CSQ-8. The mean of 2.83 or higher is derived from a total score of 17/24 across the six items, which corresponds to selecting neutral or positively valenced choices on all items (note: only one item offered a neutral choice; five offered only negative or positive).

² See *Method* for details on the Additional Feedback on Benefits. The mean of 3 or higher corresponds to selecting choices corresponding to a neutral or positive reaction (e.g. “a moderate amount,” “somewhat”) on all items.

lead to more improvement than the psychoeducation condition on these variables.

3. Does the intervention lead to treatment seeking behavior and does behavior differ by condition?

Hypothesis 3: We hypothesized that the motivational intervention would be more effective than control based on prior research indicating that information alone does not always change behavior and that motivational techniques might be needed (Gulliver et al., 2012). However, this aim remains exploratory because the study was not powered to detect changes in behavior.

Method

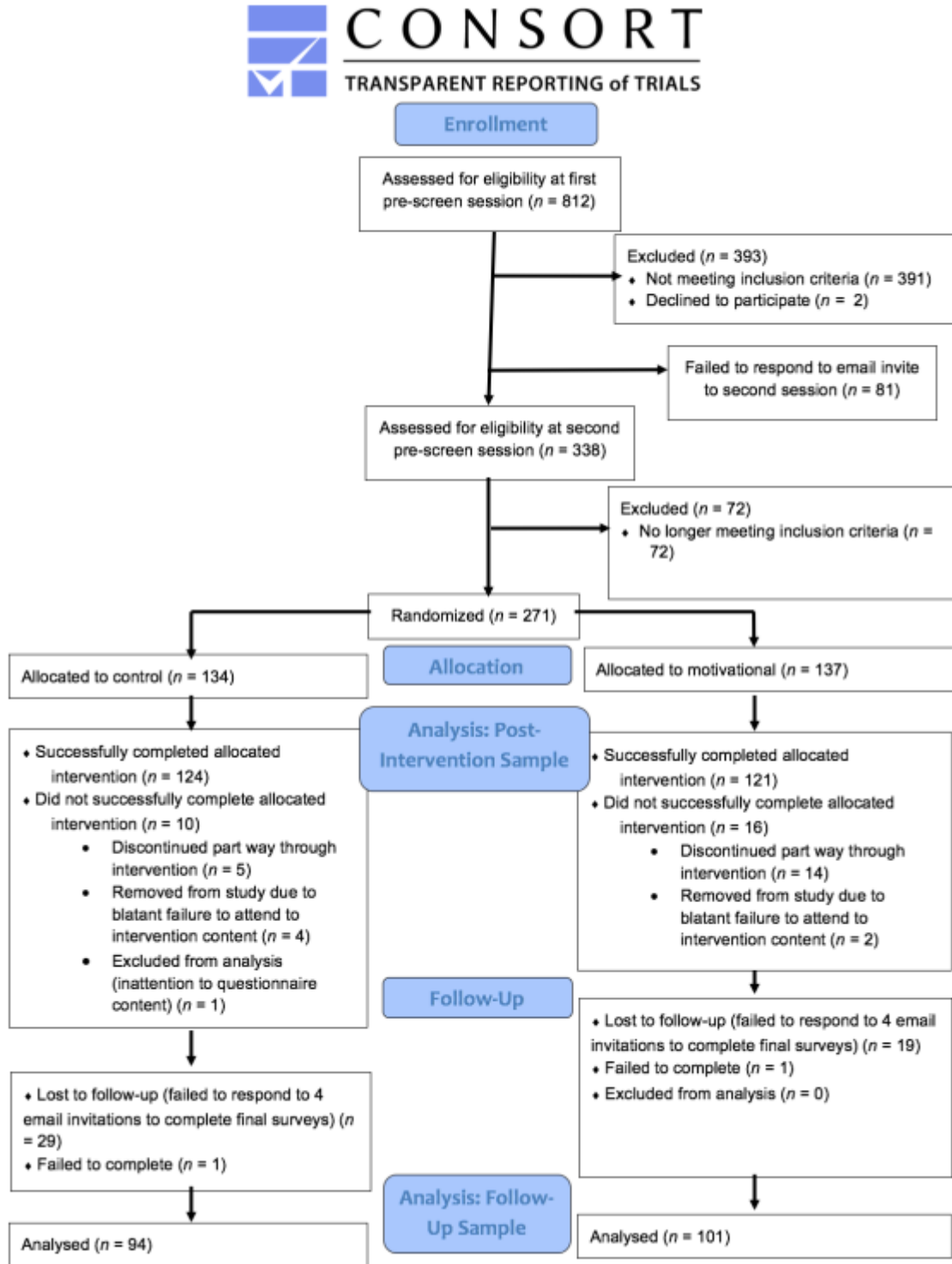
Participants

We recruited and enrolled a national U.S. sample of socially anxious adults ($N = 268$) online through MTurk between June and August 2016. Inclusion criteria were (1) scoring above 30 on the Social Phobia Inventory (SPIN; Connor et al., 2000), a stringent cutoff corresponding to a high likelihood of meeting *Diagnostic and Statistical Manual of Mental Disorders* criteria for SAD (4th ed, text rev.; DSM-IV-TR; American Psychiatric Association, 2000), see *Screening* (2) being at least 18 years of age, (3) fluency in English, (4) having access to the internet, (5) not currently being enrolled in CBT for SAD/social anxiety or utilizing a self-help book or online treatment program, (6) not indicating that they would “never consider” any form of treatment for social anxiety and (7) in MTurk, having a 95% or greater HIT approval rate and being listed as U.S. residents.

We did not exclude for comorbid psychological disorders as nearly two-thirds of adults with SAD meet criteria for another psychological disorder (Ruscio et al., 2008) and our goal was to facilitate broad treatment dissemination. Our use of a validated self-report social anxiety assessment measure without a diagnostic interview was consistent with prior research, including Buckner and Schmidt (2009) who screened participants using a self-report measure and found that the vast majority of eligible participants (25/27) also met interview-assessed diagnostic criteria for SAD. Regardless of diagnostic status, even subthreshold SAD confers significant impairment and adverse outcomes (Fehm, Beesdo, Jacobi, & Fiedler, 2008). Therefore, the intervention was expected to be relevant to any participants with high levels of social anxiety.

Please refer to the Consolidated Standards of Reporting Trials (CONSORT) diagram for a detailed flow of participants through the study (Figure 1).

Figure 1 CONSORT Diagram: Details of Participant Flow Through Study



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To summarize, the “post-intervention” sample includes all participants who successfully completed the intervention session, including the assessment that followed it ($n = 245$). The “follow-up” sample includes participants who successfully completed the full intervention session and one month follow-up assessment ($n = 195$). Lastly, the “intent-to-treat” (ITT) sample consists of all participants who were randomized to condition at the intervention session ($n = 268$). See Table 1 for sociodemographic and baseline clinical information for the post-intervention sample. Detailed baseline demographic and clinical information for the ITT sample ($n = 268$) is not included because it did not substantially vary from the post-intervention sample ($n = 245$) which was used in most analyses.

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Table 1
Post-Intervention Sample Characteristics: Demographic and Baseline Clinical Variables

Variable	Motivational Condition (n = 121)	Control Condition (n = 124)	Total sample (n = 245)	Between group comparison					
	Mean (SD) or n (%)			t or χ^2	p	η^2 or Cramer's V			
<i>Demographic</i>									
Age (years)	34.48 (10.56)	33.27 (10.17)	33.87 (10.36)	t = -0.92	.36	$\eta^2 = .00$			
Gender				$\chi^2 = 4.68$.20	Cramer's V = .14			
Male	32 (26.45%)	39 (31.45%)	71 (28.98%)						
Female	86 (71.01%)	84 (67.74%)	170 (69.39%)						
Transgender Male	0 (0.00%)	1 (0.81%)	1 (0.41%)						
Gender Queer	3 (2.48%)	0 (0.00%)	3 (1.22%)						
<i>Race/Ethnicity^a</i>									
White/Caucasian	100 (82.64%)	92 (74.19%)	192 (78.37%)	$\chi^2 = 2.58$.11	Cramer's V = .10			
Black/African-American	9 (7.44%)	8 (6.45%)	17 (6.94%)						
Hispanic/Latino(a)	2 (1.65%)	8 (6.45%)	10 (4.08%)						
Asian/Asian-American/ Pacific Islander	5 (4.13%)	10 (8.06%)	15 (6.12%)						
Native American/Alaskan Native	1 (0.83%)	2 (1.61%)	3 (1.22%)						
Biracial	4 (3.31%)	4 (3.23%)	8 (3.27%)						
Other	0 (0.00%)	0 (0.00%)	0 (0.00%)						
<i>Highest Education</i>									
Some high school	0 (0.00%)	2 (1.61%)	2 (0.82%)				$\chi^2 = 3.99$.68	Cramer's V = .13
High school diploma or GED	11 (9.09%)	14 (11.29%)	25 (10.20%)						
Some college	35 (28.93%)	39 (31.45%)	74 (30.20%)						
2-year college degree	14 (11.57%)	13 (10.48%)	27 (11.02%)						
Bachelor's degree	45 (37.19%)	42 (33.87%)	87 (35.51%)						
Graduate degree	16 (13.22%)	13 (10.48%)	29 (11.84%)						
Other	0 (0.00%)	1 (0.81%)	1 (0.41%)						
<i>Household Income^b</i>									
Less than \$10,000	3 (2.48%)	16 (12.90%)	19 (7.76%)	Mann- Whitney U = 6518.00	.07	$\eta^2 = .01$			
\$11,000 - \$20,000	16 (13.22%)	11 (8.87%)	27 (11.02%)						
\$21,000 - \$30,000	18 (14.88%)	18 (14.52%)	36 (14.69%)						
\$31,000 - \$40,000	18 (14.88%)	15 (12.10%)	33 (13.47%)						
\$41,000 - \$60,000	18 (14.88%)	32 (25.81%)	50 (20.41%)						
\$61,000 - \$80,000	17 (14.05%)	12 (9.68%)	29 (11.84%)						
\$81,000 - \$100,000	17 (14.05%)	8 (6.45%)	25 (10.20%)						
\$100,000 - \$150,000	10 (8.26%)	9 (7.26%)	19 (7.76%)						
Greater than \$150,000	4 (3.31%)	3 (2.42%)	7 (2.86%)						
<i>Clinical Characteristics</i>									
	Mean (SD)								
SPIN	47.03 (8.57)	46.93 (8.33)	46.98 (8.43)	t = -0.10	.92	$\eta^2 = .00$			
OASIS	9.69 (3.22)	10.22 (3.10)	9.96 (3.16)	t = 1.30	.20	$\eta^2 = .01$			
PHQ-9	11.07 (5.77)	11.54 (6.48)	11.31 (6.13)	t = 0.37	.55	$\eta^2 = .00$			
<i>Medication Status</i>									

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Taking medication for social anxiety at baseline ^c	16 (13.22%)	12 (9.68%)	28 (11.43%)	$\chi^2 = .76$.38	Cramer's $V = .06$
Taking medication for other mental health at baseline ^d	12 (9.92%)	15 (12.10%)	27 (11.02%)	$\chi^2 = .30$.59	Cramer's $V = .04$

Note. Post-intervention sample includes all participants who were randomized to condition and successfully completed intervention session, regardless of whether they were retained at follow-up. *Abbreviations:* SPIN = Social Phobia inventory; OASIS= Overall Anxiety Severity and Impairment Scale; PHQ-9 = Patient Health Questionnaire-9.

^aDue to small sizes in race/ethnicity cells, Chi-squared test was conducted on White/Caucasian versus all other race/ethnicity categories combined. ^bWilcoxon-Mann Whitney test used due to ordinal nature of the variable. ^cAnswered Yes to “Are you currently taking prescribed medication for your social anxiety?” ^dAnswered Yes to “Are you currently taking prescribed medication for any other emotional, mental health, or substance use difficulty?”

Participants provided informed consent prior to study initiation. All procedures were fully approved by the UCB human subjects protection committee (i.e. Institutional Review Board). The study took place exclusively online; study personnel were located in the Department of Psychology and Neuroscience at the University of Colorado Boulder.

Procedure

Design. This study was a two-arm, randomized controlled trial offering a single-session online intervention aiming to improve social anxiety treatment seeking. Follow-up data was collected one month post-intervention. The two conditions were: (a) Control (brief psychoeducation + treatment referrals) and (b) Motivational (brief psychoeducation + treatment referrals + values-based motivational enhancement). Questionnaire assessments were conducted at three time points: “pre-intervention” (immediately prior to randomization), “post-intervention” (immediately following intervention) and “follow-up” (approximately one month following completion of the intervention). The only direct contact between study personnel and participants included answering logistical questions

via email (e.g. clarifying how to access study links). Participants were thanked on Qualtrics immediately and compensated through MTurk following completion of each online session (first screener, second screener/intervention, and follow-up) within 72 hours of study completion.

Recruitment and screening. All study recruitment took place on MTurk, and all consent, screening, and study content took place on Qualtrics, a commonly used and secure online survey platform. Enrolled MTurk participants (known as “workers”) viewed the study listed alongside all other Human Intelligence Tasks (HITs), which workers can search by title, keyword, reward, eligibility, etc. Only MTurk workers meeting eligibility criteria were able to view the study. The study was entitled “Overcoming Social Anxiety” and the advertisement described it as a “longitudinal 3-part study” for “adults who are anxious in social situations, to complete an interactive survey about ways to overcome social anxiety.” Participants were informed that the total study duration ranged from approximately 52 minutes to 1 hour and 52 minutes total (based on piloting) and that they would be paid \$3.70 to \$6.20 total, respectively. Pay was consistent with standard MTurk research minimum payment rates (Horton & Chilton, 2010) and was adjusted based on pilot participants’ feedback (participants stated that pay was insufficient when rate was lower; at the rates used in the final study, no participants reported this), which is consistent with suggestions of increasing pay rates (“Fair Payment,” 2016). Interested MTurk participants used the Qualtrics link to complete a brief consent to be screened, complete screening questions, and be automatically informed of their eligibility status. Ineligible participants were immediately thanked for their time.

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Eligible participants were immediately provided with additional detail about the study and were invited to provide informed consent and complete the demographic questionnaire. To ensure data quality we used the website Turkgate which automatically identified participants by their unique MTurk Worker ID and prohibited them from completing either the screening or the study more than once.

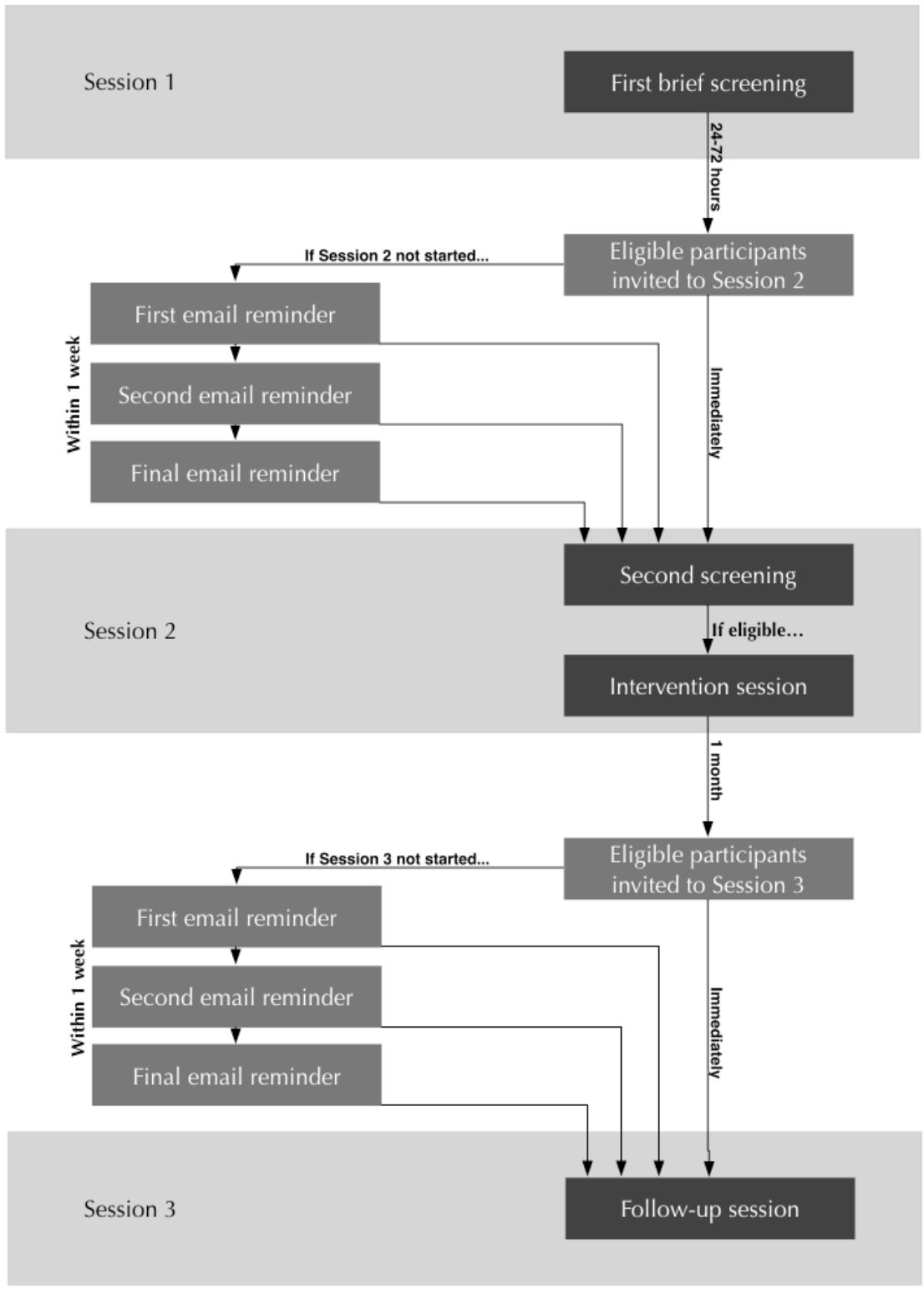
Rather than beginning the intervention session immediately following the initial screening session (including demographic questionnaire), we had participants begin the study one week later. This step was included for two reasons. First, we sought to protect data integrity given the entirely online study design. To this end, we re-administered the SPIN and excluded participants with inconsistent scores, i.e. whose scores were no longer above the 30 cutoff (unlikely to occur naturally due to the stability of social anxiety over a one-week period), as well as re-administering the other eligibility questions¹. Second, we sought to minimize differential attrition post-intervention. Longitudinal MTurk research has found that attrition is highest between first and second contact points (even if brief) and levels off at all additional contacts (What Works Clearinghouse, 2013). Adding an additional screening time point allows researchers to “pull attrition forward” to prior to randomization and intervention delivery (J. Chandler, personal

¹ Partway through data collection, participant comments indicated that some questionnaires regarding treatment seeking did not “make sense” or “apply” to them because of their baseline treatment status. For example, this arose when participants were currently already meeting with a therapist for non-social anxiety related mental health and were asked about finding a therapist. We thus determined that there was a need to apply more stringent criteria regarding treatment status so that all participants would begin the study with similar baseline needs for and lack of current involvement in treatment. We therefore added additional questions about participants’ current treatment to the second screener and excluded participants who endorsed currently engaging in any type of individual, group, online, or book-based treatment for their social anxiety. For the small amount of data collected before this change, we retroactively excluded participants, $n = 8$, based on these same items (which had been collected via the baseline questionnaires).

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communication, May 2016). Participants who were eligible at the first screening thus were emailed a Qualtrics link 24-72 hours later inviting them to participate in the second screening/intervention session. Within one week, participants who did not respond were emailed reminders up to three additional times. Participants who were no longer eligible at the second screening were thanked for their time and excluded from further study participation. This timing of participant flow through study contact points is depicted in Figure 2.

Figure 2 Timing of Participant Flow Through Study



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Following data collection and prior to any data analysis, data was checked for adequate attention to content by: (a) visual examination of all written responses and (b) systematic examination of questionnaire response data. The intervention session, for both the control and motivational condition, included required written responses (described in *Intervention Session*) and content was required to be adequately responsive to the question. Six participants were removed on the basis on blatantly inappropriate responses to these open-ended questions. For example, one participant completed all interactive exercise text boxes with single random letters, and another completed such text boxes with statements including “I’m bored” and “because I like the number 3,” and other inattentive statements such as “dunno” and “nothing.” We also completed a detailed visual inspection of multiple-choice questionnaire data for outliers and implausible response sets, specifically invariant responding within each questionnaire. In particular, the Beck Hopelessness Scale served as a validity test in that it was the only measure on which invariant responding was likely to indicate content non-responsivity due to including several pairs of items that are opposite in content, rated as true/false (i.e. a participant rating all items as “true” including both “it’s very unlikely that I will get any real satisfaction in the future” and “I look forward to the future with hope and enthusiasm”). Participants were removed due to completely content-invariant responding (all “true” or “false”) on this measure. One participant was removed on this basis. All other multiple-choice Pre and Post questionnaire data was also inspected and participants removed to due invariant response patterns on every questionnaire, however no additional participants were flagged for this

characteristic. In sum, seven participants were removed due to invalid responding. See Figure 1 for details on screening and attrition at each contact point.

Intervention session. Immediately after the second screening contact point and informed consent, eligible participants were randomly assigned to one of two intervention conditions through the Qualtrics “Survey Flow” randomization feature (assigned 0 or 1, using 1:1 ratio). Participants were informed of the payment and approximate length of session but were blind to their condition. They were introduced to the general study procedures, provided with crisis resource information for reference, and were informed that their participation would not be approved on MTurk if they displayed blatant inattention to content. Next, participants in both conditions completed the same Pre-intervention questionnaires, presented in random order. Next, all participants were informed that based on their survey responses, “it appears as though you experience clinically meaningful social anxiety symptoms. Social anxiety is a relatively common experience. The good news is that a lot is known about social anxiety, clinically and scientifically, and there are effective treatments for social anxiety.”

Next, participants in the motivational condition completed an interactive exercise in which they received and reflected on personalized feedback about their social anxiety, followed by a brief written exercise promoting reflection on whether the participant’s current coping strategies for social anxiety are helpful to them in the short-term and long-term. This component drew upon ACT strategies for promoting willingness to consider new approaches to old problems (Hayes et al.,

1999). Control participants did not receive this information or complete additional exercises.

Next, participants in both conditions received identical psychoeducation about CBT for SAD. This included reading a page of information and completing an interactive exercise (5-10 minutes) to ensure attention to intervention content. The psychoeducation material was drawn from Buckner and Schmidt's (2009) protocol and expanded on with information from Antony and Swinson (2008) and other published sources. We included this information across conditions because without this basic foundation (i.e. that the individual has social anxiety, and that it is treatable), participants would not understand the purpose of the referrals provided.

Next, Qualtrics guided participants in the motivational condition through the motivational intervention while control participants did not complete additional activities (see Motivational Condition for details).

Subsequently, all participants received identical referral information for evidence-based treatment. This included: (1) suggested resources for seeking in-person therapy (including suggestions for finding low cost options), including various searchable website links, information about how to identify CBT or related therapy, "what to expect," and links to a straightforward research paper demonstrating the efficacy of CBT, (2) recommendations for book-based treatment ("bibliotherapy") consisting of three specific self-guided workbooks with links and a link to a research paper demonstrating the effectiveness of bibliotherapy for SAD, and (3) recommendations for three specific online CBT-based SAD treatment programs with links, and a link to a research paper demonstrating the efficacy of

internet-based CBT for SAD. Participants were disabled from proceeding to the next page until they had spent a sufficient amount of time (determined per pilot testing) reasonably necessary to attend to the information, followed by reporting (via checkbox) that they had attended to the information. Participants were informed that the researchers received no benefits from any referral sources and that choosing whether to utilize treatment would in no way impact study compensation or ability to participate. Last, participants in both conditions received identical post-intervention questionnaires administered in random order. Participants were thanked immediately and compensated through MTurk within 72 hours. The median length of the complete intervention session was 71 minutes for the motivational condition and 37 minutes for the control condition. Please contact the author for detailed intervention content.

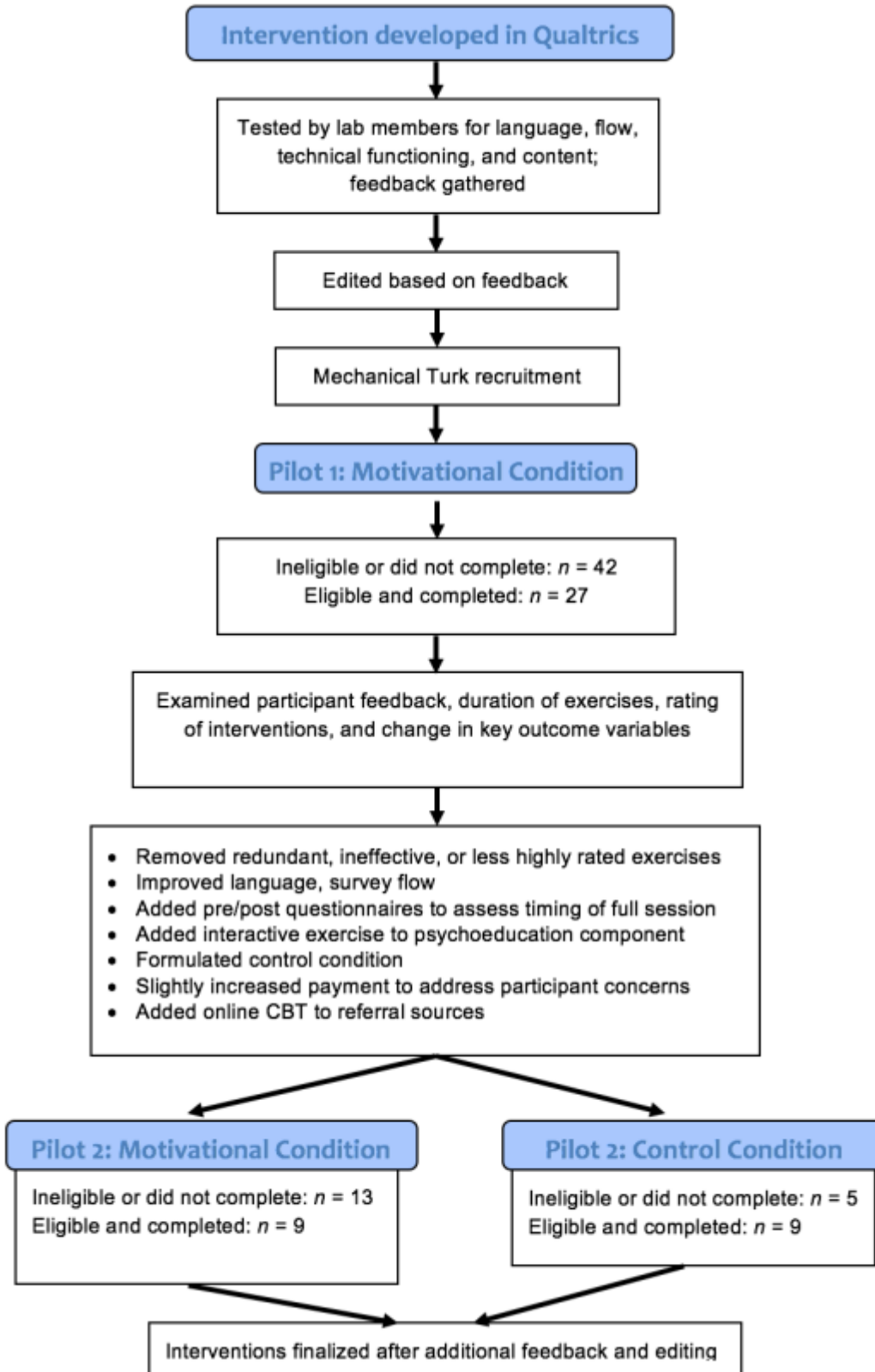
Follow-up session. As described, only approved participants were invited and enabled to participate in follow-up. Participants were sent a message through MTurk inviting them to participate and informing them that they were required to complete the session within one week. Participants were sent reminders up to three additional times within the week if they had not yet responded. The follow-up session consisted of self-report assessments and lasted approximately 20-30 minutes.

Intervention Development

Because we developed a novel online intervention, we pilot tested the Qualtrics intervention session on Mechanical Turk to determine feasibility of recruitment, to test and problem-solve survey flow, to determine which exercises to

include, and to determine initial effectiveness of the intervention. Figure 3 portrays the flow of this iterative refinement process. Pilot participants were screened using the same questionnaires and criteria as study participants. In the initial version of the intervention condition, we included several possible motivational and values-based exercises with the intention of utilizing pilot response to determine which to include in the final version. Thus, following each exercise, participants rated the exercise on a 1 to 5 scale on various dimensions, including “how engaging,” “how helpful,” and “how motivating” it was. Participants provided additional quantitative feedback regarding the session as a whole, rated on several dimensions, and also were invited to provide qualitative feedback about the session. Analysis of quantitative pilot data revealed patterns that guided decisions regarding specific exercises to include. Overall session feedback ratings and qualitative responses guided additional changes.

Figure 3 Details of Pilot-Testing Flow



Motivational Condition

In this condition, participants read information, answered questions, and completed reflective exercises (e.g. were asked to reflect on topics by typing written responses into text boxes). All exercises were drawn from ACT and MI and adapted for an online format. Here we describe the components in greater detail than in the study flow described above.

Personalized feedback. Participants in this condition received personalized feedback about their social anxiety including their true SPIN total and subscale scores, relative severity (i.e. none, mild, moderate, severe, very severe) and explanation. They were then shown the DSM-IV-TR diagnostic criteria for social anxiety (language slightly adapted for lay audience) and were asked to reflect in writing on “what thoughts came up as you received feedback on your survey score and read this page?”

Personalized motivational exercises. We adapted several personal values exercises from an ongoing ACT-based online values clarification intervention (by Levin, Dalrymple and Gaudiano; M. Levin, personal communication, May 2015). Variants of these online materials are being tested in various studies (e.g. Levin, Hildebrandt, Lillis, & Hayes, 2014) and M. Levin agreed to share these materials for use in this intervention (M. Levin, personal communication, December 2015, March and April 2016). Additional ACT-based concepts were drawn from various components of the ACT model (Hayes, Strosahl, & Wilson, 1999). We particularly emphasized *values* and *committed action*, in the context of acknowledging distressing internal experiences and barriers, to motivate behavior change.

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Consistent with ACT's approach, we provided therapeutic metaphors and interactive exercises as this has been found to be more effective than merely explaining ACT concepts directly (Levin et al., 2012). In addition to material adapted from Hayes, Strosahl, and Wilson (1999; 2012), we drew from commonly referenced ACT books for practitioners (Harris, 2009) as well as ACT specifically applied to treating anxiety disorders (Eifert & Forsyth, 2005).

MI/MET-based exercises, based on foundational concepts of MI (Miller and Rollnick, 2002), were drawn from multiple sources. We specifically used worksheets and strategies from Buckner and Schmidt's (2009) application of MET to increase CBT-seeking in SAD, with permission granted to utilize their protocol as we saw fit (J. Buckner, personal communication, September 2015). Additionally, we drew specific reflection-generating questions from Webber et al. (2008), who adapted MI for an online format (and incorporated values, one component of ACT). We also drew upon concepts from Westra's (2012) book entitled "Motivational Interviewing in the Treatment of Anxiety." Additionally, we adapted exercises from self-help books published by recognized researchers (e.g. Zuccoff & Gorscak, 2015; Edwards, 2015). Example exercises for this condition include a decisional balance worksheet regarding seeking/not seeking treatment, clarifying personal values and the ways in which social anxiety impacts valued behavior on a typical day, and learning strategies for connecting values to action.

Control Condition

As described, the control condition did not contain additional information or exercises. Control participants did not receive the personalized feedback component

of psychoeducation because personalized feedback (utilized in several studies; see Gulliver et al., 2012) is known to be an active component of psychoeducation that may have motivation-enhancing effects. For example, a randomized controlled trial comparing MI with or without personalized feedback in the context of college drinking behavior indicated that the feedback component was crucial to outcomes (Walters, Vader, Harris, Field, & Jouriles, 2009). This decision was parallel to Buckner and Schmidt (2009) in their successful intervention to increase treatment seeking for SAD, in which they included extensive feedback, diagnostic criteria, and reflection in their MET but not control condition.

The content of the control condition, including brief, non-personalized feedback, psychoeducation, and referrals, was modeled after the control condition used by Buckner and Schmidt (2009). Though we considered using a more intensive control condition, we chose this minimal control as a first-line comparison approach because of the novel nature of conducting this intervention in an online context. Comparing these two conditions enabled us to cleanly evaluate the impact of personalized motivational techniques above and beyond the effects of brief psychoeducation and referrals alone.

Measures

Demographics. At the first screening contact, we administered a self-report measure gathering basic demographic information including age, gender, ethnic/racial identity, highest education level, employment status, and annual household income. See Table 1 for demographic data for the post-intervention sample.

Current and past treatment utilization. In addition to the screening questions, we included nine multiple-choice questions designed to assess current use of psychotropic medications or any treatment for non-SAD mental health concerns (adapted from Wang et al., 2005). We included 12 multiple-choice questions assessing past medication, psychotherapy, and other treatment for SAD and non-SAD mental health concerns. These were administered at pre-intervention.

Screening. The 17-item Social Phobia Inventory (SPIN; Connor et al., 2000) assesses social anxiety symptoms including fear, avoidance, and physiological symptoms. It has good two-week test-retest reliability (Spearman $r = .78-.89$), internal consistency ($\alpha = .82-.94$), convergent and divergent validity, and construct validity (Connor et al., 2000 and Antony et al., 2006). Connor et al. (2000) found that a cutoff score of 19 distinguished between adults with and without SAD with accuracy of 79% and offered a good balance of sensitivity and specificity. However, to be more stringent, we used the more conservative cutoff of 30, which has been used in other research on SAD (e.g. Moser, Hajcak, Huppert, Foa, & Simons, 2008; Moscovitch, Rodebaugh, & Hesch, 2012). In addition to serving as an initial screening measure, this measure was administered at pre-intervention.

Clinical characteristics. The following clinical measures were administered at pre-intervention to characterize the sample and to include as covariates if needed because other anxiety disorders, depression, and alcohol use disorders commonly co-occur with social anxiety (Lydiard, 2001) and comorbidity has been shown to influence treatment seeking (Iza et al., 2013).

The Overall Anxiety Severity and Impairment Scale (OASIS; Norman, Hami Cissell, Means-Christensen, & Stein, M. B., 2006). This five-item self-report measure uses a 0-4 scale to assess severity and impairment across anxiety disorder(s) or subthreshold anxiety disorder symptoms. In a college student sample, it demonstrated strong one-month test-retest reliability ($k = .82$). In a clinical sample, it was shown to have a unidimensional structure with high internal consistency (Cronbach's $\alpha = .84$), convergent validity with other measures of anxiety, and discriminant validity from measures of alcohol use, social support, and physical health (Campbell-Sills et al., 2009).

The Patient Health Questionnaire-9 (PHQ-9; Kroenke, Spitzer, & Williams et al., 2000) This widely-used measure was included because depression is commonly comorbid with SAD. The PHQ-9 is the 10-item depression scale from the broader Patient Health Questionnaire (PHQ; Spitzer, Kroenke, and Williams et al., 1999); it is designed to assess current symptoms of depression and resultant functional impairment. The PHQ-9 has excellent internal reliability ($\alpha = .86-.89$), test-retest reliability, criterion validity, and construct validity (Kroenke et al., 2000).

The Alcohol Use Disorders Identification Test. (AUDIT; Saunders, Aasland, Babor, De la Fuente, & Grant, 1993). This 10-item measure is used widely in research. Across a multitude of studies, it has shown strong internal consistency (median $\alpha = .83$), test-retest reliability, and construct validity (Reinert & Allen, 2007).

Main Outcomes.

Feasibility. We measured feasibility of the study by assessing: (1) recruitment and retention rates, (2) rates of adequately attending to content and completing the intervention, (3) ratings on modified CSQ-8, below, and (4) participant study-specific feedback ratings and qualitative feedback.

Satisfaction was assessed with an adapted version of the 8-item Client Satisfaction Questionnaire (CSQ-8; Attkisson & Zwick, 1982), which asks participants to rate, on four-point Likert scales from negative to positive (differing by item, e.g. “quite dissatisfied” to “very satisfied,” “no, definitely not” to “yes, definitely” and “poor” to “excellent,” items including “In an overall, general sense, how satisfied are you with the service you have received?” Two of the eight items (“Did you get the kind of service you wanted?” and “How satisfied are you with the amount of help you received?”) were excluded because by participating in the study, participants were not seeking or expecting a particular intervention. The wording of other items was adapted slightly to the current context, for example the word “service” was changed to “program” and the word “social anxiety” replaced “problems.” Items were scored from 1-4. The CSQ-8 was designed to be adapted to a variety of health and human services contexts and has been validated across many populations and found to have strong internal consistency and concurrent and predictive validity (Attkisson & Zwick, 1982; De Wilde and Hendriks, 2005). The CSQ’s current study Cronbach’s $\alpha = .89$ at post-intervention.

We supplemented the CSQ with written feedback as well as six more study-specific feedback items (“Additional Feedback on Benefits”), rated on Likert scales

from “not at all” to “extremely,” developed for the present study, based on hypothesized benefits to participants and on participant feedback gathered during the pilot phase (e.g. “To what extent did this program increase your knowledge about social anxiety and treatment?”). Items were scored from 1-5. On Additional Feedback on Benefits, the current study Cronbach’s $\alpha = .87$ at post-intervention.

Motivation for treatment. There is not a single well-established measure of motivation relevant to seeking psychotherapy. Although the University of Rhode Island Change Assessment (URICA; McConnaughey, Prochaska, & Velicer, 1983), which measures readiness for behavior change (“stages of change”), has been used in similar research, it was not included in the present study. It lacked sufficient specificity; additionally, the validity of sequential movement through these stages of change and practical utility of the measure has been critiqued (e.g. Littell and Girvin, 2002). Furthermore, both Buckner and Schmidt (2009) and Maltby and Tolin (2007) detected no group differences on URICA change scores despite significant group differences in behavior.

Instead, we constructed a measure for the present study based on specific components (attitudes, perceived behavioral control, and behavioral intentions) from the Theory of Planned Behavior (Ajzen, 1991), which is frequently applied in the health behavior change literature and has been shown to partially predict a range of health intentions and behavior (see McEachan et al., 2011 for a meta-analysis). This measure has been similarly constructed/adapted extensively across the literature (as discussed in Francis et al., 2004) and our measure development was guided by recommendations regarding Theory of Planned Behavior

questionnaire construction (Fishbein, M., & Ajzen, I., 2010). However, the norms component was excluded because it was not as conceptually applicable to social anxiety and was also not targeted nor expected to change as a result of the intervention. The scales and subscales of this outcome measure are described below.

Attitudes. Participants selected responses to “seeking treatment for social anxiety in the next month would be ___” followed by seven items each rated on a Likert scale that was anchored by opposing poles (e.g. unhealthy, 1, to healthy, 7; unpleasant, 1, to pleasant, 7). Attitudes were assessed at Pre-intervention, Post-intervention, and follow-up. Wording of the instructions was adapted slightly at follow-up to account for participant behavior such that participants who had not completed any behavior received wording as “would be” and those who completed a behavior received wording as “is.” All participants were combined for purposes of analyses and a total score was computed. The current study Cronbach’s $\alpha = .88$ at pre-intervention.

Behavioral intentions. Participants rated their degree of intention to engage in treatment seeking for social anxiety within the next month on Likert scales from 1 (strongly disagree) to 7 (strongly agree). Participants’ intentions to seek each recommended treatment modality (in-person therapy, bibliotherapy, online) were assessed separately. Further, we followed the recommendation that for a complex behavior such as treatment seeking, it is advisable to include items assessing each preparatory “step” of the treatment seeking process rather than simply “seeking treatment” (A. Bryan, personal communication, April 2016). Thus, within each

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treatment modality, separate items inquired about sequential “steps” toward seeking treatment, resulting in 11 total intentions items. We drew these specific steps from Turk, Jindra, and Heimberg (2004)’s identification of “critical points” in the “path to initiation of treatment” for SAD. In-person therapy items were worded “within the next month, I intend to _____ with a counselor or therapist who could help me with social anxiety” filled in with “look up,” “schedule an initial appointment,” “attend an initial appointment,” and “begin a course of treatment.” Bibliotherapy items were worded “within the next month, I intend to _____ a self-help book for social anxiety” filled in with “look for (online or in a store),” “purchase/obtain,” or “begin reading.” Online items were worded “within the next month, I intend to _____ an online treatment website for social anxiety” filled in with “look up,” “purchase/sign up for” and “begin using.” Lastly, intentions to seek new medication were assessed with a single item rated on the same Likert scale: “I intend to seek medication-based treatment for social anxiety in the next month.” Medication was included because it is another evidence-based treatment modality for SAD. However, because it was not specifically recommended in the intervention, which focused on psychotherapy, medication was not included in the total score. At pre-intervention Cronbach’s $\alpha = .94$ for the total score (in-person therapy, bibliotherapy, and online), and $\alpha = .97$ for in-person therapy, $\alpha = .97$ for bibliotherapy, and $\alpha = .95$ for online items.

This scale was administered at pre-intervention, post-intervention, and follow-up. However, at follow-up, not all participants were administered all items. Certain items appearing earlier in the sequence of treatment seeking steps would

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have no longer made sense to participants who already taken steps toward a behavior, e.g. if they had attended an appointment with a therapist, asking about intentions to look up a therapist would no longer be applicable. Therefore, Qualtrics survey flow logic was programmed to funnel participants into different item sets based on their reported behavior during the previous month. Participants who indicated that they engaged in no behavior beyond the first listed step of a given modality (e.g. “looking up a therapist”) answered the original set of items. Participants who indicated having taken further steps within a given treatment modality were asked about only the subsequent steps within that modality and if they had taken the last step, the wording was changed to intending to “continue” treatment. Participants who endorsed the last step of engaging in a given treatment were asked “in your view, does this form of treatment fully address your social anxiety, or will you need additional forms of treatment?” with response options of “no, my current form of treatment does not fully address my social anxiety,” “yes, my current form of treatment fully addresses my social anxiety” or “I am not sure yet.” Participants who answered “no” or “I am not sure” were also administered items for the other treatment modalities. At all time points, a mean rather than total score was calculated in order to account for the varying number of items. Thus, we were able to retain the entire FU sample in intentions analyses. Scores at pre-intervention represented mean intentions to begin any of the listed forms of treatment, with all participants completing all items. At Post and FU, scores represented a given participant’s mean intentions regarding completing any remaining steps toward seeking treatment or continuing to pursue treatment.

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Inspection of Cronbach's alphas in the item matrix confirmed the clustering of items into subscales based on treatment modality.

Perceived behavioral control. Participants rated their degree of perceived ability to engage in treatment seeking for social anxiety within the next month on Likert scales from 1 (strongly disagree) to 7 (strongly agree). The scales and individualized item logic at follow-up were identical to the behavioral intentions items, including in structure (each step within each treatment modality assessed separately). The only difference was that the words "I intend to" were replaced with "I feel confident that I could." Additionally, two "general" items were included to assess perceived behavioral control in the face of barriers, which is theoretically relevant to ACT principles: (1) "I feel confident that I could seek treatment for social anxiety even if I was very busy," and (2) "I feel confident that I could seek treatment for social anxiety even if I was scared or nervous." Thus, there were 13 total perceived behavioral control items. Scores at Pre-intervention represented mean perceived behavioral control regarding beginning any of the listed forms of treatment, with all participants completing all items. At Post and FU, scores represented a given participant's mean perceived behavioral control regarding all items for which intentions were assessed plus the two general items. As with the intentions items, we were able to retain the entire FU sample in perceived behavioral control analyses. At pre-intervention Cronbach's $\alpha = .93$ for the total score (in-person therapy, bibliotherapy, and online in addition to medication and two general items), and $\alpha = .95$ for in-person therapy, $\alpha = .94$ for bibliotherapy, $\alpha = .90$ for online, and $\alpha = .86$ for general items. Inspection of Cronbach's alphas in the

item matrix confirmed the clustering of items into subscales based on treatment modality.

Behavior. The literature lacks an adequate and specific treatment seeking behavior questionnaire. Therefore, like previous authors, we used self-report items developed to assess treatment seeking since the intervention, adapted from Buckner and Schmidt (2009). Behavior was assessed at follow-up to allow time for such steps to be taken. First, we listed all sequential preparatory “steps” for the intervention-recommended modalities (in-person therapy, bibliotherapy, online) as they were worded in the behavioral intentions items outlined above. The behavior item asked participants “Did you take any of the following steps toward seeking non-medication based treatment for social anxiety in the last month (since Session 2)?”. Choice options included: “no, I did not yet take any of these steps, but I intend to” and “no, I did not take any of these steps, and I do not intend to.” Participants were asked to select “all that apply.” In a separate item, participants were asked “Were you prescribed medication for your social anxiety within the last month, since the last session (Session 2) of this study?” with options of “yes,” “no,” and “no, but I am still taking a social anxiety medication that I began before the last month.” Lastly, participants were asked whether they sought “new treatment from any of the following other types of non-medication based sources for your social anxiety within the last month (since Session 2) of this study.” Participants were asked to select all choices that applied from a list that included the following choices: none/no additional, life coach, meditation, herbal supplements, toastmasters, religious/spiritual advisor, exercise, or other. Behavioral outcome totals and

subscales were calculated by summing the number of steps taken within a given category. All FU participants were retained in behavior analyses.

Exploratory outcomes.

Treatment Credibility/Expectancy Questionnaire (CEQ; Devilly & Borkovec, 2000). This validated six-item measure, used frequently across the treatment literature, including in anxiety treatment specifically (Arch et al., 2012) assesses the extent to which individuals indicate that a treatment sounds credible and likely to be effective. Respondents rate items on Likert scales from 1-9 or 0-100%. A sample item is “How much do you believe this treatment approach will help you?” This measure has good internal consistency (standardized alpha including both subscales: $r = .85$) and test-retest reliability ($r = .83$; Devilly & Borkovec, 2000). This measure was administered at pre-intervention, post-intervention, and follow-up in order to ensure that any group differences in improved motivation over time were not due to group differences in treatment credibility following the intervention. Because this measure includes items on two different scales, each item was standardized (z-scored) in order to combine items (as did Devilly & Borkovec, 2000) into subscale (credibility and expectancy) and total scores. At pre-intervention, the standardized current study Cronbach’s $\alpha = .91$ for the total score, $\alpha = .84$ for the credibility subscale, and $\alpha = .93$ for the expectancy subscale.

Barriers to treatment. This item, developed for the present study, asked participants who reported attempting to seek treatment by follow-up and endorsed

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encountering barriers to “describe any barriers encountered.” All written responses provided, which may guide future research, are included descriptively in Figure 4.

Figure 4 Exploratory Qualitative Data in Follow-up Sample: Barriers

Response from each participant who described barriers
<i>I could not consider any help involving talking to anyone, but am trying to look at the workbooks. The thought of talking to anyone is overpowering and would be impossible now. Maybe if I could read one of the books, it could help. The books seem like a non-threatening alternative.</i>
<i>It was difficult to sort through on-line material, I still haven't settled on one website/service to use.</i>
<i>Myself, my fears, my depression, just my overall feelings of worthlessness. Unfortunately.</i>
<i>I need a different psychiatrist, however I am way too anxious of obtaining and meeting a new one that I have yet to accomplish that. The one I have currently does not listen to me and does not want to try new meds since I have went through so many types already.</i>
<i>Tons of worry. Freaking out about what people would think of me if they knew. Thinking that I was less of a man because I couldn't handle my own problems. Thinking that my problems, in the grand scope of things are super insignificant and therefore of no real concern to anyone else.</i>
<i>I do not have much money so purchasing a book was a big expense for me, so it took me a bit to get it. I think that if I could find a therapist that was close by I might attempt to seek more help but I usually have to go to another town for that so it takes more money in gas which I do not have.</i>
<i>It wasn't so much barriers as it was panic attacks as the day got closer. I had to get up at least 3 hours before I normally would have to have time to have my panic attack and get back into some semblance of ok.</i>
<i>Reading and writing in the workbook for the first week. I wasn't able to look at me.</i>
<i>The fact that therapy can be costly. I have been looking for community based mental health clinics though.</i>
<i>Myself. I kept making excuses. No matter how small I made that excuse seem extremely valid.</i>
<i>My main barriers are money and time, but I have been able to start seeking treatment sources despite possibly not having the resources at the moment to follow through with treatment.</i>
<i>Sometimes my anxiety is so bad that I forget to do what I've learned when the anxiety starts.</i>
<i>Just intensified my anxiety and worry have to overcome walls of fear.</i>
<i>Just going through with signing up for treatment! I was nervous about what treatment might entail, and I'm still a little nervous.</i>
<i>Fear and Misplaced Shame</i>
<i>When something triggers an attack I sometimes find it difficult to find a calm and comfortable place to listen to a guided meditation.</i>
<i>Procrastinating on the research needed to obtain what I was looking for.</i>
<i>No barriers as of today.</i>
<i>Money was the biggest barrier. I sought out free options to help me but didn't find very much.</i>
<i>The only barrier I had was within myself. My own self doubting as to whether or not it would be worth it in the long run.</i>
<i>Finding the time to do what was suggested was challenging, but I've made it so far.</i>
<i>Anxiety caused me to cancel an appointment I had made.</i>
<i>Time</i>
<i>My husband and I share a car. I'm a stay at home mom. So it doesn't motivate me to get an appointment because it would be hard to plan it around my husbands work and counselors availability.</i>
<i>The current barrier I have is financial. I would like to attend counseling sessions and work more towards spending time with people, but I currently don't have the funds to do anything so I've had to put that time and effort into getting more hours at a art-time job and working instead.</i>
<i>I freaked out when I went to seek treatment, nervous, nauseous.</i>
<i>Financial issues.</i>
<i>Cost of buying the book, knowing I might not get around to reading it. and the cost of seeing a counselor and the cost of starting an online course are all too expensive</i>
<i>I felt like not doing them because I did not other people or new things in my life, but I decided to think against that.</i>

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Note. Participants who reported, at follow-up, that they had attempted to seek recommended treatment and endorsed encountering barriers were asked to “describe any barriers encountered.” All exact written responses provided are included above.

Characterization of treatment seeking behavior. Participants who took any steps toward seeking in-person therapy, bibliotherapy or online treatment reported when they took the first step toward seeking this treatment. Options were listed as: the same day as Session 2, within two days of Session 2, within one week of Session 2, within two weeks of Session 2, within three weeks of Session 2, or within four weeks of session 2. A numerical scale corresponding to the above choices (1-6) was used to compute a mean time to first step score for each participant across treatment types.

Additionally, participants who took any steps toward seeking in-person therapy, bibliotherapy, or online treatment also indicated whether the treatment they sought was “CBT or related” with response options of “yes,” “no,” or “unsure.”

Statistical Approach

Power analysis. We powered our study to detect changes over three time points in the continuous outcome variables of treatment seeking attitudes, intentions, and perceived behavioral control. Although the study included measures of behavior at FU, it was not fully powered to detect group differences in this outcome due to the pilot nature of the investigation.

An *a priori* power calculation indicated that in order to detect a medium effect size ($d = .3$) with a two-tailed significance level of .05, at 95% power, a total of 116 participants (58 per group) were needed at FU. We planned to enroll more than the minimum necessary number to account for inevitable dropout and incomplete or

unusable data, especially given the online and three-part nature of the study. In regards to unusable data, it is standard across researchers utilizing Mechanical Turk to include more extensive data quality control measures due to greater variability in data quality. We also anticipated a dropout rate of at least 30% at follow-up based on prior research on Mechanical Turk studies with more than one time point (Chandler and Shapiro, 2016), which indicated that if all data were usable, we needed a minimum of 166 total participants to complete the intervention session.

Statistical analysis. Analyses were performed using SPSS. We defined statistical significance as $p < .05$. Qualtrics was programmed to require responses to all items and therefore we did not have missing item-level data. We used univariate ANOVAs for continuous variables, chi-squared tests for categorical variables and Wilcoxon-Mann Whitney tests for ordinal variables to test for group differences in demographic and clinical measures assessed at Pre-intervention. We categorized participants as retained versus dropping out and conducted chi-squared tests of independence to examine group differences in attrition at each step in the study flow following randomization. Linear regressions including the measure of interest as dependent variable, condition as independent variable, and baseline household income as a covariate, were used to test group differences in the Client Satisfaction Questionnaire and Additional Feedback on Benefits items at post-intervention and follow-up.

To analyze motivation outcomes (attitudes, intentions, and perceived behavioral control) we conducted two-way repeated-measures ANOVAs including time (two or three time-points, depending on analysis), condition (motivational

versus control), and a time x condition interaction as independent variables, baseline household income as a covariate, and mean ratings for each scale as the dependent variable.

Self-reported behavior data, collected at follow-up, represents behavioral action taken after completing the intervention. All behavior analyses were assessed at a single time-point on follow-up participants. To compare groups, we used linear regressions, entering the behavior (scored as continuous, i.e. count of behaviors taken) as the dependent variable, condition as the independent variable, and baseline household income as a covariate.

Results

The intent-to-treat sample (ITT) includes all participants who were screened, randomized to condition, and began the intervention session. The post-intervention sample (PS) includes all participants who were screened, randomized, and completed the intervention session with responses was determined to be valid (see *Method*). The follow-up sample (FS) includes all participants who completed the intervention session, completed the follow-up session, and whose data was deemed valid. Main analyses were conducted on the PS and FS. Two-point analyses included pre-intervention (Pre) and post-intervention (Post) while three-point analyses included Pre, Post, and Follow-up (FU). A few participants are missing from particular analyses (*ns* specified in tables) due to occasional missing data. All results are presented in either the text or a table.

Sample Characteristics

Group differences in baseline clinical and demographic variables.

Baseline demographic and clinical data for the post-intervention sample is presented in Table 1.

Intent-to-treat sample. There were no significant group differences in age, gender, race/ethnicity, highest education level attained, depression (PHQ-9), overall anxiety (OASIS), or social anxiety symptoms (SPIN), $ps > .10$, $\eta p^2s < .02$. The motivational condition reported significantly higher household income than the control condition, Mann-Whitney $U = 7237.50$, $p = .04$, $\eta^2 = .02$ (Wilcoxon-Mann Whitney test used due to ordinal nature of the variable).

Because household income differed significantly between groups in the ITT sample (and trended toward differing between groups in the PS sample) and is a variable that can predict treatment seeking in anxiety disorders (Wang et al., 2005), we included it as a covariate in all subsequent analyses of group differences.

Attrition. A CONSORT diagram presented in Figure 1 depicts details of study flow and attrition. More participants initiated but failed to complete the motivational session (which was longer) than the control session, $p = .04$, Cramer's $V = .13$. However, there was no significant group difference in attrition from Post to FU, $p = .17$ (Cramer's $V = .09$).

Main Outcomes

Feasibility.

Data quality and attrition. The data indicated that it was feasible to use MTurk to recruit our target number of clinical participants who met eligibility

criteria and engaged in the intervention session. All participants were recruited and completed the intervention session within a 16-day period. After one month, all follow-up data was collected over the course of 19 days. Thus, recruitment and assessment were completed within a brief time period, particularly relative to in-person studies. Data quality was high; following extensive visual inspection of written and questionnaire responses, only seven participants were removed due to inadequate or inappropriate responding. Overall, we retained 74% of participants from randomization through one month follow-up, which is generally congruent with the approximately 70% retention rate found in other online MTurk-recruited psychology research (reviewed by Chandler and Shapiro, 2016). Fifty-five percent of the study's total attrition (through follow-up) occurred pre-randomization. This indicates that some of the study's attrition was successfully "pulled forward" by the addition of an extra eligibility assessment time point (as described in *Method*). Had we not included this extra time point, these participants would have likely added substantially to post-randomization attrition, thus limiting our ability to evaluate the study hypotheses.

Participant Feedback.

Client Satisfaction Questionnaire. Across conditions, participants reported that they were moderately satisfied with the intervention. Main effects and group differences for both the post-intervention and follow-up samples are presented in Table 2.

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Table 2
Participant Satisfaction

Measure	Post-intervention Sample <i>Motivational n = 121</i> <i>Control n = 124</i>				Follow-up Sample <i>Motivational n = 101</i> <i>Control n = 94</i>							
	Group Difference: Post				Group Difference: Post				Group Difference: Follow-up			
	<i>M</i> (<i>SD</i>)	<i>t</i>	<i>p</i>	ηp^2	<i>M</i> (<i>SD</i>)	<i>t</i>	<i>p</i>	ηp^2	<i>M</i> (<i>SD</i>)	<i>t</i>	<i>p</i>	ηp^2
Client Satisfaction Questionnaire												
<i>Motivational</i>	3.11 (0.41)				3.11 (0.41)				2.98 (0.55)			
<i>Control</i>	3.03 (0.49)	1.25	.21	.01	3.00 (0.50)	1.40	.16	.01	2.73 (0.63)	3.08	.002	.05
Additional Feedback on Benefits												
<i>Motivational</i>	3.46 (0.70)				3.50 (0.68)				3.27 (0.76)			
<i>Control</i>	3.34 (0.71)	1.24	.22	.01	3.29 (0.73)	1.85	.07	.02	2.99 (0.84)	2.44	.02	.03

Note. Post-intervention sample includes all participants who were randomized to condition and successfully completed intervention session, regardless of whether they were retained at follow-up. Follow-up sample includes all participants who were randomized to condition and successfully completed intervention session, regardless of whether they were retained at follow-up. Baseline household income was included as covariate in all analyses.

Additional Feedback on Benefits. Across conditions, participants reported that they benefited moderately from the intervention. Main effects and group differences for both the post-intervention and follow-up samples are presented in Table 2.

Qualitative Feedback. At post-intervention, when asked “what did you like about this program?” (response required) only 4/245 participants failed to share a positive reaction (examples include “It enlightened me on the issues that I am facing and let me know I am not alone and that there is help. I am not crazy I just have a condition” and “I really liked how comprehensive it is. I really liked the wealth of information provided on the professional counselor, self-help book, and online help

pages. Great information!"). On the other hand, when asked "what did you dislike about this program?" (response required), 107/245 participants stated variants of "nothing" (e.g. "nothing I disliked," "N/A," "I liked it as is"). Criticisms shared included, for example, "thinking about my anxiety just made me more anxious" and "I didn't like that it assumed that I need therapy or medication."

Treatment Credibility/Expectancy. In the post-intervention sample (motivational $n = 120$, control $n = 121$), the Treatment Credibility/Expectancy total score increased significantly from Pre to Post-intervention, $p = .002$, $\eta p^2 = .04$, with no significant time x condition interaction, $p = .61$, $\eta p^2 = .00$. Similarly, expectancy subscale scores increased significantly from Pre to Post-intervention (PS), $p = .001$, $\eta p^2 = .05$, with no significant time x condition interaction, $p = .78$, $\eta p^2 = .00$. Credibility subscale scores trended toward increasing from Pre to Post-intervention (PS) but did not reach significance, $p = .06$, $\eta p^2 = .02$, with no significant time x condition interaction, $p = .56$, $\eta p^2 = .00$.

In the FU sample (motivational $n = 100$, control $n = 94$), the Treatment Credibility/Expectancy total score nearly significantly increased from Pre thru FU, $p = .05$, $\eta p^2 = .02$, with no significant time x condition interaction, $p = .54$, $\eta p^2 = .00$. Similarly, expectancy subscale scores increased significantly from Pre thru FU, $p = .04$, $\eta p^2 = .02$, with no significant time x condition interaction, $p = .56$, $\eta p^2 = .00$. Credibility subscale scores did not significantly increase from Pre thru FU, $p = .22$, $\eta p^2 = .01$, with no significant time x condition interaction, $p = .45$, $\eta p^2 = .00$.

Motivation to seek treatment for social anxiety. In the two time-point analyses, conducted in the PS, time 1 = Pre and time 2 = Post. In the three time-point

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analyses, conducted in the FS, time 1 = Pre, time 2 = Post, and time 3 = FU. Because of the number and diversity of findings resulting from items assessing multiple steps for each potential treatment modality, detailed analyses (including totals and subscales) are all presented in Tables 3a-7.

Attitudes toward seeking treatment for social anxiety. Main effects and group differences for the post-intervention and follow-up samples are presented in Tables 3a and 3b, respectively. Inspection of the correlation matrix including all Attitudes items (see Appendix A) revealed clustering into two subscales: perceptions of what we named “likeability” (e.g. “seeking treatment would be enjoyable”) and “usefulness” (e.g. “seeking treatment would be healthy”).

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Table 3a
Attitudes

Post-intervention Sample								
Motivational <i>n</i> = 119, Control <i>n</i> = 122								
Measure	Pre	Post	Main effect (Time)			Interaction effect (Time x Condition)		
	Mean (<i>SD</i>)		<i>F</i>	<i>p</i>	η^2	<i>F</i>	<i>p</i>	η^2
Likeability subscale								
Motivational	3.40 (1.48)	4.32 (1.54)	13.77	.000	.06	08.09	.01	.03
Control	3.49 (1.35)	4.00 (1.49)						
Usefulness subscale								
Motivational	5.27 (1.22)	5.75 (1.12)	07.31	.01	.03	11.26	.001	.05
Control	5.50 (1.21)	5.62 (1.28)						
Total Attitudes scale								
Motivational	4.47 (1.17)	5.14 (1.17)	13.44	.000	.05	12.61	.000	.05
Control	4.64 (1.11)	4.93 (1.23)						

Note. Post-intervention sample includes all participants who were randomized to condition and successfully completed intervention session, regardless of whether they were retained at follow-up. Attitudes items were rated on Likert scales (1-7) with opposing anchors, where higher numbers reflect more positive attitudes. Baseline household income was included as covariate in all analyses.

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Table 3b
Attitudes

Follow-up Sample									
Motivational <i>n</i> = 101, Control <i>n</i> = 94									
Measure	Pre	Post	Follow-up	Main effect (Time)			Interaction effect (Time x Condition)		
	Mean (<i>SD</i>)			<i>F</i>	<i>p</i>	η^2	<i>F</i>	<i>p</i>	η^2
Likeability subscale									
Motivational	3.45 (1.49)	4.33 (1.51)	4.18 (1.49)	8.27	.000	.04	2.43	.09	.01
Control	3.40 (1.33)	3.96 (1.48)	3.80 (1.40)						
Usefulness subscale									
Motivational	5.35 (1.20)	5.79 (1.11)	5.59 (1.20)	1.22	.30	.01	3.72	.03	.02
Control	5.45 (1.24)	5.58 (1.33)	5.29 (1.35)						
Total Attitudes scale									
Motivational	4.54 (1.15)	5.17 (1.13)	4.99 (1.18)	4.54	.01	.02	4.04	.02	.02
Control	4.57 (1.12)	4.89 (1.25)	4.65 (1.27)						

Note. Follow-up sample includes all participants who successfully completed study through follow-up. Attitudes items were rated on Likert scales (1-7) with opposing anchors, where higher numbers reflect more positive attitudes. Baseline household income was included as covariate in all analyses.

Intentions to seek treatment for social anxiety. Inspection of the correlation matrix including all individual Intentions items (see Appendix B) supported a conceptually-based clustering of items into four subscales based on treatment modality (in-person therapy, bibliotherapy, online, or medication). These separate treatment modality subscale results, including main effects and group differences, are presented in Tables 4a and 4b for the post-intervention and follow-up samples, respectively.

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Table 4a
Intentions

		Post-intervention Sample							
		Motivational <i>n</i> = 119, Control <i>n</i> = 123				Interaction effect (Time x Condition)			
		Pre	Post	Main effect (Time)			Interaction effect (Time x Condition)		
		Mean (<i>SD</i>)		<i>F</i>	<i>p</i>	ηp^2	<i>F</i>	<i>p</i>	ηp^2
Intentions									
To seek in-person therapy steps									
	Motivational	2.31 (1.53)	3.02 (1.76)	9.15	.003	.04	3.68	.06	.02
	Control	2.21 (1.54)	2.66 (1.74)						
To seek bibliotherapy steps									
	Motivational	3.49 (1.81)	4.63 (1.87)	6.38	.01	.03	2.72	.10	.01
	Control	3.40 (1.83)	4.17 (1.86)						
To seek online steps									
	Motivational	3.00 (1.69)	3.90 (1.84)	6.30	.01	.03	0.57	.45	.00
	Control	3.11 (1.69)	3.83 (1.93)						
To seek medication									
	Motivational	2.14 (1.68)	2.56 (1.95)	5.43	.02	.02	.10	.75	.00
	Control	2.02 (1.55)	2.50 (1.85)						
Total without medication									
	Motivational	2.87 (1.42)	3.77 (1.55)	11.47	.001	.05	3.25	.07	.01
	Control	2.84 (1.40)	3.47 (1.57)						

Note. Post-intervention sample includes all participants who were randomized to condition and successfully completed intervention session, regardless of whether they were retained at follow-up. Intentions items were rated on Likert scales from 1 (strongly disagree) to 7 (strongly agree). Baseline household income was included as covariate in all analyses.

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Table 4b
Intentions

	Follow-up Sample									
	Pre	Post Mean (SD)	Follow-up	Main effect (Time)			Interaction effect (Time x Condition)			
				<i>F</i>	<i>p</i>	ηp^2	<i>F</i>	<i>p</i>	ηp^2	
<i>Intentions</i>										
To seek next in-person therapy steps										
Motivational <i>n</i> = 92	2.37 (1.56)	3.14 (1.73)	2.87 (1.76)	2.21	.11	.01	2.18	.12	.01	
Control <i>n</i> = 100	2.18 (1.56)	2.63 (1.74)	2.28 (1.52)							
To seek next bibliotherapy steps										
Motivational <i>n</i> = 96	3.42 (1.80)	4.74 (1.84)	3.87 (1.99)	5.15	.01	.03	2.46	.09	.01	
Control <i>n</i> = 94	3.50 (1.77)	4.28 (1.83)	3.81 (2.07)							
To seek next online steps										
Motivational <i>n</i> = 97	2.94 (1.60)	3.91 (1.76)	3.12 (1.82)	5.23	.01	.03	1.62	.20	.01	
Control <i>n</i> = 92	3.23 (1.76)	3.82 (1.93)	3.02 (1.76)							
To seek medication										
Motivational <i>n</i> = 101	2.24 (1.75)	2.66 (1.98)	2.94 (2.16)	2.77	.06	.01	0.07	.93	.00	
Control <i>n</i> = 94	2.09 (1.60)	2.48 (1.82)	2.69 (2.13)							
Total without medication										
Motivational <i>n</i> = 101	2.95 (1.45)	3.98 (1.51)	3.36 (1.57)	6.34	.00	.03	2.66	.07	.01	
Control <i>n</i> = 94	2.98 (1.41)	3.59 (1.58)	3.10 (1.58)							

Note. Follow-up sample includes all participants who successfully completed study through follow-up. Intentions items were rated on Likert scales from 1 (strongly disagree) to 7 (strongly agree). Baseline household income was included as covariate in all analyses.

Perceived behavioral control over seeking treatment for social anxiety.

Parallel to the intentions items, inspection of the correlation matrix including all perceived behavioral control items confirmed the conceptually-based clustering of items into four subscales based on treatment modality (intentions to seek in-person, therapy, bibliotherapy, online, or medication). Two additional items inquired about participants' confidence in seeking any treatment in the face of particular barriers, and one additional item asked about confidence in seeking medication-based

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treatment. See Tables 5a and 5b for findings in the post-intervention and follow-up samples, respectively.

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Table 5a
Perceived Behavioral Control

		Post-intervention Sample								
		Motivational <i>n</i> = 119, Control <i>n</i> = 122								
		Pre	Post	Main effect (Time)			Interaction effect (Time x Condition)			
		Mean (<i>SD</i>)		<i>F</i>	<i>p</i>	η^2	<i>F</i>	<i>p</i>	η^2	
<i>Perceived behavioral control</i>										
To seek next in-person therapy steps										
	Motivational	3.60 (1.83)	4.12 (1.81)	6.17	.01	.03	<i>F</i> = 1.97	.16	.01	
	Control	3.52 (1.77)	3.82 (1.85)							
To seek next bibliotherapy steps										
	Motivational	4.92 (1.64)	5.36 (1.60)	0.44	.51	.00	<i>F</i> = 0.21	.65	.01	
	Control	4.89 (1.75)	5.21 (1.61)							
To seek next online steps										
	Motivational	4.29 (1.76)	4.72 (1.72)	2.76	.10	.01	<i>F</i> = 0.11	.74	.00	
	Control	4.31 (1.61)	4.68 (1.68)							
To seek medication										
	Motivational	3.18 (2.08)	3.51 (2.17)	6.09	.01	.03	<i>F</i> = 1.07	.30	.00	
	Control	3.02 (1.97)	3.20 (2.07)							
In face of barriers ^a										
	Motivational	3.68 (1.60)	4.47 (1.63)	18.84	.00002	.07	<i>F</i> = 0.67	.42	.00	
	Control	3.52 (1.72)	4.18 (1.70)							
Total										
	Motivational	4.05 (1.46)	4.55 (1.46)	8.34	.004	.03	<i>F</i> = 1.19	.28	.01	
	Control	3.98 (1.31)	4.35 (1.38)							

Note. Post-intervention sample includes all participants who were randomized to condition and successfully completed intervention session, regardless of whether they were retained at follow-up. Perceived behavioral control items were rated on Likert scales from 1 (strongly disagree) to 7 (strongly agree). Baseline household income was included as covariate in all analyses.

^aIncluded two general (rather than modality-specific) items stating “I feel confident that I could seek treatment for social anxiety even if I was:” (1) “very busy” and (2) “scared or nervous.”

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Table 5b
Perceived Behavioral Control

	Follow-up Sample								
	Pre	Post Mean (SD)	Follow-up	Main effect (Time)			Interaction effect (Time x Condition)		
				<i>F</i>	<i>p</i>	ηp^2	<i>F</i>	<i>p</i>	ηp^2
Perceived behavioral control									
To seek next in-person therapy steps									
Motivational <i>n</i> = 100	3.58 (1.82)	4.13 (1.77)	4.34 (1.74)	3.37	.04	.02	2.79	.06	.02
Control <i>n</i> = 92	3.45 (1.77)	3.72 (1.90)	3.69 (1.78)						
To seek next bibliotherapy steps									
Motivational <i>n</i> = 96	4.94 (1.59)	5.39 (1.62)	5.33 (1.61)	0.95	.39	.01	0.19	.83	.00
Control <i>n</i> = 94	4.96 (1.60)	5.28 (1.53)	5.31 (1.66)						
To seek next online steps									
Motivational <i>n</i> = 97	4.30 (1.68)	4.76 (1.69)	4.64 (1.76)	1.10	.34	.01	0.41	.67	.00
Control <i>n</i> = 92	4.43 (1.56)	4.72 (1.65)	4.53 (1.62)						
To seek medication									
Motivational <i>n</i> = 96	3.11 (2.02)	3.38 (2.10)	3.85 (2.11)	6.08	.003	.03	0.28	.76	.00
Control <i>n</i> = 88	2.92 (1.88)	3.09 (2.00)	3.56 (2.03)						
In face of barriers ^a									
Motivational <i>n</i> = 101	3.70 (1.56)	4.53 (1.63)	4.41 (1.78)	7.70	.001	.04	0.51	.60	.00
Control <i>n</i> = 94	3.44 (1.67)	4.09 (1.67)	4.06 (1.79)						
Total									
Motivational <i>n</i> = 101	4.07 (1.39)	4.60 (1.42)	4.63 (1.46)	3.44	.03	.02	0.91	.40	.01
Control <i>n</i> = 94	3.99 (1.28)	4.33 (1.38)	4.33 (1.36)						

Note. Follow-up sample includes all participants who successfully completed study through follow-up. Perceived behavioral control items were rated on Likert scales from 1 (strongly disagree) to 7 (strongly agree). Baseline household income was included as covariate in all analyses.

^aIncluded two general (rather than modality-specific) items stating “I feel confident that I could seek treatment for social anxiety even if I was:” (1) “very busy” and (2) “scared or nervous.”

Social anxiety treatment seeking behavior.

Rates of treatment seeking in the follow-up sample. Results of total score analyses for intervention-recommended, medication, and alternative treatment seeking behavior (as continuous variables) are described in the text below. Behavior scored as bivariate outcomes, depicted in Table 6, provide descriptive information regarding treatment seeking.

Table 6

Descriptives: Treatment Seeking Behavior for Social Anxiety Assessed at Follow-up

	Motivational (<i>n</i> = 101)	Control (<i>n</i> = 94)	Total sample (<i>n</i> = 195)
	# of people (%)		
<i>Behaviors completed</i>			
<i>Steps toward seeking in-person therapy</i>			
Looked up therapist	21 (20.79%)	13 (13.83%)	34 (17.44%)
Scheduled appointment	4 (3.96%)	3 (3.19%)	7 (3.59%)
Attended appointment	4 (3.96%)	4 (4.25%)	8 (4.10%)
Began treatment	6 (5.94%)	1 (1.06%)	7 (3.59%)
<i>Steps toward seeking bibliotherapy</i>			
Looked up book	41 (40.59%)	34 (36.17%)	75 (38.46%)
Obtained book	9 (8.91%)	11 (11.70%)	20 (10.26%)
Began reading book	11 (10.89%)	13 (13.83%)	24 (12.31%)
<i>Steps toward seeking online treatment</i>			
Looked up online treatment	29 (28.71%)	31 (32.98%)	60 (30.77%)
Signed up for online treatment	4 (3.96%)	1 (1.06%)	5 (2.56%)
Began online treatment	7 (6.93%)	2 (2.13%)	9 (4.62%)
Took any of the above steps	59 (58.42%)	46 (48.94%)	105 (53.85%)
Went beyond first step	25 (24.75%)	17 (18.09%)	42 (21.54%)
“No, I did not yet take any of these steps, but I intend to”	22 (21.78%)	19 (20.21%)	41 (21.03%)
<i>Other evidence-based treatment</i>			
Was prescribed medication	3 (2.97%)	4 (4.25%)	7 (3.59%)
Took any evidence-based steps ^a	64 (63.37%)	52 (55.32%)	116 (59.49%)
<i>Alternative treatment</i>			
Sought any alternative form of treatment ^b	53 (52.47%)	33 (35.11%)	86 (44.10%)

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All treatment

Sought any form of treatment ^c	73 (72.28%)	63 (67.02%)	136 (69.74%)
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Note. Follow-up sample includes all participants who successfully completed study through follow-up. Baseline household income was included as covariate in all analyses.

^aAny evidence-based steps = In-person therapy, bibliotherapy, or online steps plus seeking medication. ^bAny alternative form of treatment = exercise, meditation, religious/spiritual leader, toastmasters, or "other." ^c Any form of treatment = In-person therapy, bibliotherapy, or online steps, medication, or any choice listed in ^b.

Any treatment seeking. We created a combined score for all types of social anxiety treatment seeking that were assessed (all intervention-recommended modalities, medication, and alternative treatments). Participants in the motivational condition on average took a significantly greater number of any treatment seeking steps or actions ($M = 2.37, SD = 2.15$) than those in the control condition ($M = 1.84, SD = 1.98$), $p = .047, \eta p^2 = .02$.

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Intervention-recommended treatment (in-person therapy, bibliotherapy, online) seeking. As described (see Method), each treatment seeking behavior consisted of several sequential steps or sub-behaviors toward seeking one or more treatment modalities, including the first step of looking up an in-person therapist, book, or website. The groups did not differ in the total number of steps taken toward seeking intervention-recommended treatment modalities (i.e. in-person therapy, bibliotherapy, or online), $p = .38$, $\eta p^2 = .00$. On average, participants in the control condition took 1.20 steps ($SD = 1.52$) and those in the motivational condition took 1.35 ($SD = 1.52$) steps toward treatment seeking. Divided into distinct treatment modalities, participants in the control condition took a mean of .22 ($SD = .66$) steps toward seeking in-person therapy and those in the motivational condition took .35 ($SD = .74$), group difference: $p = .23$, $\eta p^2 = .01$. Participants in the control condition took a mean of .62 ($SD = .95$) steps toward seeking bibliotherapy and those in the motivational condition took .60 ($SD = .85$), group difference $p = .87$, $\eta p^2 = .00$. Participants in the control condition took a mean of .36 ($SD = .71$) steps toward seeking online treatment and those in the motivational condition took .38 ($SD = .64$), group difference $p = .60$, $\eta p^2 = .00$.

Medication-seeking. Logistic regression revealed that this bivariate outcome-seeking medication versus not seeking medication for social anxiety during the previous month-did not significantly differ between groups, $p = .59$, $\beta = .65$.

Alternative treatment seeking. Participants in the motivational condition endorsed seeking a significantly higher total number of alternative treatments ($M =$

.86, $SD = .97$) than did participants in the control condition ($M = .52$, $SD = .83$), $p = .005$, $\eta p^2 = .04$.

Timing and characterization of treatment seeking behavior. When a numerical scale (1-6) was used to compute a mean score for each participant representing when they took first steps toward seeking any given form of treatment, as applicable, participants selected on average between “within two days” of the intervention to “within one week” of the intervention ($M = 2.77$, $SD = 1.29$, $n = 107$). Linear regression covarying household income revealed no group differences in this variable, $p = .94$, $\eta p^2 = .00$.

Table 7 presents additional descriptive information regarding treatment seeking. Specifically, the table includes frequencies of responses (from participants who took any steps toward seeking in-person therapy, bibliotherapy, or online treatment) regarding whether the treatment they sought was “CBT or related.” Group difference analyses were not conducted due to restrictions in the data, i.e. small numbers of participants in each group and number of response options.

Table 7*Descriptives: Treatment Seeking Behavior- CBT in Relation to Steps Taken*

	Motivational	Control	Total Sample
	# of people (%)		
If endorsed in-person therapy, was it CBT?			
Yes	6 (25.00%)	4 (28.57%)	10 (26.32%)
No	10 (41.66%)	1 (7.14%)	11 (28.95%)
Unsure	8 (33.33%)	9 (64.29%)	17 (44.74%)
If endorsed bibliotherapy, was it CBT?			
Yes	16 (37.21%)	17 (47.22%)	33 (41.77%)
No	4 (9.30%)	3 (8.33%)	7 (8.86%)
Unsure	23 (53.49%)	16 (44.44%)	39 (49.37%)
If endorsed online, was it CBT?			
Yes	9 (31.03%)	7 (22.58%)	16 (26.67%)
No	5 (17.24%)	4 (12.90%)	9 (15.00%)
Unsure	15 (51.72%)	20 (64.52%)	35 (58.33%)

Note. Includes all participants who successfully completed study through follow-up. All above items asked "was it CBT or related treatment?" in reference to steps taken.

Discussion

To our knowledge, the current study represents the first investigation of an online intervention to facilitating treatment seeking for social anxiety and the largest randomized study to date to test a treatment seeking intervention for anxiety. Generally, the data confirmed our hypotheses regarding feasibility and improvements in motivation over time as a result of participation in the study; confirmation of group difference hypotheses was inconsistent, though overall patterns favored the motivational condition.

Specifically, the data confirmed Hypothesis 1 predicting that the interventions would be feasible and acceptable to participants. Participants rated moderate satisfaction with the intervention. We successfully recruited socially anxious participants and completed all data collection (including follow-up) within

less than three months. Our ability to recruit participants online aligns with findings demonstrating that a substantial percentage of MTurk users report symptoms of social anxiety (Shapiro, Chandler, & Mueller, 2013). Both groups of participants were engaged in the interactive interventions and the vast majority (74%) were retained through follow-up. The extensive and specific qualitative feedback provided suggests overall positive subjective responses to the intervention and warrants further investigation.

The data also confirmed Hypothesis 2a and b predicting improvements in attitudes over time in both conditions from Pre to Post, with greater improvements in the motivational condition, which were maintained thru FU. Both groups also improved in intentions, with the exception of intentions to seek in-person therapy, at least in the FU sample. The data did not support Hypothesis 2b predicting that these changes over time would differ significantly by group. However, trend-level findings on multiple intentions outcomes in favor of the motivational condition showed patterns in the predicted direction of this hypothesis. Lastly, the data confirmed Hypothesis 2a predicting a main effect of time in perceived behavioral control over several forms of treatment seeking, apart from bibliotherapy and online treatment. The data did not support Hypothesis 2b predicting that changes in perceived behavioral control would differ by group, with the exception of a trend-level finding in favor of the motivational condition in perceived control over seeking in-person therapy (in the FU sample).

Self-reported behavioral data at FU revealed that across groups, the majority of participants engaged in at least one step toward seeking treatment for social

anxiety. The data partially supported exploratory Hypothesis 3 predicting that the motivational condition would be more likely to facilitate behavior; participants in the motivational condition took a significantly greater number of total treatment seeking steps (across all assessed modalities), and endorsed a significantly greater number of “alternative” treatments than those in the control condition. However, other forms of treatment seeking behavior demonstrated no significant difference between groups.

Contextualizing the Current Findings

We compared our results to those of Buckner and Schmidt (2009), the closest known study conducted to date. Findings aligned in that both studies revealed superiority of the motivational condition on some but not all outcomes. Similarities are likely accounted for by significant overlap between studies in the motivational content and focus of the interventions. Additionally, both studies used a clinical cutoff on a self-report social anxiety symptom measure for eligibility. Compared to Buckner and Schmidt (2009), the present study found more improvements in self-reported motivation across groups as well as superiority of the motivational condition on particular outcomes (e.g. attitudes), which may be due to the imprecision of Buckner and Schmidt’s (2009) measures of motivation. In contrast to the present study, Buckner and Schmidt (2009) found significant condition differences in evidence-based behavior change- attending a CBT appointment- as well as increases in willingness to attend an appointment- in favor of the motivational condition. This may be because a multi-session, in-person intervention is more potent for changing behavior or because Buckner and Schmidt’s referrals

were more specific and directly accessible within the study site. Our referral sources were less concrete and required more independent decision-making. Lastly, the present study retained a greater portion of participants at one month FU than Buckner and Schmidt (2009) despite the latter study offering substantially higher compensation for FU completion. It is possible that an online format is more appealing for individuals with social anxiety because it does not demand direct interaction. This explanation would be congruent with Shapiro et al.'s (2013) finding that adults with clinical levels of social anxiety reported significantly less comfort disclosing clinical information in-person compared to adults without elevated social anxiety, whereas both adults with and without social anxiety reported equal comfort disclosing clinical information online. In conclusion, the present study extends the findings of Buckner and Schmidt (2009) in a study using a single-session online intervention within a larger sample.

The measures that changed in the present study are broadly congruent with Maltby and Tolin's (2007) use of motivational techniques to facilitate utilization of exposure therapy, which promoted treatment enrollment (in ERP for OCD) more often than did a waitlist control. Their more in-depth intervention (four in-person sessions covering a range of content), clear and readily accessible source of treatment located onsite in the referring ERP clinic, and comparison to a waitlist likely accounts for its stronger behavior findings compared to the present study.

The present study extends the broader treatment dissemination literature and in particular, recent direct-to-consumer marketing efforts (e.g. Gallo et al., 2015, the largest randomized trial of direct-to-consumer marketing of psychotherapy to

date). Our findings also generally align with the data summarized in Gulliver et al.'s (2012) review of randomized interventions aiming to facilitate mental health help seeking in general samples. In the studies reviewed, active conditions generally improved attitudes, willingness, and beliefs compared to control conditions and broadly demonstrated greater changes in attitudes than behavior. The behavior outcomes in the present study that did significantly differ by group align with results of one of the studies included in the review, by Christensen, Leach, Barney, Mackinnon, and Griffiths (2006) in the context of depression. However, because the majority of studies reviewed in Gulliver et al. (2012) used universal rather than clinical samples, comparison to our specifically targeted intervention is limited.

Study Considerations and Strengths

A key strength of the present study is its brief, single-session, and online nature, which enhances its ability to be more widely disseminated. As reviewed, the use of an online context substantially increases its potential for broad dissemination for psychological treatment generally and in the context of social anxiety specifically given specific fears of social interaction. Because of the tremendous scale of the gap between anxiety and psychotherapy utilization, continued investigations of accessible and cost-effective dissemination projects are warranted. Nonetheless, the present study's brevity could have limited our power to impact change, particularly when applied to the context of symptoms that have typically persisted for many years.

Group differences that arose in the present study are likely not due differences in perceptions of the legitimacy of psychotherapy given that

improvements in treatment credibility/expectancy over time did not significantly differ by group.

Regarding participant satisfaction with the intervention, significant group differences in favor of the motivational condition did not emerge until FU. It may be that the extra content covered in the motivational intervention became more relevant once participants actually considered or researched treatment during the month between post-intervention and FU.

Superiority of the motivational condition above and beyond the control arose most clearly on the measure of attitudes. Although there exists a gap between attitudes and behavior across the literature generally, attitude change serves as an important first step toward behavior change. In fact, a recent analysis of epidemiological data from the National Comorbidity Study (albeit data was collected 1990-1992) found that in a general adult sample, “attitudes” toward mental health treatment seeking (specifically “feeling comfortable” seeking help and “willingness” to seek help) significantly predicted mental health help seeking behavior at FU (Mojtabai et al., 2016). The discrepancies between the ways in which attitudes are measured across treatment seeking studies indicates a need for future research determining how to most precisely measure treatment seeking predictors.

A strength of the current study was that both conditions provided psychoeducation that was relatively in-depth. Specifically, the psychoeducation on CBT included an interactive exercise. The referrals included several sources and modalities of treatment, appropriate for different income levels and preferences regarding in-person contact, alongside research evidence in support of CBT

interventions, key words and search suggestions, and anticipating barriers common in and addressing treatment seeking expectations. The level of detail included in the psychoeducation/referral components was included in order to create a robust intervention to optimize the likelihood of creating significant change in treatment seeking outcomes given the brief and online nature of the study. However, it is also possible that the information provided was overly complicated, particularly given the findings of Carman et al. (2010) indicating that “many individuals are confused by the concept of ‘evidence-based’ health care and complex terms and concepts used.” In line with the Centers for Disease Control and Prevention’s recommendations (Centers for Disease Control and Prevention, 2009), future research should consider potential benefits of presenting information more simply.

Study Limitations and Future Directions

Several factors limited our study. The first involves sample size: the study was not powered to detect changes in behavior. Relatedly, we were unable to comprehensively compare the likelihood of seeking evidence-based treatment (i.e. CBT) specifically between groups because of insufficient statistical power (small cell sizes) to conduct analyses on this variable. The ability to detect changes in behavioral outcomes warrants future research with larger samples.

Additionally, the present study’s referral sources were diffuse, consisting of recommendations regarding how to find a variety of in-person therapists using nation-wide databases as well as bibliotherapy and online therapy. Because participants did not receive one clear referral pathway, treatment seeking demanded decision-making which may have led them to encounter further barriers.

In addition, although the study design enabled us to delineate the effects of psychoeducation and referral information from additional motivational content, the two conditions were not matched for time/length of contact. Because information-only may reflect a typical standard of care, this enabled for a more externally valid comparison. Additionally, it can be argued that demonstrating any group difference is a preliminary aim for a pilot study. Nonetheless, we recommend that future research compare a motivational condition to a comparison group or match conditions on length. Another design-related limitation lies in the fact that the interventions aimed both to facilitate treatment seeking for social anxiety broadly and emphasized CBT. Although these address two related challenges (lack of any as well as lack of evidence-based psychotherapy utilization), it could have resulted in a lack of clarity for participants. Future studies could benefit from more specific investigation regarding the CBT component.

A potential limitation lies in recruitment of our study sample. We did not use a clinical interview to determine study eligibility, instead relying on self-reported symptoms, and thus cannot fully generalize our findings to a population of adults diagnosed with SAD based on clinical assessment. However, we used a conservative cutoff on a well-validated measure frequently used for clinical screening which has been shown to correlate with clinical diagnostic status (see *Method*).

Contextual Limitations

This study was in some ways constrained by limitations in the field. As described, there lacks a central theoretical model on which to base psychotherapy seeking interventions (Gulliver, Griffiths, Christensen, & Brewer, 2012). Thus, we

drew from existing data and theory to craft the conditions, targeting what to the best of our knowledge are important elements to treatment seeking: mental health literacy and personal motivation (sufficient to overcome potential treatment seeking barriers). However, due to the dearth of research clarifying central barriers to treatment seeking in SAD, the specific content of the interventions remained exploratory. Further research elucidating specific modifiable barriers to treatment seeking in SAD would help to guide more systematic design of interventions.

Additionally, because the literature lacked a single comprehensive measure of motivation, we adapted one specifically for the present study (described in *Method*). This measure was based in the Theory of Planned Behavior and similar scales have been widely adapted across the health behavior change literature; we also took into account the specific preparatory steps toward treatment seeking for SAD when attrition commonly occurs (Coles, Turk, Jindra, and Heimberg, 2004). Although this outcome was theoretically informed, it has not been validated for use as an outcome measure related to motivation for mental health treatment seeking. Reliance on these measures may not have accurately captured response to the interventions. Future research is needed to develop more standardized ways of assessing motivation for psychotherapy.

Additional Future Directions

On one hand, the fact that several outcomes improved over time in both conditions indicates that providing psychoeducation and treatment referrals alone may be a worthwhile initial intervention, particularly given that it could be implemented relatively simply and with low cost (e.g. physicians sharing website

information). On the other hand, several significant findings and trends in favor of the motivational condition indicate that for more substantive change, a focus above and beyond psychoeducation (e.g. motivational techniques or addressing specific barriers to seeking treatment) may be necessary. Given that the motivational condition included elements from both ACT and MI, more research is needed to understand the specificity of intervention approaches.

Particular behavioral findings warrant future exploration. Specifically, the popularity of bibliotherapy over other evidence-based treatment modalities across groups (per visual inspection of the data), and movement toward “alternative” treatments significantly more in the motivational condition, warrant further study regarding treatment preferences for social anxiety. Bibliotherapy may have appealed to participants because of its cost-effectiveness, flexibility, independence, lack of requirement for in-person contact and potentially reduced stigma; the relatively lower interest in online therapy warrants future investigation. The fact that participants in the motivational condition sought significantly more “alternative” treatment indicates that this condition more successfully motivated action but that participants applied this motivation in individualized ways rather than necessarily pursuing study-recommended modalities.

Participation in alternative treatment may reflect interest in treatment that carries less stigma, can be completed independently, and is free of cost and accessible. Although statistical comparisons were not conducted, visual examination of the behavioral data also revealed that most frequently, participants reported that they were “unsure” whether the treatment they sought involved CBT, with only a

minority of participants reporting that “yes,” what they sought was CBT. However, an apparently much higher percentage endorsed that they sought CBT in the bibliotherapy category. This may be due to the fact that participants were referred to a more specific bibliotherapy treatment channel (i.e. were provided with direct links to CBT and related books for SAD) rather than broad databases for finding therapists. Future research is warranted to determine the most effective ways to present information about treatment while acknowledging and taking into account participant preferences.

Lastly, the data indicated that there may be a particular window of time in which adults are motivated and connect that motivation to action (in this case, approximately one week post-intervention), which may guide the timing of future interventions.

Summary and Conclusions

To our knowledge, this is the largest randomized study to date to test an anxiety-specific treatment seeking intervention as well as the first randomized study to use an online format to facilitate treatment seeking for social anxiety. Additionally, the present study advances the literature by exploring the use of broader referrals (i.e. general sources of in-person, bibliotherapy, and online treatment options) rather than a single, specific referral stream (e.g. one particular in-person clinic), enhancing its broad public healthy applicability.

Addressing client treatment seeking behavior is one component of the larger issue of disseminating evidence-based treatment for anxiety disorders and should be studied alongside “top-down” efforts to improve accessibility of high quality care.

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The feasibility of the present study supports recent recommendations to employ online modalities to improve treatment dissemination generally (e.g. Gallo, Comer & Barlow, 2013). This study provides a promising direction for addressing barriers to socially anxious adults utilizing effective treatment that could significantly improve their quality of life.

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Appendix A

Correlations Among Attitudes Items at Pre-Intervention

Item	1	2	3	4	5	6	7
1. Unhealthy (1) – Healthy (7)^a	-						
2. Harmful (1) – Beneficial (7)^a	.744	-					
3. Unpleasant (1) – Pleasant (7)^b	.247	.297	-				
4. Bad (1) – Good (7)^a	.648	.746	.364	-			
5. Worthless (1) – Valuable (7)^a	.629	.726	.429	.648	-		
6. Unenjoyable (1) – Enjoyable (7)^b	.244	.293	.809	.343	.397	-	
7. Punishing (1) – Rewarding (7)^b	.504	.560	.565	.541	.619	.511	-

Note. $n = 245$. Instructions were to rate items on Likert scale from 1-7 completing the statement “Seeking treatment for social anxiety in the next month would be: X.” ^aItems included in “usefulness” subscale. ^bItems included in “likeability” subscale.

Appendix B

Correlations Among Intentions Items at Pre-Intervention

Item	1	2	3	4	5	6	7	8	9	10	11
1. Look up counselor/ therapist	-										
2. Schedule initial appointment	.851	-									
3. Attend initial appointment	.827	.964	-								
4. Begin therapy	.830	.942	.954	-							
5. Look for self-help book	.475	.389	.398	.425	-						
6. Purchase/obtain self-help book	.463	.410	.428	.464	.917	-					
7. Begin reading self-help book	.472	.418	.434	.462	.923	.936	-				
8. Look up online treatment	.466	.409	.402	.409	.740	.700	.713	-			
9. Purchase/sign up for online treatment	.501	.473	.458	.490	.687	.691	.667	.834	-		
10. Begin using online treatment	.507	.472	.458	.493	.691	.695	.665	.851	.949	-	
11. Seek medication-based treatment	.508	.599	.577	.591	.422	.426	.454	.403	.444	.435	-

Note. $n = 245$. Instructions were to rate items on Likert scale from 1-7 completing the statement "within the next month, I intend to ____." See *Method* for details. Items 1-4 are in-person therapy steps, 5-7 are book steps, 9-10 are online steps, and 11 is a single item.