A Brief Intervention on Treatment-seeking: Barriers to Mental Health Treatment in Primary Care

Dissertation

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Abstract

Untreated mental illness is a significant public health problem with nearly 58 million American adults suffering from a diagnosable mental disorder each year and only 30% of these individuals seeking professional care. Without adequate treatment, mental illness can result in unstable education and employment, interpersonal difficulties, physical ailment, and suicide. It also accounts for more than 100 billion dollars in economic costs in the United States alone every year. One’s decision to seek treatment is likely influenced by sociodemographic, cognitive, and behavioral factors. Limited research, however, has been completed examining these constructs in relation to actual service use, particularly over time with individuals in distress. Further, many constructs such as insight, attitudes, and avoidance appear to be malleable, yet few interventions have been designed or tested targeting these variables and encouraging service use. The current study examined sociodemographic, cognitive, and behavioral constructs associated with mental health care service use in prospective design with a clinically-distressed sample. Participant recruitment was completed in a primary care facility as individuals in distress often utilize primary care as an initial pathway for help. Primary care patients reporting significant depressive symptoms were randomized into one of three intervention arms designed to increase mental health service use. The effect of an avoidance-reduction intervention on participant treatment-seeking following referral was contrasted against enhanced-referral and psychoeducation interventions. Ethnic minority-status and
attitudes toward treatment were the strongest predictors of service use. The effect of intervention on increased service use was trending toward a significant effect ($p = .09$), and the effect of the avoidance-reduction intervention on the reduction of depressive symptoms, compared to the other two conditions was moderate ($p = .03$, $\eta_p^2 = .17$). Results of this study shed light on barriers to treatment-seeking by those in need and may be used to enhance best practices and ensure adequate mental health treatment for primary care patients.
Dedicated to every person who has gone without
and to one in particular.
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Chapter 1: Introduction

One quarter of American adults suffer from a diagnosable mental disorder in any given year (Kessler, Chiu, Demler, & Walters, 2005). The number of individuals using mental health services, however, is far fewer. Researchers report that only 30% of those with a diagnosable disorder seek prompt, professional care (Andrews, Issakidis, & Carter, 2001; Kessler et al., 2005; Kessler & Walters, 1998; Zachrisson, Rodje, & Mykletun, 2006). A treatment-seeking rate between 20 and 40% has been documented across disorders, including alcohol abuse (Tucker, 2001), anorexia nervosa (Hoek & van Hoeken, 2003), posttraumatic stress disorder (Amaya-Jackson et al., 1999), and obsessive-compulsive disorder (Goodwin, Koenen, Hellman, Guardino, & Struening, 2002; Mayerovitch, Galbaud du Fort, Kakuma, Bland, Newman, & Pinard, 2003). Although major depressive disorder is the leading cause of disability in Americans aged 15 to 44 (WHO, 2008), at least half of those with a depressive disorder do not consult a health professional when in need (Bland, Newman, & Orn, 1997; Henderson, Pollard, Jacobi, & Merkel, 1992; Kessler et al., 2005). More than 40% of individuals experiencing suicidal ideation in a 12-month span did not seek professional help in a sample of Australian adults (Johnston, Pirkis, & Burgess, 2009). In fact, of individuals with diagnosable disorders, those with suicidal behavior appear the least likely to seek help from any source (Barnes, Ikeda, & Kresnow, 2001; Beck, Brown, Steer, Dahlsgaard,
& Grisham, 1999; Saunders, Resnick, Hoberman, & Blum, 1994), and researchers find that as suicidal ideation increases, help-seeking intentions and actions actually decrease (Carlton & Deane, 2000; Deane, Skogstad, & Williams, 1999; Deane, Wilson, & Ciarrochi, 2001), despite consistency in hopelessness, future expectations, and perceived problem-solving ability (Wilson & Deane, 2010a).

The disinclination of individuals to seek professional help when experiencing psychological distress is a significant public health problem. Untreated mental illness is associated with unstable employment, interpersonal instability and violence, educational impairment, physical health difficulties, and suicide. As many as 22% of individuals in jails and prisons are diagnosed with a mental illness (James & Glaze, 2006), and approximately one-third of the homeless population suffers from serious mental illness (Harwood et al., 2000). The National Alliance of Mental Illness estimates that the economic cost of untreated mental illness is more than 100 billion dollars each year in the United States alone (NAMI, 2012).

**Primary Care**

Survey studies indicate that most individuals with a lifetime history of mental illness report seeking care eventually, but delays to treatment are, on average, one to two decades after symptom onset (Green, Hunt, & Stain, 2011; Wang, Berglund, Olfson, & Kessler, 2004). Unfortunately, longer delays in treatment lead to more frequent and more severe episodes of distress as well as a higher resistance to treatment once it is eventually sought (Post & Weiss, 1998). When an individual does seek treatment, research shows that primary care physicians (PCPs) are usually the first—and often only—contact for
treatment services (Slade, Johnston, Browne, Andrews, & Whiteford, 2009; Snowden, 2001; Wang et al., 2004). A higher rate of mental health treatment-seeking is found in primary care settings than in mental health settings (Alvidrez & Azocar, 1999; Doherty & O’Doherty, 2010; Snowden, 2001), particularly among older adults (Mackenzie, Gekoski, & Knox, 2006).

Despite the frequent presentation of individuals with mental illness in primary care settings, primary care services tend to be inadequate for the treatment of mental disorders (e.g., Barbui & Tansella, 2006; MaGPIe Research Group, 2006; Yiend et al., 2009). According to epidemiological survey data, only one in five patients receiving care for a psychological disorder from a PCP was adequately treated (Kessler et al., 2003), and, in another study, PCPs recommended secondary care to as few as 12% of patients with significant psychological symptoms (Huxley, 1996). In other words, despite research showing that as many as 80% of individuals are not receiving adequate treatment for mental disorders from their PCPs, referrals to mental health specialists are made to only 12% of those presenting with mental health difficulties.

A lack of attention to the assessment and treatment of suicide is particularly problematic in primary care settings. Several findings indicate that the majority of individuals who commit suicide have seen a PCP, but not a mental health specialist, recently (Farand, Renaud, & Chagnon, 2004; Feldman et al., 2007; Wu, Katic, Liu, Fan, & Fuller, 2010). Although individuals experiencing suicidal ideation may be more likely to seek help from a PCP than a mental health specialist, PCPs may not be adequately prepared to address suicide-related thoughts and behaviors. According to a recent report,
suicide was explored in only 36% of 298 cases in which confederates (i.e., actresses) reported significant symptoms of major depressive disorder to a PCP (Feldman et al., 2007). To further explore the assessment of suicidality in a clinical sample, researchers reviewed the notes of PCPs who had treated individuals shortly before the patient committed suicide (Pearson et al., 2009). Although 54% of the patients reported psychological distress as their primary concern and 15% discussed suicidal plans, PCPs reported concern for the safety of the patient in only 26% of all included cases. When PCPs did make referrals to secondary sources (64% of total cases), nearly 85% of patients accepted the referral. This high referral acceptance rate suggests that PCPs may have a unique influence in guiding patients in need to appropriate mental health care, particularly when the patient is acutely distressed.

**Models of Treatment-seeking**

In view of the consequences associated with untreated mental illness and benefits associated with treatment access (Greenberg, Domitrovich, & Bumbarger, 2001; Kalafat, 1997; Rickwood, Deane, & Wilson, 2007), it is pertinent to understand the factors that may hinder treatment-seeking and to develop interventions that promote adequate service use. Researching the constructs associated with low mental health treatment-seeking rates, however, is challenging to complete as the population targeted is comprised specifically of those individuals who are not presenting at mental health facilities. Thus far, researchers have examined participant’s attitudes and intentions to seek care, generally using unselected samples in university and community settings. To examine clinical samples, researchers have relied heavily on retrospective reports of past and
delayed service use, most commonly in epidemiological survey studies. The National Comorbidity Survey (Kessler, 1994) and the National Comorbidity Survey-Replication (Nock, Hwang, Sampson, & Kessler, 2009), are large-scale epidemiological studies of mental health in the United States used to identify relations between service use and various constructs, and several similar studies have been conducted throughout the world (e.g., Alonso et al., 2004; Andrews, Hall, Teesson, & Henderson, 1999; Angst et al., 2010; Bijl, Ravelli, & van Zessen, 1998; Teesson, Slade, & Mills, 2009; Wang et al., 2007). While prospective designs of service use in clinical samples may be the most useful for identifying factors that influence treatment-seeking, only a few studies have been completed with this design.

Using various designs, numerous constructs are linked to treatment-seeking, and several help-seeking models exist to explain the interplay and temporal course of predictors of treatment-seeking. At the broadest level, researchers suggest that cognitive, affective, and behavioral responses to psychological distress are each essential in explaining the discrepancies between mental health need and service use (Rickwood, Deane, Wilson, & Ciarrochi, 2005) with the predominate focus on cognitive factors involved in one’s decision to seek help (e.g., Ajzen, 1991; Anderson, 1995; Fischer & Turner, 1970; Leventhal, Patrick-Miller, Leventhal, & Burns, 1998; Prochaska, DiClemente, & Norcross, 1992). These models are often broken into three non-linear phases, including problem-identification, decision to seek help, and selection of helping source, with each phase heavily influenced by one’s beliefs regarding help-seeking (Wilson & Deane, 2010a). Specifically, the Theory of Planned Behavior (Ajzen, 1999)
has, at the core of the model, that volitional behavior is a function of one’s beliefs regarding the intended behavior; so, whether one seeks treatment or not is dependent on his or her beliefs about the act of seeking treatment. These beliefs are considered antecedent to the attitudes, subjective norms, and perceived behavioral control, which ultimately determine intention and consequently action (e.g., help-seeking). This focus on cognitive factors (e.g., attitudes and intent) is critical in explaining one’s decision to seek treatment with most models including attitudinal, self-efficacy, normative, and risk-related beliefs as well as help-seeking intentions (Schrieber, Renneberg, & Maercker, 2009). Models such as Anderson’s (1995) behavioral model of access to health care also include enabling resources (e.g., availability and access) as a final factor in help-seeking.

Using these models as a foundation, researchers have investigated myriad variables related to help-seeking and identified significant associations with particular enabling resources, such as availability and cost, as well as cognitive factors, such as beliefs and perceived need regarding mental health and help-seeking. Evidence also exists indicating that fears related to seeking treatment and the individual differences that may cause an individual to be more responsive to these fears are important in understanding service use. Specifically, the avoidance of treatment due to fears and discomfort appears to be a significant barrier in treatment-seeking. Several personality, coping, and interpersonal variables may influence how likely one is to have fears of treatment as well as to respond to fears with avoidance. In the next section, I will provide a brief review of each of the overarching constructs (i.e., demographics, enabling resources, attitudes and beliefs, and avoidance) instrumental in treatment-seeking and
Demographic constructs.

Demographic variables are some of the most frequently reported variables that differentiate those who utilize mental health resources from those who do not. Age, gender, ethnicity, and socioeconomic status (SES) have each been associated with treatment-seeking attitudes or behaviors. One of the most striking findings is reduced service use at both ends of the age spectrum. Treatment-seeking is particularly low among older adults (Andrews et al., 2001; Goodwin, Hoven, Lyons, & Stein, 2002; Karlin et al., 2008; Nyunt et al., 2009; Slade et al., 2009). Young- and middle-age adults were, respectively, 1.5 and 2.1 times more likely to report receiving mental health services than older adults in an epidemiological survey (Wang et al., 2005b). Lack of service use by older adults is particularly distressing given research findings that indicate depression occurs in up to 40% of adults aged 65 and older and is associated with decreased quality of life, all cause mortality and morbidity, and the highest suicide rate of any age (Blazer, 2003). Individuals aged 16 to 24 are another age group unlikely to engage in treatment-seeking behavior (Kessler et al., 2001; Olfson & Klerman, 1992; Slade et al., 2009) with estimates suggesting that only 17% of young adults experiencing mental distress seek professional care (Rickwood & Braithwaite, 1994). Studies examining treatment use in prevention and intake settings indicate that younger adults are more likely to refuse participation than middle-aged adults (Chiesa, Martino, & Pozzi, 2010; Murray, Woolgar, Murray, & Cooper, 2003). Unfortunately, similar to older adults, young adults are at a significant risk for mental illness as well as suicide (Berman,
and suicide is the third leading cause of death among those aged 15 to 24 (CDCP, 2010).

Data from epidemiological survey studies indicate that men are considerably less likely to use mental health services than women, even when experiencing comparable levels of distress (Addis & Mahalik, 2003; Andrews et al., 2001; Husaini, Moore, & Cain, 1994; Levinson & Ifrah, 2010; Slade et al., 2009; Sorgaard, Sandanger, Sorensen, Ingebrigtsen, & Dalgard, 1998). Gender differences are found across many disorders and are most evident in affective disorders where women are approximately 1.5 times more likely to seek treatment than men (Kessler et al., 2005). Gender differences regarding treatment-seeking have not been found, however, in those with obsessive-compulsive disorder (Goodwin, Koenen, et al., 2002; Mayerovitch et al., 2003; Beşiroğlu & Ağargün, 2004), impulse control disorders (Kessler et al., 2005), or substance use disorders (Kessler et al., 2005).

In both men and women, mental health service use is less frequent for individuals who are lower in socioeconomic status (SES), have fewer years of formal education, or are an ethnic minority (Andrews et al., 2001; Goodwin, Hoven, et al., 2002; Karlin et al., 2008; Mojtabai & Olfson, 2006; Murray et al., 2003). African American, Latino, and Asian American ethnic status is associated with reduced use of outpatient mental health services compared to Caucasian ethnic status (Conner et al., 2010; Leong & Lau, 2001; Lewis et al., 2005; Pescosolido & Boyer, 1999; West, Kantor, & Jasinki, 1998, Wu et al., 2010). Controlling for other sociodemographic differences, African Americans are half as likely to seek outpatient mental health care as Caucasian Americans (Frieman,
Cunningham, & Cornelius, 1994; Roberts, Gilman, Breslau, & Koenen, 2011). These findings, however, are not consistent; in several studies, demographic factors were unrelated to treatment-seeking (Kessler et al., 2001; Komiti, Judd, & Jackson, 2006; Olfson & Klerman, 1992) or treatment delay (Wang et al., 2004).

In prospective studies of service use, there are mixed findings regarding the predictive effect of demographic factors on treatment-seeking. Age and gender predicted service use in several studies (Golberstein, Eisenberg, & Gollust, 2009; Jorm et al., 2000; Sherbourne, 1988). In an epidemiological survey sample of Swiss adults, gender predicted treatment-seeking for those with a diagnosis of depression but not for individuals with other disorders (Angst et al., 2010), and the effect of gender was non-significant in a sample of Puerto Rican adults (Albizu-Garcia, Alegría, Freeman, & Vera, 2001). Race was not a significant predictor in either of the two prospective studies in which it is was reported (Golberstein et al., 2009; Sherbourne, 1988), and Phillips and Murrell (1994) reported all measured demographic variables to be non-significant when entered into models with variables such as distress and social support in a longitudinal study of older adults.

**Enabling resources.**

Many studies highlight enabling resources such as time, transportation, finances, information, and service availability as primary barriers to seeking mental health care. Fewer than 40% of individuals with a serious mental illness in the National Comorbidity Survey study reported use of mental health services in the previous year (Kessler et al., 2001) and, of the individuals who had not engaged in treatment despite reporting need,
52% reported situational barriers (e.g., lack of time or service access) and 46% reported financial barriers. Those who had not sought treatment were also more likely than treatment-seekers to report that treatment would be too inconvenient or time-consuming (33% to 20%, respectively). Situational barriers including distance, time, and transportation were each significant factors in predicting pretreatment attrition (e.g., refusal of treatment following an intake assessment) for patients diagnosed with personality disorders (Chiesa et al., 2010). Similarly, epidemiological studies indicate that those living in rural areas are less likely to have sought treatment when in need compared to those living in urban areas (Green et al., 2011; Mill, Van Hooff, Baur, & McFarlane, 2011; Parikh, Wasylkeni, Goering, & Wong, 1996; Wang et al., 2005b). Conversely, Doherty and O’Doherty (2010) found that men in less populated areas were 2.3 times more likely to seek care for an emotional problem compared to men in urban areas, and Kessler and colleagues (2001) reported higher service use for serious mental illness by those living in rural areas. However, it is not clear in any of these studies whether service availability or a third variable (e.g., differences in attitudes or beliefs) accounted for these differences. In a longitudinal study of older adults, neither service availability nor urban/rural habitation were significant predictors of service use (Phillips & Murrell, 1994).

The influence of enabling resources may be most prominent in groups with limited resources. Financial factors, such as insurance and income, correlate significantly and positively with treatment-seeking in individuals with depressive symptoms (Olfson & Klerman, 1992; Wu et al. 2010). Increased access to financial support may permit
service use, and a lack of financial support may inhibit treatment-seeking and also be a stressor that increases need. University students seeking counseling reported significantly less financial support than non-treatment-seeking controls (Goodman, Sewell, & Jampol, 1984). Several researchers have also demonstrated that compared to middle-class individuals, low-SES individuals report more situational barriers to entering mental health treatment (Blendon et al., 1995; Cooper-Patrick et al., 1997; Leaf, Bruce, Tischler, & Holzer, 1987; Takeuchi, Leaf, & Kuo, 1988). In a sample of low-SES, minority women reporting current psychological distress, 80% expressed an interest in mental health treatment; only one-third of the women, however, attempted to receive treatment (Alvidrez & Azocar, 1999). Lack of service use despite desire appears due, at least in part, to significant enabling resource difficulties; 83% of the women cited cost, 46% cited time, 33% cited transportation, and 20% cited childcare as a barrier to entering treatment. Similarly, in an anxiety treatment clinic, the presence of at least one child in the home, likely related to enabling resources such as time and finances, was the only significant sociodemographic variable that positively predicted attrition after treatment was sought but had not yet begun in both men and women (Issakidis & Andrews, 2004).

Although enabling resources are imperative to accessing treatment, they likely do not account for all the predictive variance in treatment-seeking. Prospective studies have found both significant and non-significant effects for education, income, and insurance availability (e.g., Albizu-Garcia et al., 2001; Golberstein et al., 2009; Phillips & Murrell, 1994; Sherbourne, 1988), and, even when cost was not a barrier (e.g., government compensation), service use by victims of crime remained modest (New & Berliner,
2000). These findings suggest that other variables contribute to one’s decision to seek care. In fact, situational barriers to treatment were only endorsed by 22% of individuals with psychological need in the National Comorbidity Survey Replication study, while attitudinal/evaluative barriers were endorsed by 97% of respondents (Mojtabai et al., 2011).

**Cognitive constructs.**

A vast amount of the treatment-seeking research examines cognitive constructs, specifically the attitudes and beliefs associated with mental illness and treatment. At least 25% of individuals in the U. S. report negative beliefs about seeking help for emotional problems (Jagdeo, Cox, Stein, & Sareen, 2009). Negative attitudes and beliefs are particularly common in younger, less educated, lower income, and unmarried individuals (Vessey & Howard, 1993) as well as members of ethnic minority groups (Kazdin, 1980; Tarnowski, Rasnake, Mulick, & Kelly, 1989) and men (Barwick, de Man, & McKelvie, 2009; Fisher & Turner, 1970), providing a hypothesis as to why service use is lower in these populations. Surprisingly, although older adults are less likely to seek treatment from a mental health professional, studies suggest that older adults hold generally positive attitudes regarding help-seeking (Berger, Levant, McMillan, Kelleher, & Sellers, 2005; Currin, Schneider, Hayslip, & Kookan, 1998; Mackenzie et al., 2006; Robb, Haley, Becker, Polivka, & Chwa, 2003; Rokke & Scogin, 1995; Sirey et al., 2001).

Favorable attitudes and beliefs about service use are negatively associated with intentions to use services (should the need arise) and recommendations of mental health services to hypothetical others (e.g., Barney, Griffiths, Jorm, & Christensen, 2006; ten
Have et al., 2010; Vogel, Wade, & Haake, 2006). In a test of Azjen’s Theory of Planned Behavior, researchers asked a random sample of adults to imagine they were experiencing several depressive symptoms and had been referred to a psychiatrist by their PCP (Schomerus, Matschinger, & Angermeyer, 2009). When asked the likelihood of following the referral and seeking mental health services, beliefs (about help-seeking effectiveness and acceptability) accounted for 42 - 51% of the variance in intentions to seek help in control respondents and 50 - 61% of the variance in depressed respondents. In relation to actual service use, more positive attitudes toward treatment-seeking are associated with previous treatment experience (Hayslip, Maiden, Thomison, & Temple, 2010; Komiti et al., 2006; Masuda, Anderson, & Edmonds, 2012), particularly if previous treatment was deemed successful (Kelly, Epstein, & McCrady, 2004; Kessler et al., 2001). The effect of cognitive factors (i.e., attitudes and beliefs) on treatment-seeking decisions in those who have not yet sought care, however, is less clear as this research is limited.

**Stigma.**

Stigma is a cognitive construct that is commonly studied in the context of mental health service use, and numerous studies have demonstrated an inverse relation between stigma and attitudes or intentions to seek treatment in unselected samples (for review, see Corrigan, 2004; Cooper, Corrigan, & Watson, 2003; Schomerus & Angermeyer, 2008). There is little research, however, assessing the degree to which stigma inhibits seeking mental health services once help is deemed necessary. Researchers have examined whether stigma is associated with service use in numerous cross-sectional, retrospective
studies. Alvidrez and Azocar (2010) note that the majority of these studies demonstrate significant negative relations between stigma and past service use (e.g., Diala et al., 2000; Masuda et al., 2012; Mojtabai, 2010; Rusch, Kanter, Manos, & Weeks, 2008; Wrigley, Jackson, Judd, & Komiti, 2005), but they also cite several studies that failed to find significant associations (e.g., Alvidrez & Azocar, 1999; Comptom & Esterberg, 2005; Cooper et al., 2003; Golberstein et al., 2008; Komiti et al., 2006; Nadeem et al., 2007).

One explanation for the discrepant findings is that stigma is multi-dimensional. For example, in a non-clinical, undergraduate sample, self-stigma, but not perceived public stigma, was significantly and negatively associated with recent service use (Eisenberg, Downs, Golberstein, & Zivin, 2009). Additionally, the effect of stigma may be moderated by variables such as age (Sirey et al., 2001), gender (Doherty & O’Doherty., 2010; Hoyt, Conger, Valde, & Weihs, 1997), or ethnicity (Abdullah & Brown, 2011). Groups traditionally low in treatment-seeking (i.e., individuals who are younger, lower SES, lower education, or an ethnic minority) generally report higher stigma ratings (Alvidrez & Azocar, 1999; Barney et al., 2006; Chen & Mak, 2008; Eisenberg et al., 2009). Public stigma ratings are significantly lower in primary care settings compared to mental health settings (Abe-Kim & Takeuchi, 1996). Attenuated stigma in a primary care setting likely explains the preference by many individuals to receive mental health care from their PCP, and, in fact, those with higher ratings of self- and perceived public-stigma are more likely to seek depression care from a PCP than mental health professional (Barney et al., 2006).
It is evident that stigma is relevant to a discussion of mental health treatment and service use. One in four individuals in need of services reported fear of stigma as a significant barrier to seeking help (Kessler et al., 2001), and as many as 30% of individuals with a diagnosis of obsessive-compulsive disorder reported not seeking treatment primarily due to fear of public stigma (Goodwin, Koenen, et al., 2002). Longitudinal studies, however, have demonstrated no predictive effect of stigma concerns on subsequent service use in clinical (Jorm et al., 2000; Stecker & Alvidrez, 2007) or non-clinical (Golberstein et al., 2009) samples. In a study of individuals with depressive symptoms, those with concerns about stigma (regarding affects on employment) were 24% less likely to report mental health care use at six months (Roeloffs et al., 2003). Stigma concerns, however, did not significantly predict use of therapy or antidepressant medication after including symptom severity, physical illness, and sociodemographic factors in the model.

*Insight and knowledge.*

Lack of disorder recognition may be another critical, cognitive barrier to seeking appropriate mental health care (Jorm, 2011). Several studies have demonstrated that adolescents and adults who accurately labeled depression in a vignette were more likely to recommend seeking mental health treatment than those who were unable to identify depression (e.g., Jorm, Christensen, & Giffiths, 2006; Wright, Jorm, Harris, & McGorry, 2007). Accurate identification of depression was the only significant variable in predicting recommendations to seek help in a sample of older adults (Gum, Arean, & Bostrom, 2007). These results suggest that the ability to recognize that one is
experiencing a mental disorder is principle in perceiving a need for help and subsequently seeking treatment.

Unfortunately, disorder identification appears to be a major hurdle for many individuals. In a vignette study, approximately 80% of university undergraduates could correctly label social phobia, obsessive compulsive disorder, and major depressive disorder but had significant difficulties in identifying panic disorder and generalized anxiety disorder (Coles & Coleman, 2010). While the students were generally able to label the disorders, less than 12% of the respondents identified the disorders as a psychiatric illness (with the exception of obsessive-compulsive disorder, which 50% attributed to mental illness), and the vast majority of students did not recommend treatment for any of the anxiety disorders. There is evidence that older adults in particular have difficulty with disorder identification (e.g., Gum, McDougal, McIlvane, & Mingo, 2010; Klap, Unroe, & Unutzer, 2003) and may view symptoms as a normal part of aging, which do not need to be addressed with treatment (Sarakisian, Lee-Henderson, & Magnione, 2003). Although Gum et al. (2010) found that fewer than 50% of older adults were able to accurately identify MDD in an open-answer vignette study, they found evidence that the respondents were more likely to label depression when it was suggested as a causal possibility and nearly 40% expressed a recommendation of seeking professional help in that case. However, only 12% of respondents recommended seeking help from a mental health professional versus 30% who recommended a PCP. Disorder identification and perceived need for treatment are influenced by several disorder characteristics including: a) symptom onset, b) symptom severity, c) comorbidity, and d)
functional impairment.

**Symptom onset.**

Findings from epidemiological studies indicate that treatment-seeking is significantly more delayed in disorders with earlier onset versus later onset (i.e., childhood and adolescence; Green et al., 2011; Kessler, Olfson, & Berglund, 1998; Kessler et al., 2005; Wang et al., 2004). In a sample of individuals with depressive symptoms, later age onset of symptoms differentiated those who had previously sought professional care from those who had not (Gaulbaud du Fort, Newman, Boothroyd, & Bland, 1999). Theoretically, if symptoms are present early in life, these symptoms are likely incorporated into one’s sense of self or personality in a way that may preclude disorder identification or the interpretation that treatment is necessary or possible. In a treatment-seeking sample for obsessive-compulsive disorder, earlier onset of symptoms was found to be associated with poorer illness insight as well as longer delays in treatment-seeking compared to those with later symptom onset (Belloch, Valle, Morillow, Carrio, & Cabedo, 2009). Two other studies, however, demonstrated no significant differences in age of onset between those with help-seeking behaviors and those without regarding treatment of obsessive-compulsive disorder (Beşiroğlu & Ağargün, 2004; Mayerovitch et al., 2003).

**Symptom severity.**

In addition to time of onset, insight into one’s illness and recognition that help is needed may be influenced by the severity of the psychological symptoms experienced. In older adults, the presence of ten or more symptoms tripled the odds of having sought
treatment in the past year (Nyunt et al., 2009), and similar findings exist for younger and middle-aged adults (Olfson & Klerman, 1992; Stead, Shanahan, & Neufeld, 2010). In a group of treatment-delayers, “My symptoms got too severe for me to handle” was the most commonly endorsed prompt for having sought treatment, endorsed by 66% of the sample (Thompson, Hunt, & Issakidis, 2004). Symptom severity accounted for significant variance in past service use while none of the sociodemographic factors was significant in a Finnish epidemiological survey model (Hämäläinen et al., 2004).

Regarding depression specifically, episodes of greater severity (Dew, Dunn, Bromet, & Schulberg, 1988; Mojtabai & Olfson, 2006), duration (Kendler, 1995), and frequency (Arria et al., 2011; Dew, Bromet, Schulberg, Parkinson, & Curtis, 1991) are associated with increased rates of past service use compared to presentations with lower severity, duration, or frequency. The number of depressive symptoms experienced was positively predictive of service use in a longitudinal study with an unselected sample as well (Golberstein et al., 2009).

*Comorbidity.*

In accord with symptom severity, increased diagnostic comorbidity appears to facilitate one’s perceived need for treatment and is also associated with increased treatment-seeking (Andrews et al., 2001; McWilliams, Cox, Enns, & Clara, 2006; Teesson et al., 2009; Thoits, 2011). Findings suggest, however, that the number of disorders present may not be the most important factor in prompting service use but instead the nature of the symptoms experienced. Specifically, in an epidemiological survey study of those with a lifetime depressive illness, the number of comorbid
diagnoses present did not differentiate those with a history of treatment-seeking from those with no history of treatment-seeking, but these individuals did differ in which comorbid disorders were present (Gaulbaud du Fort et al., 1999). A history of treatment-seeking was significantly more prevalent when comorbid mania, phobia, panic disorder, generalized anxiety disorder, or obsessive-compulsive disorder was present and less prevalent when substance abuse or dependence was present. The association of increased service use with affective disorders and decreased service use with substance abuse disorders has been demonstrated in several studies (Hunt & Eisenberg, 2010; Jagdeo et al., 2009; McWilliams et al., 2006; Slade et al., 2009; Teesson et al., 2009).

In a 5-year longitudinal study, the presence of a personality disorder nearly tripled the odds of seeking treatment among a sample of women with elevated eating pathology (Keel et al. 2002), and in a sample of treatment-seeking individuals, those with personality disorder diagnoses (i.e., borderline, avoidant, or obsessive-compulsive personality disorder) were more likely than those with major depressive disorder alone to receive individual therapy over a three year prospective study (Bender et al., 2006). Individuals with borderline personality disorder, specifically, were nearly 5 times as likely to report a history of individual psychotherapy (OR = 4.66) or psychiatric hospitalization (OR = 5.00) relative to individuals with major depressive disorder (Bender et al., 2001), perhaps due to the severity or type of symptoms experienced. From these findings, it appears that the experience of certain symptoms may be particularly influential in one’s recognition of need and decision to seek treatment.
Impairment.

The experience of increased symptoms is likely also related to functional impairment, deteriorations in physical health, and stressful life events; all factors that may increase disorder identification and treatment-seeking. Researchers report that, in addition to symptom severity, functional impairment accounts for significant variance in treatment-seeking for alcohol abuse (Tucker, 2001), posttraumatic stress disorder (Koenen, Goodwin, Struening, Hellman, & Guardino, 2003; Lewis et al., 2005), obsessive-compulsive disorder (Belloch et al., 2009; Beşiroğlu & Ağargün, 2004), eating disorders (Cachelin, Striegel-Moore, & Regan, 2006), and depression (Ireys, DeVer, & Chernoff, 2001). Functional impairment, physical well-being, and somatic complaints significantly predicted service use in several longitudinal studies (Albizu-Garcia et al., 2001; Phillips & Murrell, 1994; Sherbourne, 1988; ten Have, Vollbergh, Bijl, & Ormel, 2002). When entered into a model with psychological distress, however, physical health and functional impairment no longer accounted for significant variance in treatment-seeking (Mojtaibai & Olfson, 2006; Parslow & Jorm, 2000).

Subjective distress was the only highly and consistently predictive factor of service use across all syndromal spectra in a 20-year longitudinal study (Angst et al., 2010). Similarly, researchers reported non-specific psychological distress to be the most consistent significant multivariate predictor of all types of service use, above and beyond all other pre-disposing, enabling and need factors in an Australian epidemiological survey sample (Mills et al., 2011), a finding also reported in a longitudinal study of older adults (Phillips & Murrell, 1994). It appears that elevated psychological distress may facilitate
disorder identification and certainly increases one’s perception of treatment need. According to data from the National Comorbidity Survey-Replication, low perceived need was the most commonly reported barrier to treatment across levels of severity, and perception of need was significantly and positively associated with symptom severity of psychopathology (Mojtabai et al., 2011).

**Bias and autonomy.**

Even when individuals can correctly recognize a disorder and recommend professional help to others, there is evidence that they are less likely to believe they would need help in the same situation. Large epidemiological studies in both the United States and Australia reveal that the vast majority of respondents who report a serious mental illness also report no need for treatment (Andrews et al., 2001; Kessler et al., 2001; Slade et al., 2009). This trend is particularly evident in men (see Addis & Mahalik, 2003) and those with substance use disorders (Andrews et al., 2001). One’s perceived need for treatment is likely influenced by beliefs in personal resources as well as the value placed on self-reliance. By example, individuals diagnosed with posttraumatic stress disorder who did not seek treatment often endorsed the belief “I can handle it on my own,” and this belief was significantly negatively predictive of their self-reported treatment readiness (Koenen et al., 2003). The same finding was replicated in samples of non-treatment-seeking individuals with elevated symptoms of obsessive-compulsive disorder (Goodwin, Koenen, et al., 2002) and young adults experiencing suicidal ideation (Arria et al., 2011). Findings from the National Comorbidity Survey indicated that 72% of individuals with a serious mental illness did not seek treatment due to a desire to solve
the problem independently (Kessler et al., 2001), a finding common in epidemiological survey studies (Andrews et al., 2001).

The notion of coping with distress independently is especially strong in older adults (Pearlin & Schooler, 1978). The idea of “pulling yourself up by your bootstraps” was regularly endorsed in a sample of those over the age of 65 and experiencing depressive symptoms; however, actual service use by these individuals was not assessed (Switzer, Wittink, Karsch, & Barg, 2006). Unfortunately, placing a high level of value on autonomy is likely to inhibit both initially seeking treatment as well as receiving an adequate does of treatment. In a study of factors related to delays in treatment-seeking, 68% percent of those who eventually sought professional treatment reported that they did not get as much help as they needed, and the majority (56%) cited “I preferred to manage myself” as the reason that they did not receive adequate aid (Green et al., 2011).

Perceptions of treatment benefits.

While some individuals delay treatment in the belief that symptoms will remit naturally or can be managed independent of professional help, evidence suggests that beliefs about treatment efficacy also influence one’s decision to seek mental health care. “I thought it would go away by itself” and “I thought nothing could help” were the most commonly endorsed reasons for treatment delay among those receiving treatment in specialty anxiety clinic (Thompson et al., 2004), and negative beliefs about the efficacy or usefulness of treatment are frequently associated with decreased intentions to seek mental health care (Carlton & Deane, 2000; Kuhl, Jarkon-Horlick, & Morrisey, 1997; Vogel & Wester, 2003; Wilson & Deane, 2010a). Individuals who believe that their
symptoms are untreatable—more likely in disorders with early onset, such as dysthymia (Svangord, Rosso, Lutzen, Wistedt, & Baarnhielm, 2009) and obsessive-compulsive disorder (Belloch et al., 2009)—may simply not view treatment as a beneficial pathway to symptom alleviation. Among a sample of young adults experiencing suicidal ideation, 36% reported not seeking treatment because they believed that it would not help (Arria et al., 2011). In those with significant depressive symptoms, beliefs about intervention efficacy significantly predicted the length of delay to initiating service use when the intervention considered was use of an antidepressant medication; a significant effect, however, was not found for seeking treatment from a PCP or mental health professional (Jorm et al., 2000). Little other research exists examining how expectations of treatment efficacy predict future service use, particularly for those who have never received treatment.

This research comes together to suggest that one’s perceived need for treatment may be influenced by both the recognition of distress as well as a belief in the usefulness of external help. The knowledge and beliefs that an individual has regarding mental illness and treatment efficacy appear to have a strong influence on the perceived need and utility of treatment for oneself. The research demonstrates, though, that this only accounts for a portion of the variance in treatment-seeking intentions, as with situational factors, suggesting yet additional factors are influential. Evidence for the role of fear, uncertainty, and avoidance in the reluctance to seek treatment provides another avenue in examining treatment-seeking.
Avoidance.

Avoidance has been defined as efforts that function to reduce contact with aversive experiences in emotional, interpersonal, and behavioral contexts, and findings indicate that avoidance may be influential in decisions related to treatment-seeking. Specifically, avoidance of negative treatment outcomes, emotions associated with the treatment-seeking process, or potential reactions by others may inhibit seeking mental health services when in need. Theoretically, the avoidance of treatment due to perceived negative consequences serves as a barrier for many individuals experiencing mental distress, and those with more chronic avoidant propensities in emotion regulation and interpersonal interactions may be at greatest risk.

Model of avoidance.

Increased attention has been devoted to the role of avoidance in treatment-seeking in recent years, and Biddle and colleagues developed the Cycle of Avoidance (COA) model to help explain delays in treatment-seeking (Biddle, Donovan, Sharp, & Gunnell, 2007). The model was developed following interviews with 23 distressed, non-treatment-seeking, young adults. According to Biddle and colleagues, the COA begins with a denial or avoidance of the severity of distress that one is experiencing. In this phase, the individual engages in repeated attempts to normalize and cope with the increasing distress, resulting in a shift of beliefs to include more severe symptoms as a part of normal experiences. Treatment is not sought until a crisis threshold is crossed and the severity of distress is acknowledged, which may occur following a singular crisis (e.g., suicide attempt), action of external agency (e.g., intervention by others), or self-
realization.

Although the COA model provides a credible account of the behavioral avoidance that may delay treatment-seeking, the model delineates few specific factors that individuals are avoiding. Vogel, Wester, and Larson (2007) presented a brief review of several constructs strongly tied to avoidance in the treatment-seeking process and noted the relevance of treatment fears, social norms and stigma, fear of emotion, and self-disclosure discomfort as experiences that might be associated with avoidance. These constructs vary in that some (e.g., treatment fears, social stigma, social norms) are widely applicable to treatment-seeking considerations while others (e.g., fear of emotion, self-disclosure discomfort) are psychological variables that may increase a given individual’s tendency to engage in more generalized avoidance.

**Fears of treatment.**

Substantial evidence links fears of treatment to treatment-seeking. Treatment fears are generally comprised of an individual’s negative expectations of treatment interactions and may include fears of coercion or judgment by the treatment provider, institutionalization, or judgment from others as a consequence of service use. Early research examining treatment-seeking revealed that fears regarding the treatment process (e.g., therapist responsiveness, coercion concerns) were associated with reduced treatment-seeking behavior, including attitudes, intentions, and service use (Amato & Bradshaw, 1985; Deane & Chamberlaine, 1994; Kushner & Sher, 1989; Pipes, Schwarz, & Crouch, 1985).
Individuals may also avoid seeking treatment for fear of disapproval related to treatment-seeking and mental health stigma. As noted previously, both public- and self-stigma regarding mental illness are negatively associated with one’s willingness to seek mental health treatment (Barney, Griffiths, Jorm, & Christensen, 2006; Belloch et al., 2009; Biddle et al., 2007; Cooper et al., 2003; Deane & Chamberlaine, 1994; Rochlen, Mohr, & Hargrove, 1999; Vogel et al., 2006), and an individual will likely be reluctant to seek services if he or she fears negative judgment from social network members. In epidemiological survey data, reported fears of criticism or shame for seeking treatment by family or friends was associated with decreased service use by those in need (Diala et al., 2000), and women reported that anticipation of upsetting a family member was a significant barrier to seeking treatment (Leaf, Livingston, & Tischler, 1986).

One’s fear of social stigma and treatment are likely reduced when one experiences social support and approval regarding service use. Specifically, encouragement from others to seek appropriate care has been linked to mental health service use (Kelly et al., 2004; Tucker, 2001). Three quarters of university students reported past service use to be prompted by another person in their social network (Vogel, Wade, Wester, Larson, & Hackler, 2007), and Dew and colleagues (1991) used discriminant analysis to demonstrate that individuals with depressive symptoms were significantly more likely to seek treatment if prompted by a friend or family member, suggesting encouragement from social support network members may be a critical component to treatment-seeking. In a sample of treatment-seeking men, 96% reported treatment-seeking decisions to be influenced by the encouragement of others, and 37% reported that they would not have
sought treatment without the urging of others (Cusack, Deane, Wilson, & Ciarrochi, 2004). In this study, men reported that their intimate partners were the most common and the most influential resources in encouraging treatment-seeking, followed closely by PCPs.

Similarly, past treatment use by members of one’s social network is likely to increase perceptions of social acceptability and approval. Individuals in an epidemiological survey study who knew someone with a history treatment-seeking reported more positive attitudes and intentions to seek treatment themselves compared to those with no examples of treatment use in their social network (Tijhuis, Peters, & Foets, 1990). Similarly, in a sample of treatment-seekers, treatment fears were lower in those who had a family member with past mental health service use (Zartaloudi & Madianos, 2010). These results indicate that if one anticipates approval of service use by their social network, treatment fears and avoidance may be lower such that he or she is more likely to seek help—a finding supported by Bayer and Peay (1997) and Vogel, Wei, and Boysen (2005).

**Treatment fears and symptoms severity.**

Fears and concerns regarding treatment (e.g., fears of therapist responsiveness, coercion, stigma) are shown to increase linearly with psychological distress (Deane & Chamberlaine, 1994; Kushner & Sher, 1989, 1991). Increased symptom severity is associated with heightened fears and, therefore, would suggest an increase in the likelihood of avoidance of treatment as well. However, as noted previously, symptom severity and subjective distress are positively linked with treatment-seeking in these same
studies. These results may indicate that as the need for treatment becomes more obvious so do the potential risks, leading to increased fear. While fears regarding the risks of treatment may prevent seeking services when distress is low (and treatment might be most effective), at higher levels of symptom severity, the possibility of alleviating distress may be sufficiently alluring (or necessary) to overcome fears.

Vogel et al. (2005) found that both the anticipated benefits and risks of treatment uniquely predicted treatment-seeking following a distressing life event. The anticipated benefits one may consider include distress reduction, increased positive affect, and interpersonal support while the potential risks include fear of stigma (e.g., violating social norms), fear of violating gender norms, disclosure embarrassment, and interpersonal vulnerability (Vogel & Wester, 2003). The delicate balance of perceived benefits and risks undoubtedly is central to most individuals’ treatment-seeking decisions. Vogel and colleagues (Vogel et al., 2005) suggest that the avoidance of risks explains how some individuals can recognize a need and potential benefit from help and still not engage in treatment. It is likely that one’s weighting of benefits and risks is influenced by certain personality traits and coping tendencies that lead an individual to be more or less risk-averse and generally avoidant.

**Avoidance of emotion.**

Investigation into traits typically related to avoidant emotional responding and behavior may be useful in understanding more about those individuals who, despite considerable psychological distress, find the risks of treatment to outweigh the benefits. Research addressing the individual variables that may influence one’s decision to pursue
or avoid treatment, however, is limited in scope. At this point, data exists linking the avoidance of emotional experience and disclosure with general avoidance and reduced service use.

Individuals who demonstrate avoidance of emotion report a decreased likelihood of seeking treatment if faced with distress, even in hypothetical predictions of future behavior (e.g., Ciarrochi & Deane, 2001; Komiya, Good, & Sherrod, 2000). Associations between higher levels of restrictive emotionality and reluctance to seek help are particularly strong in men (Cusack, Deane, Wilson, & Ciarrochi, 2006; Robertson & Fitzgerald, 1992; Simonsen, Blazina, & Watkins, 2000). This research suggests that individuals who are not comfortable or skilled at handling emotion may not seek treatment in an effort to avoid distressing emotional experiences. Ciarrochi and Deane (2001) examined the effect of emotional competence on treatment-seeking intentions in adolescents and found that individuals high in the ability to manage self-relevant emotions were less likely to have sought previous help from a mental health professional. These individuals, however, also reported a higher willingness to seek help in the future compared to those rated as less emotionally competent; this effect held even after controlling for hopelessness and gender. According to these findings, emotional competence may decrease one’s need for treatment and simultaneously increase the willingness to engage in treatment when necessary. This provides support for the contention that individuals who are more avoidant of emotion may be in higher need of treatment and also less willing to seek professional help.
Avoidance of emotional disclosure.

An additional barrier may be experienced by those who are able to recognize distress but do not feel comfortable or able to relay this distress to those around them. Specifically, researchers have begun to examine how the avoidance of emotion in interpersonal contexts may hinder treatment-seeking. The literature shows that those with attachment avoidance (i.e., a negative internal working model of others and need to be self-reliant) are less willing to seek treatment than those with attachment anxiety (i.e., a positive working model of others and fear of rejection; Lopez, Melendez, Sauer, Berger, & Wyssmann, 1998; Vogel et al., 2005). These findings indicate that individuals who are not comfortable with interpersonal interactions or emotional disclosures may be particularly hesitant to engage in psychotherapy.

The impact of ease of disclosure, one’s ability to disclose personal information to another person, on treatment-seeking, particularly from a mental health specialist, is likely considerable. Individuals who experienced greater situational discomfort with emotional disclosure reported fewer positive attitudes regarding treatment (Komiya et al., 2000), and those who expressed discomfort discussing personal issues with a professional were five times less likely to seek treatment than those who were more comfortable (Diala et al., 2000). In a sample of young adults receiving treatment for serious psychopathology, stronger avoidant tendencies were associated with greater rejection of treatment providers, less self-disclosure to providers, and poorer use of treatment (Dozier, 1990). Similarly, a tendency to conceal personal information was associated with less positive attitudes regarding treatment and lower intentions to seek treatment in the future.
(Kelly & Achter, 1995), and researchers reported frequent self-concealers were three times less likely to have sought treatment for an emotional problem in the past than those low in concealment (Cepeda-Benito & Short, 1998).

Vogel and Wester (2003) examined the effect of self-disclosure on attitudes towards seeking psychological help in conjunction with several other relevant variables. They found that one’s tendency to self-disclose distressing information, as well as one’s perceived risks and benefits of disclosing to a counselor, accounted for variance in attitudes towards seeking professional psychological help. These disclosure factors, along with previous treatment status, were found to be the only significant predictors of attitudes toward treatment-seeking. Unexpectedly, perceived social support, psychological distress, and biological sex were not found to be significant in this model despite considerable past research demonstrating the influence of these variables. These results suggest that the avoidance of emotional or personal disclosure may be more relevant than many previously studied factors.

Low disclosure has been a particularly salient problem in certain disorders that have high levels of stigma such as postpartum depression. Dennis and Lee (2006) completed a literature review on postpartum depression and found that women commonly reported an inability to disclose their symptoms to both family members and health professionals. A primary implication of these findings may be that discomfort in disclosure not only inhibits treatment-seeking from a mental health professional but also disrupts an individual’s reliance on social support.
**Disclosure and social support.**

Unfortunately, decreased social support is an additional risk factor for psychopathology and the need for treatment. Researchers have found that reliance on social support is frequently an initial pathway used in attempts to cope with emotional distress. University students reported that they would be more likely to seek help from friends and family than a professional (Wilson & Deane, 2010b), and Horowitz (1977) found that individuals talked to an average of four social network members about concerns before seeking professional help. Individuals with weaker social support networks are more likely to seek professional help (Birkel & Reppucci, 1983; Bosmajian & Mattson, 1980; Goodman, Sewell, & Jampoll, 1984; Linn & McGranahan, 1980; Sorgaard et al., 1998). Additionally, single individuals have been found to hold more positive attitudes towards help-seeking (Mackenzie et al., 2006), and never-married individuals are more likely than married individuals to seek help from a mental health professional (Kessler et al., 2005).

It appears that the relation between social support and treatment-seeking is reliant on the quality of the support in addition to the number of support members. Individuals with low perceived social support were nearly twice as likely to seek care from a mental health professional relative to those with social support perceived to be adequate in an epidemiological survey (ten Have et al., 2002). In a large random sample, individuals who found talking with a spouse about an emotional problem to be helpful were 73% as likely to have sought treatment from a PCP for emotional distress than those who spoke with a spouse but did not find it to be helpful (Sorgaard et al., 1999). Importantly,
Longitudinal studies have found that both the number of supportive relatives one reports (Albizu-Garcia et al., 2001) and perceived social support (Phillips & Murrell, 1994; ten Have et al., 2002) are negatively predictive of future mental health service use, though the effect for perceived support is much larger than for the number of contacts available.

These results indicate that those able to take active, approach-oriented steps to seek-out social support from a network that can offer strong support are less likely to report needing treatment, at least initially. Those at highest risk for not seeking appropriate treatment, therefore, may be those who are not comfortable or able to access sufficient social support. When social support is perceived to be inadequate (or avoided) during times of distress, individuals may increase treatment-seeking behaviors (Powell & Kotschessa, 1995). While this is likely true for many individuals, Collins and Feeney (2000) found that individuals high in behavioral avoidance use more indirect strategies to obtain social support and do not seek additional support when experiencing increases in emotional distress, supporting the notion that individuals who frequently engage in avoidant behavior may be particularly unlikely to access social support to cope with distress. These findings collectively indicate that individuals with weaker social support networks, perhaps due to avoidant patterns of social interaction, are likely to be in higher need of mental health treatment. Finally, social support has an indirect role on treatment-seeking such that low social support first contributes to higher distress, and elevated distress increases the likelihood of seeking professional help (Vogel & Wei, 2005). This evidence suggests a strong role of avoidance in emotional experience and interpersonal disclosure on treatment-seeking.
Interventions

Given the prevalence of mental health disorders, the limited use of treatment services, and the serious costs associated with untreated illness, efforts have been made to develop interventions that increase knowledge and positive attitudes toward mental health treatment in the population at-large. Numerous psychoeducational interventions have been shown to improve attitudes regarding those with mental health difficulties (for review, see Corrigan, 2012; Corrigan & Gelb, 2006; Nelson & Barbaro, 1985; Parcesepe & Cabassa, 2012; Schomerus & Angermeyer, 2008). Social stigma related to mental illness and treatment is the primary target of such interventions, which include formal and comprehensive programs as well as books, videos, audio recordings, advertising, and commercials; Corrigan (2004) notes that several psychoeducational interventions specifically addressing stigma have been efficacious in various populations (e.g., Corrigan et al., 2001; Holmes, Corrigan, Williams, Canar, & Kubiak, 1999; Keane, 1990; Morrison, Cocozza, & Vanderwyst, 1980; Penn, Guynan, Daily, Spaulding, Garbin, & Sullivan, 1994; Pinfold et al., 2003). Psychoeducational interventions that allow participants to ask questions, share experiences, and participate in experiential exercises are considered to be particularly effective in changing attitudes (Stuhlmiller, 2003). Vogel and colleagues (2007) review additional evidence suggesting that using psychoeducational interventions that normalize symptoms (Schreiber & Hartrick, 2002) and provide hope for symptom improvement (Mann & Hämäläinen, 2004; Rosen, 2003) may decrease internalized stigma and increase treatment-seeking intentions.
Few interventions, however, have been developed with a direct aim to increase service use by those in need. In a systematic review of randomized controlled trials of interventions to increase help-seeking (attitudes, intentions, and/or behaviors) for depression, anxiety, and general psychological distress, Gulliver, Griffiths, Christensen, and Brewer (2012) identified six relevant studies, three of which assessed service use following intervention (i.e., Christensen, Leach, Barney, Mackinnon, & Griffiths, 2006; Costin et al., 2009; Sharp, Hargove, Johnson, & Deal, 2006). In only one study (Christensen et al., 2006) did the intervention predict a significant improvement in help-seeking behavior at post-test, and the effect was relatively small ($d = .24$). In this study, researchers examined the effectiveness of two web-based interventions with participants who reported high depressive symptoms on a community survey. Individuals randomized into a cognitive-behavioral therapy (CBT) skills training website intervention reported using significantly more CBT skills than those receiving the psychoeducation intervention at post-treatment assessment. This difference between the two groups in regards to actual service use with a mental health professional was marginally-significant ($p = .07$) in favor of the CBT skills intervention.

The other two studies that measured actual service use as an outcome variable did not find significant main effects for the interventions tested. It is not clear if the interventions were ineffective or the methodology prevented identification of an effect. In a test of an internet intervention (i.e., brief e-card invitations to seek treatment) with a sample of individuals with high depressive symptoms who responded to a community survey, researchers did not exclude individuals already receiving treatment from study
participation or analyses (Costin et al., 2009). In the second study, researchers tested a classroom-based psychoeducation seminar in an unselected sample of undergraduate students seeking to fulfill psychology course requirements. The intervention was found effective at increasing positive attitudes toward treatment; no difference in overt treatment-seeking behaviors was found (Sharp et al., 2006), but it is not evident that treatment was relevant given the non-clinical sample. It is likely that the sampling issues in these studies (i.e., inclusion of participants already in treatment or not in need of treatment due to low psychological distress) may have prevented identification of any effect of intervention.

Several studies aimed at increasing service use in unselected samples of high school students produced similar findings (King, Strunk, & Sorter, 2011; Santor, Poulin, LeBlanc, & Kusumakar, 2007; Wilson, Deane, Marshall, & Dalley, 2008). Each of these studies demonstrated significant effects of intervention on attitudes and intentions to seek treatment, generally through psychoeducation, although an increase in service use was found in only one study. In this study, students reported on service use eight months after receiving two 1-hour, in-class educational sessions focused on enhancing symptom recognition and help-seeking pathways (Santor et al., 2007). Students in the experimental intervention group reported more mental health visits to the school health clinic at follow-up relative to students who received no intervention, and the intervention was found to account for 25% of the variance in the model. Interestingly, the authors found that levels of distress moderated the relationship between the intervention and service use, controlling for gender. As expected, those with higher levels of distress were
more likely to seek treatment following the intervention than those with lower levels of distress. The addition of ‘mood problems’ to the model of treatment-seeking indicated that this variable accounted for a further 75% of explainable variance in mental health visits, even after accounting for the variation attributed to the intervention.

Notably, the efficacy of the intervention in the Santor study was not impacted by attitudes toward mental health or treatment. Specifically, although the intervention did increase positive attitudes toward treatment-seeking, this change in attitude did not moderate the relationship between receipt of the intervention and future treatment-seeking, suggesting that attitudes towards mental health and treatment may not be as critical as identifying and intervening with those individuals experiencing high distress. Jorm and colleagues (2003) came to similar conclusions. In a study aimed to increase mental health literacy, an unselected sample of community participants with mild depressive symptoms were randomized to receive an experimental consumer guide (outlining the efficacy of 45 intervention options) or a basic brochure (providing general mental illness education). Researchers found the experimental consumer guide predicted significant increases in mental health literacy (i.e., attitudes and beliefs) at follow-up, but did not differentially predict actual service use. A high rate of attrition (near 80%) and low symptom levels in the sample make it difficult to interpret the results in this study. These findings, together, demonstrate the potential efficacy of intervening to increase service use, particularly with a clinical sample. The findings also indicate that attitude change may not be the most beneficial target for intervention development. Alternatively, interventions aimed at modifying other malleable factors relevant to
treatment-seeking (e.g., identification of need, comfort with disclosure, reliance on social support, treatment fears) may be beneficial.

**Gaps in the Literature**

The current literature base related to treatment-seeking is substantial and highlights the influence of several variables (e.g., perceived need, symptom severity, social support, avoidance) that impact the likelihood of engaging the mental health community when appropriate. Nonetheless, significant gaps in the literature remain, and restrict the ability to sufficiently address potential deterrents to seeking appropriate mental health treatment. Based on my review, I have identified three areas for potential improvement in the treatment-seeking literature. First, although analogue studies can serve as a useful starting point in understanding treatment-seeking decisions, too many studies in this area have failed to sample from the population of those most in need of mental health treatment *when* treatment is still needed. Second, and relatedly, measuring intentions to seek treatment only provides an approximation of the dependent variable of interest and limits insight into objective treatment-seeking behavior. Finally, the research aimed at increasing treatment-seeking behavior for those most in need (i.e., intervention literature) is under-developed.

**Representativeness of participants.**

The vast majority of previous research examining treatment-seeking variables has been completed with concurrent or retrospective designs. Researchers commonly obtain data from individuals who have sought treatment after some delay. By assessing participant characteristics and self-reported barriers to accessing care, researchers can
garner retrospective information about factors that may have prolonged the initiation of treatment. While this method provides insight into what individuals recall to be some of the most salient barriers, the data collected is retrospectively reported after the initiation of treatment and, thus, is especially vulnerable to errors of memory and bias. More problematically, the sample is ultimately a treatment-seeking sample and does not target those in need of treatment who have not yet decided to seek help (or have decided not to seek help). As such, factors related to complete service refusal or the decision that treatment is not appropriate may be lost through use of this methodology.

Although a non-treatment-seeking clinical sample is clearly challenging to accrue, it is only by sampling this population directly that researchers can identify the constructs pertinent to treatment-seeking for those unlikely to access services on their own in times of elevated distress. Prospective designs are needed to identify individuals before they have decided to seek treatment and to follow them over time, allowing for the identification of factors predictive of service use. Only a handful of such studies have been completed (e.g., Albizu-Garcia et al., 2001; Angst et al., 2010; Golberstein et al., 2009; Jorm et al., 2000; Phillips & Murrell, 1994; Sherbourne, 1998; ten Have et al., 2002; Vogel et al., 2005). In these studies, researchers followed participants anywhere from 3 months to 20 years with a varied range of assessment points, and the samples were comprised of individuals from university and community settings. Results from these studies provide some of the richest and most relevant information about the variables related to treatment-seeking. Findings from prospective studies are often in contrast to the findings of retrospective or concurrent studies as well as those employing
non-clinical samples, suggesting the importance of prospective design with individuals that develop or have a need for services and have not yet sought help.

**Indirect measurement of treatment-seeking.**

A second limitation of the current treatment-seeking literature is that service use has not been measured consistently or even directly. Much of the research examining constructs related to mental health literacy and treatment-seeking assesses treatment-seeking indirectly, either through assessments of intentions to seek services or attitudes toward mental health treatment. In these studies, often completed with unselected, non-clinical samples, participants rate intended behaviors (i.e., the likelihood of seeking help from a professional) in the case of hypothetical or future distress, and even studies with a clinical sample often use attitudes toward treatment and/or intentions to seek help as the primary outcome variable. The research on attitudes toward mental illness is vast (for review, see Angermeyer & Dietrich, 2006), but the effect of attitudes on actual service use by those in need is unclear. Research demonstrates that one’s attitudes toward help-seeking and treatment is positively associated with past service use (ten Have et al., 2010; Vogel & Wester 2003; Vogel, Wester, Wei, & Boysen, 2005) as well as intentions to seek mental health services in the future (Cepeda-Benito & Short, 1998; Kelly & Achter, 1995; Mackenzie et al., 2006; ten Have et al., 2010; Vogel & Wester, 2003). Unfortunately, as many of the prospective studies were gathered from larger epidemiological survey studies, attitudes regarding mental health service use were not measured and, therefore, were not be examined in relation to future service use.
In two prospective studies in which an assessment of attitudes was included, findings offer no support for the prediction of service use. Jorm and colleagues (2000) found that attitudes at baseline did not predict service use in the following six months for individuals with high depressive symptoms at baseline; instead sociodemographic and psychiatric status variables accounted for the majority of the variance in service use. Further, although 93% of participants in the study said counseling was likely to be helpful for depressive symptoms in a vignette, only 15% used counseling in the next six months. Similarly, researchers found that perceived public stigma did not predict perceived need or actual service use over the next two years (Golberstein, Eisenberg, & Gollust, 2008).

Given these findings and the rich evidence base demonstrating the weak correlation between one’s predicted behavior and actual behavior (e.g. Ainslie, 1975; Buehler, Griffin, & Ross, 1994; Loewenstein & Lerner, 2003), using direct measurement of service use appears to be a more accurate and necessary assessment of treatment-seeking relative to intentions and attitudes as outcomes. Fortunately, service use is measurable, and longitudinal designs can be used to assess an individual’s treatment-seeking efforts after an initial evaluation of need for treatment and over time.

**Lack of intervention development.**

Likely as a result of limited knowledge about the most important predictors of treatment-seeking behavior (due to use of cross-sectional design and proxy outcome variables), researchers have been slow to develop interventions that increase appropriate service utilization. As noted above, the predominant focus of intervention studies to date has been on changing beliefs and attitudes regarding mental health and treatment at a
population level. These studies, while valuable in addressing stigma and social attitudes, do not directly intervene on barriers to treatment-seeking for those who are most likely to benefit from treatment. I identified very few studies that aimed to increase, and subsequently assessed, actual service use. Further, interventions thus far have been limited in scope, constrained primarily to psychoeducation and attempts to destigmatize mental health treatment, and these interventions have had limited success.

Continued research is needed to identify interventions that could be easily transferred into the most useful environments (i.e., those in which individuals with elevated psychological symptoms and without treatment present). There are several potential mechanisms through which interventions might be successful in increasing treatment-seeking behavior. For example, interventions that target barriers to treatment and increase access to professional services are likely to be most effective for those patients who would be willing to participate in treatment but struggle to find the ways to reach resources. Interventions focused on cognitive restructuring of fears related to participation in treatment, criticism from important others, or avoidance of emotional experiences are likely to be effective for individuals who know how to get treatment but doubt it will be helpful. Finally, interventions that educate potential patients about symptom recognition and treatment benefits might be effective for those who do not readily perceive a need for help. In assessment of any intervention, it is critical to assess objective treatment-seeking behavior (e.g., calling referral sources, completing screens) and treatment participation (e.g., reporting to first session) as opposed to intentions and attitudes.
Current Study

In the current study, I aimed to expand upon the current treatment-seeking literature by: a) examining the prediction of treatment-seeking behaviors in a clinically-relevant sample, and b) assessing the efficacy of direct intervention on service use in a clinical sample. Research regarding treatment utilization for mental illness reveals an infrequency of service use and myriad consequences associated with untreated mental illness. These disconcerting findings are aptly seen in depression where fewer than half of those with the disorder seek treatment (Kessler et al. 2009), and untreated symptoms are associated with significant interpersonal (Maxmen, 1986; Wells, Stewart, Hays, et al., 1989; Whisman & Bruce, 1999), functional (Beer & Beer, 1992; Martin, Blum, Beach & Roman, 1996; Stewart, Ricci, Chee, Hahn, & Morgenstein, 2003), and physical strain (Anda et al., 1993; Frasure-Smith, Lesperance, & Talajic, 1993; Jonas & Mussolino, 2000). These impairments are compounded when considering that untreated depression is associated with deficits in obtaining access to primary care services regarding a comprehensive range of health care (Druss, Rask, & Katon, 2008). Depression is strongly linked to many of the constructs associated with low treatment-seeking and negative attitudes regarding mental health, providing a strong rationale for examining the efficacy of treatment-seeking interventions in this population. Specifically, there is evidence to suggest that widespread negative attitudes and irrational beliefs associated with depression hinder one’s recognition of need for treatment (Angermeyer & Matschinger, 2005; Bland et al., 1997; Jorm et al., 1997; Roness, Mykletun, & Dahl, 2005; Wang et al., 2005a, b; for a review, see Gabriel & Violato, 2010). Although need
for treatment-seeking research with those experiencing significant depressive symptoms is evident, few researchers have specifically examined this population.

The current study was comprised of individuals experiencing high depressive symptoms and/or suicidal ideation. With use of a clinical sample that was not yet mental health treatment-seeking, I was able to directly examine the efficacy of intervention upon actual service use. Given the frequent use of psychoeducational interventions, I included this as one intervention arm in addition to an intervention arm in which only a referral to treatment was provided (to serve as control conditions). In comparison, I developed an experimental intervention that addressed avoidance as a barrier to treatment-seeking. To fully assess the effects of these interventions, I implemented a prospective, longitudinal design, which permitted an examination of the effects of preexisting constructs (e.g., attitudes, avoidance) as well as intervention on actual treatment-seeking behaviors.
Chapter 2: Method

Participants

The sample was comprised of 121 participants recruited from the Thomas E. Rardin Family Practice office, which is part of the Ohio State University Primary Care Practice-Based Research Network (OSU-PCPBRN). Upon arrival for a scheduled appointment, patients completed a screen for depression and those reporting clinically-significant depressive symptoms or suicidal ideation were invited to participate in the study. Participants were required to be at least 18 years old to participate and not be currently receiving combination treatment of both psychotherapy and antidepressant medication. There were no additional inclusion criteria or exclusion criteria. See Table 1 for all demographic information.

Measures

All measures used in the current study were previously established to have adequate validity and reliability. In the study sample, each measure demonstrated a Cronbach’s alpha of .80 or above. The following measures were administered to all participants:

Acceptance & Action Questionnaire (AAQ). The AAQ (Hayes et al., 2004) is a 9-item measure that assesses one’s willingness to accept undesirable thoughts and feelings while acting in a way that is congruent with one’s own values and goals. The
questionnaire uses a 7-point Likert scale; higher scores indicate a higher level of avoidance.

*Attitudes toward Seeking Professional Psychological Help (ATSPPH).* The ATSPPH (Fischer & Turner, 1970) is a 29-item scale measuring the extent to which people endorse the likelihood that they would seek psychological help. The scale aims to address four related constructs: a) recognition of need for help (Need), b) stigma tolerance (Stigma), c) interpersonal openness (Openness), and d) confidence in mental health practitioners (Confidence). The scale can be scored as a total score or as individual subscales with higher scores indicating more positive attitudes toward help-seeking.

*Beck Depression Inventory – 2nd Edition (BDI-II).* The BDI-II (Beck, Steer, & Brown, 1996) is a 21-item self-report instrument, which assesses the severity of symptoms of depression. Respondents describe the way they have been feeling during the past week by rating each item (e.g., sadness, pessimism, loss of pleasure) on a scale from 0 to 3. Thus, possible scores range from 0 (minimal depression) to 63 (high depression).

*General Help-Seeking Questionnaire (GHSQ).* The GHSQ (Rickwood, Deane, Wilson, & Ciarrochi, 2005) was developed to assess help-seeking intentions for a range of problems. The GHSQ has been amended to include two subscales. The Previous Help subscale is a total score for the number of sources from which one sought help (for an emotional or personal problem) in the past month. The Future Help scale uses a 7-point Likert scale, and the participant rates the likelihood that he or she will seek help in the
next month from a variety of sources (e.g., partner, friend, family, PCP, psychologist) with a higher sum across all sources indicating an increased likelihood of seeking help.

*Multidimensional Scale of Perceived Social Support (MSPSS).* The MSPSS (Zimet, Dahlem, Zimet & Farley, 1988) is a 12-item measure that addresses perceived social support through one’s perceptions of support from three major types of resources (i.e., friends, family, significant other) and uses a 7-point Likert-type scale with higher scores indicating a higher level of perceived support.

*Positive and Negative Affect Scale (PANAS).* The PANAS (Watson, Clark, & Tellegen, 1988) measures general affectivity with two subscales. Positive affect (PANAS-PA) is defined by the extent to which a person feels active and pleasurable engaged, while negative affect (PANAS-NA) is the extent to which a person feels subjective distress and unpleasantness. Each of the subscales includes 10 items and uses a 5-point Likert scales with higher scores indicating more frequent emotional experiences.

*Patient Health Questionnaire (PHQ-9).* The PHQ-9 (Kroenke, Spitzer, & Williams, 2001) is a nine item depression subscale from the Patient Health Questionnaire (Spitzer, Kroenke, & Williams, 1999). The measure was developed to assess symptoms and impairment related to depression. The scale uses a 0 - 3 scale with higher scores indicating elevated depressive symptoms.

*State Hope Scale (HOPE).* The HOPE (Snyder et al., 1996) assesses hopeful thinking, as reflected by Pathways and Agency subscales. The Pathways subscale reflects one’s perceived ability to produce successful avenues to a desired goal, and the Agency
subscale represents one’s confidence that he or she can initiate and sustain movement towards the desired goal. Respondents indicate the degree to which each of six statements applies to them at the present moment on a 1 (definitely false) to 8 (definitely true) Likert scale. Higher scores indicate more hopeful thinking.

Demographics Questionnaire. The demographics questionnaire used was created for the study and consists of several questions assessing general information regarding the participants’ age, sex, ethnicity, marital status, education level, and income. The questionnaire assesses current symptom onset, previous mental health diagnoses, and past suicide attempts. The questionnaire also includes items regarding previous treatment experience including type of treatment received, number of visits, and perceived helpfulness of treatment.

Follow-up Questionnaire. The follow-up questionnaire was created for the study to ascertain treatment-seeking behaviors (e.g., contact with a mental health professional or other source) that the participant engaged in following the baseline assessment and intervention.

Procedure

The procedure may best be understood from the viewpoint of the patient. Once a patient arrived at the primary care office, he received a PHQ-9 in the regular appointment intake packet from staff at the front desk. When the patient was taken to a private clinic room to begin his scheduled appointment, the medical assistant collected the completed PHQ-9. If the patient’s score was a 10 or above or indicated significant suicidal ideation (i.e., 2 or 3 on question 9), the PCP notified the patient of study eligibility and requested
consent to introduce him to a research assistant. If the patient consented to receiving more information, a research assistant (e.g., graduate or advanced undergraduate student) met with the patient following his appointment with the PCP. The meeting took place in a private, research room in the Rardin clinic. If the patient or research assistant was unavailable immediately following the PCP appointment, the research assistant called the patient and offered alternative meeting times.

Upon meeting with the patient, the research assistant presented the general aim and methodology involved in the study and asked the patient for consent to participate. If the patient agreed, he became a study participant and was given a BDI-II to complete. If the participant scored at a 9 or below on the BDI-II, the researcher discussed warning signs and symptoms of depression to monitor for and was provided a referral packet of available treatment resources for future use. The participant was compensated and permitted to leave. If the consenting participant scored above a 9 on the BDI-II, this was categorized as a significant level of depressive symptoms and the participant was study eligible. Any participant in this range was randomized into one of three intervention arms: enhanced referral, psychoeducation, or avoidance-reduction.

Participants in the enhanced referral group completed the full battery of questionnaires assessing predictors of treatment-seeking. Following questionnaire completion, the research assistant used a script to discuss the participant’s report of significant depressive symptoms and the possible benefit of treatment. The participant was provided a thorough referral source packet, which included a number of resources pre-screened and matched to his personal insurance provider. The list of referral sources
was comprised of resources for both psychotherapy and psychotropic medications and included only those providers accepting new patients. While the enhanced referral group served primarily as a control condition, simply providing a vetted referral list was anticipated to enhance the participant’s enabling resources (e.g., resource information and availability) and subsequently increase the likelihood of seeking specialized treatment.

Similarly, participants receiving the *psychoeducation* intervention also completed a battery of questionnaires and received the same scripted information regarding high depressive scores and referral information. Additionally, participants received a handout outlining various informational points regarding depression and mental health treatment that the research assistant verbally outlined (see Appendix B). The aim of the intervention was to increase the patient’s knowledge of depression and potential benefits of treatment and to replicate previously used interventions. This intervention lasted approximately 15 minutes, allowing this intervention to serve as a more stringent comparison condition in that it matched the experimental intervention (i.e., avoidance-reduction) in overall time and direct contact with the research assistant.

The remaining participants, randomized into the *avoidance-reduction* intervention, completed the questionnaire battery, received information on their symptom status, and received referral information. Participants in this group also received an intervention aimed at decreasing avoidance and increasing goal-directed, treatment behavior through the delineation of help-seeking pathways. Specifically, the intervention utilized four steps mapped onto the GAINS acronym: identification of Goals, Avenues, Impediments, and Necessary Steps. The research assistant spoke with the patient about
his goals/ values and the ways in which depressive symptoms have impeded access to these goals/ values. The intervention was completed with a worksheet outlining a reduction in depressive symptoms as a goal. The worksheet outlined treatment-seeking as a potentially beneficial avenue in pursuing this goal, and time was spent identifying actions needed to pursue this avenue as well as potential barriers. The research assistant was attentive to behaviors and attitudes that were likely related to avoidant patterns in the participant’s life and aided the participant in examining how these behaviors may be inhibiting movement towards goals/ values (e.g., high functioning and mental health). Further, the intervention was designed to help identify avenues for problem-solving in order to increase treatment-seeking. As with the education intervention, this intervention lasted approximately 15 minutes and was supplemented with a worksheet summarizing the information from the intervention (see Appendix C).

In each intervention arm, participants were assessed for suicidal risk; no participant was found to pose a significant, immediate suicidal risk. Yet, a licensed psychologist was available by phone at all times for consultation if needed, and all necessary safety precautions were taken to ensure that immediate attention and resources were available. All participants were contacted by email or postal mail for follow-up assessments four weeks following the initial assessment. If a participant did not respond to contact by mail or email, the research assistant attempted to contact the participant by phone. Participants were asked to report on any help-seeking behavior following the initial assessment as well as complete a brief measure of depressive symptoms and hope. Participants were compensated for each hour of participation at a rate of $10 per hour.
culminating in a total of approximately $15.

**Data Analytic Plan**

We examined the data in four steps: a) replication of previous findings, b) descriptive analyses, c) hypothesis testing, and d) post-hoc analyses. In the first step, the relations among treatment-seeking attitudes or intentions and variables identified in previous research as barriers to treatment-seeking were analyzed in an attempt to replicate prior findings in a clinical sample. In the next step, we completed descriptive analyses relevant to treatment-seeking experiences (e.g., percent of sample that secured mental health treatment). In the final steps of the data analytic plan, we used multivariate logistic regression analyses to test study hypotheses; the three interventions were compared to identify differences in the prediction of treatment-seeking behavior. We also ran post-hoc analyses to examine possible moderators of the relation between intervention and treatment-seeking as well as intervention effects on symptom change.

**Model specification.**

In each data analytic step, care was taken to meet relevant model assumptions. Bivariate correlational and linear regression analyses assessed relations between treatment-seeking attitudes/ intentions and variables related to treatment-seeking. In these analyses, assumptions of linearity, normality, independence, and homoscedasticity were each assessed and judged to be met. The bulk of analyses completed in the hypothesis testing step had a binary dependent variable (e.g., did one seek treatment or not). Inclusion of a dichotomous outcome violates many of the statistical assumptions held in ordinary least squares regression and linear discriminant function analyses, and,
therefore, logistic regression was required (Agresti, 1990). Logistic regression assumes a binomial distribution of errors and the conditional mean of the dichotomous outcome, assumptions generally satisfied with a random sample and independent observations (Agresti, 2002; Menard, 2009). Logistic regression models also require linearity in the logit, inclusion of all relevant variables and exclusion of extraneous variables, independence of error, absence of perfect multicollinearity, and measurement of independent variables without error. Although it is not possible to ensure that every relevant variable was included in each logistic model, previous findings and exploratory models were used to identify relevant variables and prevent significant multicollinearity. Further, care was taken to obtain a normal sampling distribution and minimize measurement error.

I used PROC LOGISTIC in the Statistical Analysis Software (SAS) to fit the binary logit models. In each logistic regression analysis, I designated the maximum likelihood (ML) method based on published recommendations of several authors (e.g., Haberman, 1978; Schlesselman, 1982). I assessed models in regards to: a) overall model evaluation, b) statistical test of individual predictors, c) goodness-of-fit statistics, and d) validations of predicted probabilities (Peng, Lee, & Ingersoll, 2002). To examine overall model fit, a significant chi square (χ²) on the Likelihood Ratio (LR) test signified an improvement of fit over the intercept-only model; a significant value on a LR test indicates a rejection of the null hypothesis and implies that at least one predictor in the model does not equal zero in the population¹. Significance of a regression coefficient (i.e., β) for a given variable of interest was established using the Wald chi-square,
indicating that the variable accounted for significant variance in the outcome (e.g., likelihood of seeking treatment). For each variable, in addition to the reported $\beta$, the exponentiated value ($e^{\beta}$) of the parameter estimate was also reported. The exponentiated parameter estimate represents the odds ratio and is interpreted as the change in event probability for each unit (or one level) increase in the predictor.

To assess goodness-of-fit of the model, I examined the Akaike Information Criteria (AIC) and the max-rescaled $R^2$ (Bollen, 1989); a smaller value of the AIC indicates improved model fit (Akaike, 1983). Similarly, $R^2$ (Cox & Snell, 1989) does not have a direct interpretation (unlike that of $R^2$ in linear regression) but can be interpreted loosely as the proportion of variance in the dependent variable that reduces when the predictors are added to the model (Shtatland & Barton, 1998); the max-scaled $R^2$ is adjusted to permit a maximum value of one (Nagelkerke, 1991). The $c$ statistic, the area under the Receiver Operating Characteristic (ROC) curve and a measure of model specificity and sensitivity, was also examined. Specifically, the ROC curve is a plot of model sensitivity (i.e., ability of the model to predict an event correctly) versus one minus model specificity (i.e., ability of the model to predict a nonevent correctly). Succinctly, a larger area under the ROC curve (or a larger $c$ statistic) indicates better fit of the model to the current study data. The $c$ statistic ranges from .50 to 1.00 with a value of 1.00 indicating that the model perfectly predicts that outcome and a value of .50 indicating the model predicts with the same accuracy as chance.
Missing data.

Given the use of listwise deletion in analyses such as logistic regression, it was critical to amass complete data for as many participants as possible to maintain a sample size large enough to provide adequate power in our analyses. I considered use of multiple imputation (MI) to provide values for missing data. The MI method attempts to represent missing values with a random sample of values and is suggested to more accurately reflect uncertainty than alternative methods (Rubin, 1976; 1987). Unfortunately, due to the number of variables included in our dataset, this methodology was not applicable. Further, given the potentially sensitive nature of the information that participants were asked to provide (e.g., symptom severity, treatment history), it is likely that missing data may not be missing at random, a requirement for MI. Instead, simple imputation was used, and missing values were replaced with within-person scale means for any item in which the participant provided responses to at least 70% of the items on that scale.
Chapter 3: Results

Sample Recruitment

Participants were recruited from the Thomas E. Rardin Family Practice office at The Ohio State University. In the six months during which participants were recruited (i.e., July 2011, August 2011, November 2011, December 2011, January 2012, February 2012), 353 patients reported PHQ scores above 9 and the attending PCP subsequently referred 127 (36%) of these individuals to the study. Although all referred patients consented to study participation, only 121 (95%) were eligible for the study and were randomized into one of the three intervention groups\(^3\). Sixty-five (51%) individuals participated in the study immediately following their appointments with a PCP, and the remaining participants were contacted by telephone shortly following their PCP appointment and participated at a return appointment.

In order to establish the representativeness of our sample, I attempted to identify the percentage of all study-eligible patients seen in the clinic during the participant recruitment period. I obtained data regarding the number of patient visits in the clinic between November 1, 2011 and February 29, 2012; data from July 1, 2011 through August 31, 2011 (the first two months of recruitment) were not available, and patients were not recruited between September 1, 2011 and October 31, 2011. A flow chart of the recruitment process and patient participation is available in Figure 1.
Participants were contacted for the follow-up assessment 28 days after completing the baseline intervention, and 96% (n = 116) of the participants who received the intervention provided follow-up data. Participants responded to the request for follow-up information, on average, 45.65 days (SD = 22.24, R = 11 - 151) after the initial request was sent; therefore, follow-up data represents a period of ten weeks, on average, after intervention. Most participants (65%) responded to initial mail/ email inquiries. A substantial portion (31%), however, did not respond to mail/ email contact attempts and instead provided follow-up information at a subsequent contact by phone. Data collected by phone do not include assessments of depressive symptoms or hope. Five (4%) participants did not respond to any follow-up attempts.

**Constructs Associated with Treatment-Seeking Attitudes and Intentions**

The constructs previously delineated in the literature as significant correlates of treatment-seeking attitudes and intentions include demographic variables, symptom and treatment history, and individual differences, such as avoidance and perceived social support. In the following sections, the psychometric properties of these constructs in the current sample are outlined, and collectively these variables are examined in association with treatment-seeking attitudes and intentions.

**Demographics.**

Demographic data were available for 119 of the 121 study participants and are presented in Table 1. Participants were predominately female and White\(^4\). They ranged in age from 18 to 72 years with an average age of 39 years (\(M = 38.85, SD = 13.17\)), and just over half of the sample reported being in a serious romantic relationship. The sample
was widely distributed in reports of education and income.

**Psychological profile.**

Participants, on average, reported depressive symptoms in the severe range \((M = 30.87, SD = 10.51, R = 13 - 54)\) on the BDI-II (Beck et al., 1996) at baseline. In terms of affectivity, the sample means were two standard deviations above the non-clinical normative mean for PANAS-NA and slightly more than one standard deviation below the normative mean for PANAS-PA (Crawford & Henry, 2004). The sample mean was also two standard deviations below the normative mean on the Hope Scale (Snyder et al., 1996), and perceived social support was one standard deviation below the mean of the standardization sample for all three MSPSS subscales (e.g., family, friends, significant other; Dahlem, Zimet, & Walker, 2006). Finally, the sample was slightly more than one standard deviation above the mean of the AAQ as reported in the scale validation paper (Hayes et al., 2004), indicating elevated levels of avoidance. These findings suggest an overall deficit in psychological functioning at the baseline assessment in comparison to non-clinical control groups. Please see Table 2 for the mean, standard deviation, and range of each variable.

**Symptom and treatment history.**

On average, participants reported depressive symptoms first developing near the age of 23 \((M = 23.22, SD = 12.72, R = 6 - 56)\). Eighty-seven participants (72%) reported a history of psychotropic medication use related to psychological symptoms. Specifically, 45% \((n = 54)\) reported current use and 27% \((n = 33)\) reported past use of a psychotropic medication. Participants currently taking a medication reported beginning
medication use, on average, three years prior \( (M = 160.09 \text{ weeks}, \ SD = 164.35, \ R = 4 - 676) \). Of the 87 participants reporting psychotropic medication use at some point, only eight (9%) reported ever receiving treatment from a psychiatrist, suggesting that the vast majority (91%) received a prescription for psychotropic medication from a PCP or some other non-mental health specialist.

Although none of the study participants were currently in any form of psychotherapy, 50% \((n = 60)\) of the sample reported at least one previous experience of counseling or therapy for the treatment of depression. Participants reported receiving care from one or more sources, including psychologists \((n = 36)\), social workers \((n = 30)\), and counselors \((n = 15)\). Participants reported an average of three separate treatment episodes \( (M = 3.23, \ SD = 1.77, \ R = 1 - 10) \), approximately 12 sessions in length each \( (M = 12.33, \ SD = 23.68, \ R = 1 - 150) \). Using a scale ranging from 1 - 4, participants reported treatment was generally “somewhat” helpful \( (M = 2.32, \ SD = 0.92, \ R = 1 - 4) \). Additionally, the majority of the participants (76%) reported having at least one friend or family member who had participated in therapy at some point in time.

**Sociodemographic and psychological variables associated with treatment-seeking attitudes and intentions.**

Despite the fact that at least half of the study sample had previous treatment experience with a mental health professional and all had consented to be in a study about the treatment of depression, the average attitude toward treatment was half of a standard deviation below the non-clinical normative mean (Fisher & Turner, 1970). I conducted bivariate correlational analyses to examine demographic variables, symptom and treatment history, and individual differences in relation to attitudes toward treatment-
seeking. A favorable attitude toward treatment was significantly and negatively correlated with current and past use of medication for psychological symptoms (see Table 2). One’s attitude, however, was positively correlated with the number of sources from whom one sought help in the past month, the likelihood of seeking help from various sources in the coming month, and having a friend with a history of mental health treatment. Attitude was also correlated positively with perceived social support, income, and years of education. Several constructs previously reported to be related to attitudes were not significantly related in the current sample (e.g., sex, ethnicity, relationship status, previous mental health treatment, depressive symptoms, positive and negative affect, avoidance, hope). 

The eight variables identified as significant correlates of attitude were entered into a linear regression model with attitude as the criterion variable. The overall model was significant, \( F(8, 93) = 3.49, p = .001, \text{adj. } R^2 = .17 \). Only having a friend with a mental health treatment history accounted for significant variance in one’s attitude toward treatment, and the variance accounted for by this model was limited (see Table 3).

The associations among these variables and a participant’s reported intentions to seek help from various sources in the coming month were also examined and demonstrated a similar pattern of results (see Table 2 and 4). An exception, intentions were not significantly correlated with income or education, but, instead, intentions were significantly correlated with hope. Specifically, the self-reported likelihood of seeking help from various sources in the coming month was positively related to one’s total score on the HOPE scale, as well as both the agency and pathways subscales. The variables
that were significantly correlated with help-seeking intentions in the next month were entered into a linear regression model as predictors of the construct. The overall model was significant \((F(10, 100) = 6.33, p < .001, \text{adj. } R^2 = .33)\) with both help-seeking attempts in the past month and perceived social support from family members accounting for significant variance in help-seeking intentions (see Table 4). A participant’s anticipated likelihood of seeking help from various sources in the next month was significantly positively related to the number of sources from whom he or she had sought help in the past month and the number of family members who were perceived to be available for social support.

One’s overall help-seeking intentions as measured above is reliant, to a degree, on one’s social support network and may not address use of professional resources specifically. Therefore, I also examined correlates of one’s reported likelihood of seeking help from a mental health professional in the next month. All four attitude subscales \((rs = .24 - .41, p < .01)\) were positively associated with intentions to seek help from a mental health professional as well as help-seeking in the past month (from all sources; \(r = .24, p = .01\)) and a history of mental health treatment \((r = .22, p = .02)\). When these six variables were entered into a linear regression, only confidence in mental health treatment accounted for significant variance in one’s intentions to seek help from a mental health provider in the coming month, \((F(5, 100) = 6.17, p < .001, \text{adj. } R^2 = .18)\).

**Treatment-seeking Experience**

Of the 116 participants providing follow-up data, 75 (64%) reported some attempt to seek professional help for depression in the weeks following the intervention.
Participants, primarily, reported seeking treatment from a mental health professional ($n = 55, 74\%$). Participants also reported seeking treatment from a PCP ($n = 18, 24\%$), religious advisor ($n = 4, 5\%$), or another, undesignated source ($n = 4, 5\%$) either in addition to or in place of a mental health professional. Of those who sought care from a mental health professional, participants most frequently reported seeking care from a psychologist ($n = 26, 47\%$); however, participants also reported seeking treatment from psychiatrists ($n = 12, 22\%$), counselors ($n = 10, 18\%$), and/or social workers ($n = 5, 9\%$). Ten individuals (18\%) reported seeking help from another, undesignated mental health professional. Of the 55 participants who attempted to receive care from a mental health professional, 45\% ($n = 25$) reported meeting with someone for treatment. These participants reported an average of two meetings ($M = 2.32, SD = 1.21, R = 1 - 4$) at the time of follow-up, and the average level of benefit associated with these meetings was rated between *somewhat helpful* and *pretty helpful* ($M = 2.63, SD = 1.13, R = 1 - 5$). Of those who initially sought treatment but reported not meeting with a provider, nine (17\%) participants reported being on a waitlist to receive treatment. Three (6\%) participants changed their minds about wanting to begin treatment, and four participants (7\%) were unable to attend due to a lack of time and/or transportation. Twelve (22\%) participants reported being unable to find a provider willing to take a new patient, and two participants reported being deterred when they failed to receive a call-back from providers after inquiring about treatment.
Participants also identified any factors that encouraged them to seek treatment from a mental health professional following intervention. The most frequently reported factor was learning about the treatment process and resource availability ($n = 23$). Participants also frequently identified being encouraged by support from family or friends ($n = 16$), learning about their symptoms ($n = 11$), and noticing an increase in depressive symptoms ($n = 10$). Participants cited encouragement from the researcher ($n = 3$) and/or the PCP ($n = 2$) as influential factors as well.

Participants also reported on barriers they experienced that inhibited their ability or desire to seek treatment. For those who reported a desire to seek treatment but did not, the predominate barrier identified ($n = 42$) was a lack of enabling resources (e.g., finances, time, transportation, physical health). Participants ($n = 5$) reported being inhibited by fears of judgment and stigma from family and friends and being unsure as to where to seek treatment ($n = 6$). Participants that did not have interest in seeking treatment reported that their symptoms: a) had alleviated ($n = 16$), b) were not serious enough to warrant treatment ($n = 11$), c) would likely remit naturally ($n = 9$), and/or d) would not be helped by treatment ($n = 7$). Three participants reported not seeking treatment due to a recent prescription for anti-depressant medication received in the appointment concurrent with study enrollment.

**Hypothesis Testing**

The primary hypotheses of this study are related to identifying predictors of service use as well as the efficacy of brief interventions in facilitating mental health treatment-seeking. Before examining the relative effects of the interventions, I examined
any differences between the intervention groups at baseline. Participants were randomized into three intervention groups using a stratified randomization procedure to ensure that each intervention group had a sufficient number of individuals with BDI-II scores in the severe range. Groups were compared on all major sociodemographic, psychological, and treatment-history variables. The enhanced referral, education, and avoidance-reduction intervention groups did not differ on the majority of variables but did differ significantly in age and gender (see Table 5). For both variables, the significant difference was between the enhanced referral group and the avoidance-reduction group such that the avoidance-reduction group included more women and younger participants relative to the participants in the enhanced-referral group. To control for effects that may be due to these sample differences, both age and gender were included in regression analyses assessing intervention group differences.

**Hypothesis 1: Constructs previously highlighted in the literature as potential barriers to service use will predict decreased odds of service use.**

Given the number of variables associated with treatment-seeking in the literature, I used a stepwise selection procedure in a logistic regression analysis to determine which variables were appropriate to enter into a model predicting treatment-seeking behavior. Variables representing sociodemographics (i.e., sex, age, ethnicity, relationship status, years of education), treatment history (i.e., current psychotropic medication use, previous treatment experience, and follow-up time (i.e., days between baseline and follow-up response) were selected for the model. I also included depressive symptoms, hope, avoidance, perceived social support, and attitudes toward treatment in the model. Scores
on each of these questionnaires were centered around the scale grand mean to ease interpretation. I set the model to include one variable at each step; variables at or below the level of \( p = .30 \) were allowed to enter the model and were required to maintain a significance level of \( p < .05 \) to remain in the final model (Hosmer & Lemeshow, 1989). The dependent variable was whether the participant reported any effort to receive treatment from a professional resource (i.e., mental health professional or physician) in the weeks between intervention and follow-up.

Complete follow-up data were available for 109 of the 116 participants, and 71 of these individuals reported seeking treatment following the intervention. The initial model, including only the intercept, converged and indicated that, without the consideration of any predictors, the odds of seeking treatment are nearly two times greater than the odds of not seeking treatment (\( e^{\beta} = 1.87, \ p = .002 \)). The first independent variable entered into the model was ATSPPH (i.e., attitude toward treatment). The overall model reached significance and indicated that, for a person with an attitude toward treatment one standard deviation above the sample mean, the odds of seeking treatment are nearly two times higher than the odds for a person with an average attitude towards treatment. The inclusion of attitude resulted in a model fit of AIC = 136.94 and a max-rescaled \( R^2 = .10 \).

Ethnicity was the next variable entered into the model, and the model fit improved, AIC = 133.19 and max-rescaled \( R^2 = .16 \). In this model, ethnicity was a significant predictor, and, based on the exponentiated estimate, the odds of a White participant (with an average attitude toward treatment) seeking treatment were 2.8 times
higher than the odds of a non-White participant. In the third step, AAQ (i.e., avoidance) was entered into the model. Although AAQ scores did not meet criteria to be maintained in the model ($p = .08$), the variance accounted for when AAQ was entered into the model did increase slightly (max-rescaled $R^2 = .20$). Individuals with higher levels of avoidance had increased odds of seeking treatment versus those with lower levels of avoidance.

None of the remaining variables of interest qualified for model entry (i.e., $p \leq .30$), and model building was terminated; only attitude and ethnicity were identified as significant predictors of treatment-seeking. The exponentiated estimate ($e^\beta = 3.24$) for the intercept in the final model suggests that the odds of seeking treatment for a person who is White and has an average attitude towards treatment are more than three times the odds of that person not seeking treatment. The probability of seeking treatment decreases if a person is a minority or holds attitudes regarding treatment that are less favorable (see Table 6 for the full model).

Under loosened model criteria ($p < .20$ to stay in the model), four additional variables predicted treatment-seeking. Similar to the previous model, attitude, ethnicity, and avoidance were entered in the first three steps, and a similar pattern of effects existed. In the fourth step, treatment history was entered ($p = .13$) and maintained in the model until relationship status was entered as a significant predictor in the fifth step, ($p = .19$). When relationship status was entered, the estimate of treatment history fell just below the requisite $p < .20$ and was removed from the model. This model suggests that individuals who are White, single, or have previously received mental health treatment have odds of seeking treatment that are approximately twice the odds of individuals who
are non-White, in a serious relationship, or have no history of treatment. As in the previous model, the probability of seeking treatment is higher if a person reports more favorable attitudes toward treatment or increased levels of avoidance such that the odds of seeking treatment for a person who reports an AAQ score one standard deviation above the mean (indicating elevated avoidance) are 58% higher than the odds for a person reporting an average avoidance score. Although the model fit as assessed with AIC was very similar to that of the more restrictive previous model (AIC = 131.58 in this model compared to AIC = 133.19 in the previous model), the max-rescaled $R^2$ increased from .16 in the previous model to .22 in the current model, suggesting a notable increase in the prediction of treatment-seeking accounted for in the current model. The full model can be seen in Table 7.

**Hypothesis 2**: Individuals receiving the education and avoidance-reduction interventions will be significantly more likely to seek mental health services following referral than individuals receiving the enhanced referral intervention.

**Hypothesis 3**: Individuals receiving the avoidance-reduction intervention will be significantly more likely to seek services following referral than individuals receiving the education intervention.

To examine the second and third hypotheses, intervention was entered into the model with the enhanced referral condition set as the reference group and the significant predictors from the previous model (i.e., attitude, ethnicity, and avoidance) entered simultaneously as covariates. In this model, complete data from 110 participants were available; 72 (65%) of these participants reported seeking treatment between the intervention and follow-up assessment. The overall model was significant (LR $\chi^2(5) =$
21.98, \( p < .001 \)). The model fit (AIC = 131.83) was similar to the previous models that did not include intervention as a predictor, but a slight increase in the max-rescaled \( R^2 \) (\( R^2 = .25 \) as opposed to \( R^2 = .16 \)) suggests a possible benefit to including intervention in model (see model in Table 8). Both ATSPPH (i.e., attitude) and ethnicity were identified as significant covariates (AAQ/ avoidance was marginally significant, \( p = .08 \)). The intercept provided the baseline odds of seeking treatment in this model as \( e^\beta = 2.49 \), indicating that an individual who is White, reports average attitudes and avoidance scores, and is in the enhanced referral condition is two and a half times more likely to seek treatment than to not seek treatment.

The fixed effect of intervention was not statistically significant (Wald’s \( \chi^2(2) = 3.96, p = .14 \)). When the interventions are examined in contrast statements, it is evident that there is no difference between the enhanced referral and psychoeducation conditions of the study (\( p = .98 \)). The differences between the avoidance-reduction condition and these two conditions were marginally significant, indicating the model may be underpowered to detect meaningful differences in these contrast statements. The odds of seeking treatment for individuals in the enhanced referral (\( e^\beta = .37, p = .09 \)) and psychoeducation (\( e^\beta = .36, p = .07 \)) interventions are only 36 - 37% as high as the odds of seeking treatment for individuals in the avoidance-reduction intervention. In other words, the odds of treatment-seeking are nearly three times higher if one receives the avoidance-reduction intervention relative to the other two interventions.

To examine how accurately the model predicted treatment-seeking in this sample, a rank correlation of observed responses and predicted probabilities was completed. The
model had a concordance rate of 75%, suggesting that, in 75% of the pairs of participants (with different treatment-seeking behaviors), the model predicted treatment-seeking behavior for the participant who sought treatment. Conversely, the discordance rate indicates that the model (inaccurately) predicted a higher probability of treatment-seeking for the participant who did not seek treatment in 25% of observations pairs. The $c$ statistic for this model was .75, suggesting moderate accuracy; specifically, 25% more accuracy in predicting treatment-seeking behavior than would be attributable to chance.

**Post-Hoc Analyses**

Given the content emphasis of the specific interventions, analyses testing the interactions between intervention and avoidance as well as intervention and years of education predicting treatment-seeking were examined. The interaction between avoidance and intervention was not significant (Wald’s $\chi^2(2) = .36, p = .83$) nor was the interaction between years of education and intervention (Wald’s $\chi^2(2) = .42, p = .81$). I also examined a possible interaction of hope and intervention on treatment-seeking; this effect also was not significant (Wald’s $\chi^2(2) = .22, p = .90$).

Although the intent of each intervention was to encourage treatment-seeking for depressive symptoms, I was interested in any direct effect the interventions may have had on participants’ distress and symptoms. I examined mean score differences between baseline and follow-up on reports of depressive symptoms and hope, the only symptom (i.e., depressive symptoms) or psychological (i.e., hope) constructs assessed at both assessment points. These analyses were completed on a subset of the full sample, as symptom data at follow-up were only available for participants responding to mail/email.
inquiries and not those who responded by phone. The two subsamples (i.e., mail/ email responders and phone responders) were examined and did not differ significantly in any construct assessed at baseline or follow-up with the exception of ethnicity. The odds of responding by mail/ email compared to phone were 23% higher for White participants than non-White participants ($p = .02$). Ethnicity was included in the following analyses assessing symptom change by intervention.

Depressive symptoms did significantly change ($t(71) = 4.43, p < .001$) between baseline and follow-up. Participants reported an average decrease in symptoms of nearly six points on the BDI-II ($M = -5.58, SD = 10.71, R = -33 – 21$), reducing the mean sample severity to the moderate range (Beck et al., 1996). The difference in hope was marginally significant between baseline and follow-up assessments ($t(59) = -1.93, p = .06$), such that HOPE scores increased slightly ($M = 2.31, SD = 9.28, R = -14 – 26$). See Table 9 for the means, standard deviation, and range of symptom reports by intervention group at each time point.

I used general linear modeling to investigate which variables predicted BDI-II (i.e., depressive symptoms) at follow-up. In the first step, I entered sociodemographic variables (i.e., ethnicity, sex, age). Additionally, I entered variables that predicted treatment-seeking in previous models (i.e., ATSPPH, AAQ) as well as use of psychotropic medication at baseline, days between baseline and follow-up assessments, and BDI-II at baseline. Because hope and depressive symptoms are often negatively associated, the HOPE scores at both baseline and follow-up were also included in the model. In a second step, variables that reached a minimum $p < .30$ were included in the
model with intervention group and treatment-seeking. This model was further reduced in a third step to include any variable with a $p < .10$, providing the final model (see Table 10 for summary of each model).

Ten variables were included in the first model ($F(10,40) = 5.12, p < .001, R^2 = .56$), and five (i.e., BDI-II at baseline, ethnicity, sex, AAQ, HOPE at follow-up) met the $p < .30$ criteria to remain in the model. When intervention group and treatment-seeking were included in the second model ($F(8,43) = 8.53, p < .001, R^2 = .61$), all variables met the $p < .10$ criteria except sex and treatment-seeking. The final model ($F(6,45) = 11.57, p < .001, R^2 = .61$) included BDI-II at baseline, ethnicity, AAQ, HOPE at follow-up, and intervention group as significant predictors in the model with $p$-values ranging from $p < .001$ to $p = .05$. As anticipated, depressive symptoms and avoidance at baseline positively predicted depressive symptoms at follow-up while hope negatively predicted depressive symptoms. White participants reported larger improvements, on average, in depressive symptoms relative to non-White participants.

Although a significant effect of treatment-seeking was not found, intervention group significantly predicted depressive symptoms at follow-up and accounted for 15% of the total variance in the model. Participants in the avoidance-reduction group reported a near 8-point improvement in depressive symptoms between baseline and follow-up in contrast to the 4-point and 4.7-point improvements reported in the education and enhanced referral conditions, respectively. Though these analyses were exploratory and require replication, the findings suggest the avoidance-reduction intervention may have a direct benefit on the alleviation of depressive symptoms.
Chapter 4: Discussion

Research on mental health treatment indicates that service use is drastically underutilized with only 30% of individuals in need of services each year accessing prompt, appropriate treatment (Andrews et al., 2001; Goodwin et al., 2002; Kessler & Walters, 1998). Through retrospective and epidemiological studies, we have gained insight into some of the sociodemographic and diagnostic variables correlated with service use, and researchers have identified constructs that may predict treatment-seeking by examining individuals’ attitudes and intentions regarding mental health treatment. Unfortunately, little research has been completed following individuals who are experiencing clinical symptoms over time to identify the variables that predict actual service use. Given the considerable societal and personal costs that result when individuals in distress do not receive adequate treatment, the need for research addressing the factors that inhibit and facilitate treatment-seeking by those in need is unambiguous. My purpose in this study, therefore, was two-fold. First, I aimed to examine the effect that pre-existing constructs (e.g., sociodemographic, treatment attitudes and experience, psychological symptoms, social support) have on treatment-seeking in a longitudinal design. Secondly, I attempted to develop and test an intervention that would be effective in encouraging service use by individuals experiencing depressive symptoms.
I completed the study in a primary care clinic that serves a diverse patient population, including a high proportion of individuals with low-SES and/or ethnic-minority status, populations in which rates of treatment-seeking for mental illness tend to be particularly low (Lewis et al., 2005; Pescosolido & Boyer, 1999). The first major finding from the study was simply that, as anticipated, the individuals receiving medical care at this primary care clinic were in clear need of mental health services. Thirty percent of all patients screened at the primary care clinic reported clinically-significant depressive symptoms. Further, two-thirds of the individuals who participated in the study (and were reached for follow-up) attempted to obtain mental health care services following the intervention. Although I do not have data regarding the percentage of individuals from this clinic who would have sought treatment without any intervention, this rate of treatment-seeking is higher than that found in epidemiological studies of depression. Data from the National Comorbidity Survey-Replication study indicate that, in a sample of individuals who experienced a depressive episode in the previous 12-months, 52% reported at least one service visit to a care provider for depression in the past year and 55% of these visits were with a mental health professional (Kessler et al., 2009). During our 10-week assessment period, 64% of participants reported seeking treatment for depression and 74% of these individuals sought treatment from a mental health specialist. Given the brief follow-up window, these data are promising and suggest a higher rate of service use than previously reported, particularly from mental health specialists. The lack of a true control group is a limitation of this study, and in a future study, inclusion of longitudinal data from patients with high depressive symptoms.
who have not received any intervention will be beneficial in assessing the degree to which intervention influences treatment-seeking.

As a major aim of this study, I sought to identify which constructs may be responsible for participants’ efforts to obtain professional services and was surprised to find few variables that accounted for significant variance treatment-seeking. I examined the relation between constructs identified in the current treatment-seeking literature as important barriers or facilitators to service use and participants’ attitudes regarding treatment or intent to seek help (from various sources). Previous research has been completed using attitudes and intentions almost exclusively as a proxy for treatment-seeking behavior, and I anticipated replicating many positive, strong relationships between constructs. In our results, however, participants’ attitudes toward treatment and intentions to seek help in the following month were associated with few variables, and even fewer variables accounted for significant variance in linear regression analyses. Having a friend with a history of mental health treatment was the only variable that accounted for significant variance in one’s attitude toward treatment, and recent help-seeking attempts and perceived social support were the only variables that accounted for significant variance in help-seeking intentions. Findings linking constructs such as gender, ethnicity, age, and past treatment experience to treatment-seeking attitudes and intentions were not replicated in our study. Similarly, few variables predicted actual attempts to seek treatment. Only one’s attitude toward treatment and minority ethnic-status accounted for significant variance in the likelihood of seeking treatment following intervention; avoidance was marginally related to treatment-seeking and the effect would
likely be significant in a more powerful model (i.e., with more participants).

It is not clear why findings did not replicate the associations between treatment-seeking (attitudes, intentions, and behaviors) and sociodemographic, psychological, and treatment-history variables found in previous research. In the current study, I included a sample of participants that was sociodemographically diverse, and much of our sample was comprised of individuals with low-SES and/or ethnic-minority status who ranged widely in age. This is in contrast to much of the previous research, which has been completed with less diverse samples, often White, university and high school students. It appears that constructs that promoted and inhibited treatment-seeking behaviors (and attitudes) in our sample were different from the constructs influencing students sampled in many previous studies. Enabling resources (i.e., time, income, service availability), particularly, are expected to be different in a sample of students and a sample of low-income, minority adults. Students generally have limited responsibilities outside of schooling and also have access to treatment through their high school or university. Individuals in the community, principally those with financial difficulties, are more likely to experience conflicts of time, money, and service availability when seeking services. Similarly, researchers find that attitudes vary by age and ethnicity (Gonzalez, Alegria, & Prihoda, 2005), indicating that the variables predicting favorable attitudes in a sample of young adults and students may not be predictive in a sample of adults who are older or ethnically diverse. Further, some of the variables examined may have a complex relationship with treatment-seeking that is not apparent in our analyses. A non-linear relationship may exist for factors such as income or age where treatment-seeking is much
easier (or more difficult) at the ends of the variable continuum, for example. With a larger sample, more complex relations could be assessed.

The study sample is also distinct in the level of clinical distress present. While many previous studies have included unselected samples, the current sample of participants reported a very high level of depressive symptoms. Researchers have highlighted significant differences in both service use and attitudes at increased levels of symptom severity (Deane & Chamberlain, 1994; Kushner & Sher, 1991; Nyunt et al., 2009; Olfson & Klerman, 1992; Stead et al., 2010), and it may be that with a sample that is in distinct need of treatment, the need for treatment supersedes many barriers to seeking care. This notion is supported by the fact that two-thirds of our sample attempted to obtain treatment. The high level of service use is considered a success of the study as encouraging service use was a primary aim of our study. The fact that the majority of our sample sought treatment, however, may have limited our ability to identify meaningful predictors of treatment-seeking. With only 36% of our sample reporting no attempt to obtain treatment, outcome variability in our sample was constrained.

The second aim of our study was to develop and test a brief intervention that could be used in a primary care setting to facilitate treatment-seeking in patients experiencing significant depressive symptoms. The majority of previously-developed interventions, of which there are few, target mental health literacy and stigma. While these interventions provide valuable information regarding effective methods for changing attitudes toward treatment, they are not necessarily applicable to treatment-seeking behaviors (i.e., service use). In the current study, I tested the effect of three
interventions on subsequent efforts to obtain professional treatment for symptoms of depression. Although the overall effect of intervention on treatment-seeking was not significant in our sample, the avoidance-reduction intervention was more effective than the alternative interventions at a marginally significant level. While the treatment-seeking rate in the enhanced referral and education intervention groups was 62% and 58%, respectively, 72% of individuals in the avoidance-reduction group reported efforts to gain mental health treatment following the intervention. Given the proportions of treatment-seeking and marginally statistically-significant difference between the enhanced referral and avoidance-reduction interventions, I examined effect sizes to determine whether the model was underpowered. Using the odds ratio found between these two interventions ($e^\beta = .36$) and an alpha value of $p = .05$, a power analysis indicates an increase in sample size of 29 additional participants to a final sample size of 145 would have allowed a significant effect to be detected. The avoidance-reduction intervention, therefore, is a promising intervention to increase mental health service use, and I am eager to examine intervention success in future studies with increased power.

The comparison interventions (i.e., enhanced referral, psychoeducation) are fairly conservative control groups, providing a stringent test of the avoidance-reduction intervention. The education intervention served as a control for factors such as intervention time and rapport built with the researcher, and all three interventions included discussion of symptoms, treatment need, resource availability, and encouragement to consider seeking treatment. Further, the enhanced referral list that was provided to every participant included a list of resources that had already been matched to
the participant’s insurance provider and contacted to confirm the availability of services. For a considerable number of participants (~40%) who had limited or no insurance, I also provided contact information for a free depression treatment clinic at a local university. The challenges involved in finding and affording treatment can be burdensome and overwhelming. By minimizing these challenges for all participants, I may have reduced the relative strength of the avoidance-reduction intervention, an intervention aimed at increasing problem-solving. It is likely that these situational factors (e.g., pre-sorted resources, free treatment) will not be available in most other contexts, and, therefore, the effect of the avoidance-reduction intervention may be stronger in other settings; this, of course, is an empirical question that requires future investigation.

An unexpected outcome from the study was the effect that intervention had on depressive symptoms directly. In the weeks following intervention, those receiving the avoidance-reduction intervention reported an 8-point decrease in depressive symptoms, on average, while those in the enhanced referral and education conditions reported only a 4-point decrease in depressive symptoms. While briefly discussing the impact of depressive symptoms on one’s goals/values and various pathways to overcoming obstacles in seeking treatment may only marginally enhance treatment-seeking behavior, these findings suggest a significant effect of the intervention on the reduction of depressive symptoms. It is important to note, however, that the data used to examine changes in depressive symptoms were collected only from participants that had returned follow-up data by mail and email. Participants that did not return follow-up mail voluntarily were contacted by phone, and data were collected at that time without the
inclusion of the BDI-II. Although these two sample groups did not differ on any major treatment-seeking variables, the findings regarding change in depressive symptoms is relevant to the mail-response group only and may not be generalizable to those who provided data by phone.

The generalizeability of our study sample is further hampered by complications in participant recruitment. Although I obtained enthusiastic support for the study from the chief physicians at the primary care clinic, I encountered substantial difficulties maintaining protocol compliance among clinic staff and physicians. As is evident from the participant recruitment flowchart (Figure 1), approximately 12,300 patients were seen in the clinic during the final four months of participant recruitment. Only 12% of these patients were provided with a PHQ prior to his or her appointment and only 45% of those PHQs were scored by the staff. Given the patient visit rates in July and August of 2011 and using a conservative estimate of 20% for the rate of clinically significant PHQs, I estimate that 2,460 PHQs of 10 or above would have been expected during our 6-month study data collection period. In practice, only 14% (n = 353) of this expected eligible sample was identified (and far fewer were introduced to study personnel).

I have little information about the individuals who did not participate in the study. Although the vast majority of patients who were provided a PHQ completed the screen, it is unclear if there was a relevant factor related to the patients who were provided the PHQs in contrast to those who were not. It is possible that clinic personnel provided more PHQs on less busy days, to less irritable patients, to more visibly depressed patients, or simply at random. Similarly, the reasons that some patients were referred to
the study by PCPs and others with research-eligible PHQ scores were not may be relevant. Whether patients were offered participation and refused, were offered participation and were not in need due to current service use, or simply were not offered participation each have dramatically different interpretations. Although PCPs were asked to report on the reasons behind patient referral decisions, this information was inconsistently and infrequently provided to the research staff.

Given these challenges in participant recruitment and data collection, I am somewhat limited in the ability to generalize the results of this study. I cannot be certain that the sample is not biased by individuals who self-selected into a depression treatment study. The majority of participants in the study did report some form of previous treatment for mental illness. Three-quarters of the sample had previously used a psychiatric medication, 45% were still using a psychiatric medication, and half of the sample reported participating in psychotherapy previously. These numbers suggest that individuals who were already particularly open to treatment were likely to participate in the study. However, I do not have data regarding the treatment-history of non-participants, and therefore cannot conclude that there are differences between the groups. Importantly, the reported mean sample attitude toward treatment was below the population average, and previous treatment was not found to be predictive of attitudes toward treatment or treatment-seeking behavior in our sample. It appears, therefore, that our sample may not have been receptive to study participation due to favorable attitudes but, perhaps, instead due to perceived need for treatment.
In future studies, improvements in recruitment are necessary to both increase intervention availability to those in need as well as to ensure generalizability. Researchers are urged to investigate barriers to participant recruitment from several directions, including clinic staff and care providers as well as individuals refusing study screening or participation. Another consideration regarding generalizability is the inclusion of multiple intervention providers. In the current study, only one researcher (JH) provided the interventions to participants. By maintaining a consistent intervention provider, characteristics of the researcher (e.g., discourse style and speed, demographic characteristics, likeability, attractiveness) were constant across all interventions and could not differentially influence intervention success. There is, however, a risk of researcher bias such that the researcher was not blind to the study design and may have inadvertently behaved in a way that promoted the success of one intervention over another. The inclusion of several intervention providers in future studies is necessary.

The findings from this study suggest that a 15-minute intervention targeting goals/values and problems-solving pathways can lead to a significant decrease in depressive symptoms and may encourage treatment-seeking, and the avenues for future research are quite exciting. With the limitations of this study in mind, the avoidance-reduction intervention can be tested in a larger sample, and additional measures may be included to begin working to understand potential mechanisms of change. Replication of findings and validation of this intervention could be highly beneficial in the treatment of depression, both directly and by increasing access to mental health providers, particularly in primary care settings where time and resources are limited.
Summary

The study successfully promoted treatment-seeking behavior with the majority of the study sample attempting to receive professional care for depressive symptoms following intervention. It appears that by meeting with a patient for only fifteen minutes and discussing the ways in which depressive symptoms inhibit progress on goals as well as pathways to overcoming these obstacles, care providers may help to decrease that patient’s depressive symptoms and, perhaps, increase his or her likelihood of seeking professional treatment. Although few variables were identified as predictors of treatment-seeking, participants with ethnic minority-status were found to be at particularly high risk for not seeking professional care. Researchers are urged to continue using longitudinal designs to help identify factors that serve as barriers, facilitators, and interventions on treatment-seeking, particularly among ethnic minority-status individuals with clinically-relevant symptoms. Further, although 55 participants attempted to seek care from a mental health professional, fewer than half were able to obtain an appointment. It is critical that researchers and care providers in both psychological and medical realms work in an integrative manner to develop treatments that are not only effective but also available to those in need.
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1 We also examined the Score and Wald tests for significance; for each model in this document, all three tests demonstrated agreement regarding the validity of the null hypothesis.

2 The Hosmer-Lemeshow (Hosmer & Lemeshow, 1989) test is an often-used test of goodness-of-fit; however, the current sample size was not large enough to permit accurate assessment of the model using this method (Hosmer & Lemeshow, 2000).

3 The six patients were ineligible because they were already receiving some form of both therapy and psychotropic medication.

4 Ethnicity was collapsed into White and Non-White categories to permit sufficient power to detect any effect of minority-status on treatment-seeking outcomes.

5 Seven outliers were removed from these means: three individuals with less than four weeks of medication use and four individuals indicating over 1,000 weeks of medication use.

6 These statistics were computed after removing one participant, an outlier who reported 1,000 treatment sessions.

7 The pattern of results was similar when examined by subscales on the ATSPPH.

8 Participants could report service use from multiple sources, and, therefore, percentages do not sum to 100.

9 Although avoidance did not reach significance of $p < .05$ in the exploratory model, it appeared to account for approximately 4% ($R^2 = .04$) of variance and was entered into the model to provide additional information. The model was also run without avoidance included and no significant differences were found in predictor significance; however, the model demonstrated a slightly poorer fit.

10 Five outliers were removed from these analyses; their removal did not significantly alter analytical findings.
Appendix A: Intervention Scripts

Script for Psychoeducational Intervention

May I start by asking you what you already know about depression?

In response to any answer given, build off with similar and then collaborating sections. Remember to ask questions examining comprehension such as:
“Does that seem like anything you have experienced?”
“How have you seen that apply to your life?”
“Does that make sense given what you have experienced?”

What is Depression?

Depression is a medical illness that involves the mind and body. Also called major depression, major depressive disorder and clinical depression, it affects how you feel, think and behave. Depression can lead to a variety of emotional and physical problems. You may have trouble doing normal day-to-day activities, and depression may make you feel as if life isn't worth living.

More than just a bout of the blues, depression isn't a weakness, nor is it something that you can simply "snap out" of. Depression is a chronic illness that usually requires long-term treatment, like diabetes or high blood pressure. But don't get discouraged. Most people with depression feel better with medication, psychological counseling or other treatment.

Symptoms of Depression may include:

Some prompting questions may include:
“Have you noticed any symptoms that may be related to depression? Such as?”
“How have you noticed any other symptoms?”
“Do any of these symptoms sound similar to anything you have experienced recently?”

Changes in Thinking
You may experience problems with concentration and decision-making. Some people report difficulty with short-term memory, often forgetting things. Negative thoughts and thinking are characteristic of depression. Pessimism, poor self-esteem, excessive guilt, and self-criticism are all common. Some people have thoughts about death, dying, or suicide during a more serious depressive episode.
Changes in Feelings
You may feel sad for no reason at all. Some people report that they no longer enjoy activities that they once found pleasurable. You might lack motivation, and become more apathetic. You might feel "slowed down" and tired all the time. Sometimes irritability or frustration is a problem, and you may have more difficulty controlling your temper. In the extreme, depression is characterized by feelings of helplessness and hopelessness.

Changes in Behavior
Changes in behavior during depression are reflective of the negative emotions being experienced. You might lose interest or pleasure in normal activities. Some people do not feel comfortable with other people, so social withdrawal is common. You may experience a dramatic change in appetite, either eating more or less. Because of the chronic sadness, excessive crying is common. Sexual desire may decrease, resulting in lack of sexual activity. A loss of motivation and energy to complete tasks and responsibilities is common, and some people even have trouble getting out of bed.

Changes in Physical Well-being
We already talked about the negative emotional feelings experienced during depression, but these may be coupled with some physical symptoms as well. Chronic fatigue, despite spending more time sleeping, is common. Some people can't sleep, or don't sleep soundly. These individuals lay awake for hours, or awaken many times during the night, and stare at the ceiling. Others sleep many hours, even most of the day, although they still feel tired. Many people lose their appetite, feel slowed down by depression, and experience physical problems such as back pain and headaches. Other people may feel increased restlessness and experience pacing, hand-wringing, or an inability to sit still.

Depression affects each person in different ways, so depression symptoms vary from person to person. For some people, depression symptoms are so severe that it's obvious something isn't right. Others people feel generally miserable or unhappy without really knowing why. Inherited traits, age, gender and cultural background all play a role in how depression may affect you.

Causes

“What do you think causes depression?”
“Have you heard any other theories on why people become depressed?”

It's not known exactly what causes depression. As with many mental illnesses, it appears a variety of factors may be involved. These include:

Biological differences. People with depression appear to have physical changes in their brains. The significance of these changes is still uncertain but may eventually help pinpoint causes.
Neurotransmitters. These naturally occurring brain chemicals linked to mood are thought to play a direct role in depression.

Hormones. Changes in the body's balance of hormones may be involved in causing or triggering depression. Hormone changes can result from thyroid problems, menopause and a number of other conditions.

Inherited traits. Depression is more common in people whose biological family members also have the condition. Researchers are trying to find genes that may be involved in causing depression.

Life events. Events such as the death or loss of a loved one, financial problems and high stress can trigger depression in some people.

Early childhood trauma. Traumatic events during childhood, such as abuse or loss of a parent, may make you more susceptible to depression.

Risks

“Do you think it is important to get treated for depression?”
“What do you think happens if you do not get depression treated?”
“What sorts of things can you do if you become depressed?”
“Do you know anything about treatment for depression?”
“How would someone go about getting treatment for depression?”
“What do you think treatment is like? What do you think a therapy session is like?”

Depression symptoms may not get better on their own — and depression may get worse if it isn't treated. Untreated depression can lead to other mental and physical health problems or problems in other areas of your life. Untreated depression is associated with severe marital and family strain, occupational impairment, and serious physical costs including risk of stroke and heart disease. Importantly, feelings of depression can also lead to suicide. Appropriate treatment, however, can help most people who suffer from depression.

Treatment

Numerous depression treatments are available. Medications and psychological counseling (psychotherapy) are very effective for most people. Often an effective treatment for depression is a combination of medication and psychotherapy.

Medications

A number of antidepressant medications are available to treat depression. There are several different types of antidepressants. Everyone's different, so finding the right
medication or medications for you may take some trial and error. This requires patience, as some medications need eight weeks or longer to take full effect and for side effects to ease as your body adjusts. Antidepressant medications are prescribed by psychiatrists or primary care physicians.

**Psychotherapy**

Psychological counseling is another key depression treatment. Psychotherapy is a general term for a way of treating depression by talking about your condition and related issues with a mental health provider. Psychotherapy is also known as therapy, talk therapy, counseling or psychosocial therapy.

Through these talk sessions, you learn about the causes of depression so that you can better understand it. Psychotherapy helps you learn to respond to challenging situations with healthy coping skills. Psychotherapy generally involves one hour of treatment each week for several weeks (12-16).

**How you prepare**

Once you decide to seek treatment, you may use your referral guide to help you begin the process.

**Find a therapist.** You can find a therapist on your own — looking through the phone book or on the Internet, for instance. Or you may use one of the referrals provided to you today. by simply finding a provider listed with your insurance company and calling the number listed. When choosing your provider you will be able to see their specific degree and title. Trained psychotherapists can have a number of different job titles. Nearly all have a master's degree or doctoral degree with specific training in psychological counseling. And, all counselors are required to meet state certification requirements. Medical doctors who specialize in mental health (psychiatrists) can prescribe medications as well as provide psychotherapy.

Some common types of psychotherapists and their titles include: Psychiatrists (M.D. or D.O.), Psychologists (Ph.D. or Psy.D.), Licensed professional counselors (L.P.C.), Licensed social workers (L.C.S.W.), and Psychiatric nurse (A.P.R.N.).

**What you can expect**

Your first therapy session is usually a time for the therapist to gather information about you. The therapist may ask you to fill out forms about your current and past physical and emotional health. All of this information helps the therapist gain a deeper understanding of your situation. It might take a few sessions for your therapist to fully understand your situation and concerns and to determine the best approach or course of action.

The first session is also an opportunity for you to interview your therapist to see if his or her approach and personality are going to work for you. Make sure you understand:
- His or her approach or type of therapy
- What type of therapy is appropriate for you
- The goals of your treatment
- The length of each session
- How many therapy sessions you may need
- At any time during therapy, especially in the beginning, don't hesitate to ask the therapist questions.
- If you don't feel comfortable with the first psychotherapist you see, try someone else. Having a good "fit" with your therapist is critical for psychotherapy to be effective.

Starting psychotherapy.
Your psychotherapy sessions will likely take place in your therapist’s office in an office in a medical clinic, an office building or home office. It is possible to also meet in a hospital setting if you are admitted for treatment. You'll probably meet with your therapist once a week for a session that lasts 45 to 60 minutes.

During psychotherapy.
For most types of psychotherapy, you and your therapist sit facing each other during sessions. Your therapist encourages you to talk about your thoughts and feelings and what's troubling you. Don't worry if you find it hard to open up about your feelings. Your therapist can help you gain more confidence and comfort.

Your therapist may ask you to do "homework" — activities or practices that build on what you learn during your regular therapy sessions. Over time, discussing your concerns can help improve your mood, change the way you think and feel about yourself, and improve your ability to cope with problems.

Confidentiality.
Except in very specific circumstances, conversations with your therapist are confidential. However, there are certain situations in which a therapist is required by law to report any concerns to authorities. These include:
- Threatening to harm yourself or commit suicide
- Threatening to harm or take the life of another person
- Admitting to abusing a child or a vulnerable adult — someone over age 18 who is hospitalized or made vulnerable by a disability

Length of psychotherapy.
The length of treatment generally depends on why you're being seen. It may take only weeks to help you cope with a short-term situation. Or, treatment may last a year or longer if you have a chronic mental illness or other long-term concerns.
The number of psychotherapy sessions you need— and how frequently you need to see your therapist — depends on such factors as:
- Your particular mental illness or situation
- The severity of your symptoms
- How long you've had symptoms or been dealing with your situation
- How quickly you make progress
- How much stress you're experiencing
- How much your mental health concerns interfere with day-to-day life
- How much support you receive from family members and others

Results
Psychotherapy may not cure your condition or make an unpleasant situation go away. But it can give you the power to cope in a healthy way and to feel better about yourself and your life.

Reference: Information obtained from the Mayo Clinic

Frequent Concerns:

I am not sure that my problems can be solved with treatment.
- The vast majority of those suffering from depression or emotional problems are benefited from some form of treatment. Although it may take time and work to find the treatment that works the best for you, it is likely that you can resolve many of your difficulties through the use of medication or psychotherapy.

I am afraid that my therapist will judge me or think that I am abnormal.
- Therapists are trained to treat every patient with compassion and understanding. Your therapist will help you to work through your difficulties with empathy and without judgment.

If I go to therapy I may be hospitalized against my will.
- While hospitalization is a form of treatment, it is only used in the most severe cases and is not likely to be necessary.
Script for GAINS Intervention

Note: The following intervention will be completed with a worksheet that will introduce the GAINS acronym and steps (e.g., identification of Goals, Avenues, Impediments, and Necessary Steps). It will follow with each of the questions, answers, and plans addressed in the intervention script. The patient will be provided the worksheet to take home and aid in treatment-seeking.

Now that we have discussed the fact that you have indicated experiencing some symptoms associated with depression, I would like to spend some time talking to you about how these experiences may be affecting your life and what choices you have. One of the most problematic consequences of depression is how it gets in the way of you being able to live the life that you want to live. This might include being a good romantic partner, parent, family member, friend, employee, or member of society. Depression may get in the way of you being able to take part in the activities and hobbies you enjoy as well as your goals and future plans. Depression may be preventing you from feeling like you are making a contribution or living a happy and fulfilling life. What are some of the things that you consider to be important - the things you value in life?

Recently, have you noticed any of your feelings of ____________ (use some of the specific symptoms previously endorsed by the patient) getting in the way of you being able to do this (i.e., be a good mother, be valuable employee, etc.)?

What are some of the things that you have tried to overcome these feelings and live the life you want? (Elicit as many strategies as possible)

Have you found that any of these things worked either in the short- or long-term? (Likely some will have short-term effects but not long-term- point out that nothing has been effective so far)

Are there things that you have given up or lost because these strategies weren’t working and you were still feeling ______________ (use specific symptoms)?

It sounds as though you have some things that you consider to be really important to your life such as “being a good mother” (use previously endorsed value), but your symptoms of depression are really getting in the way of you being able to do this. Even when you try to overcome these feelings, it looks like nothing is resolving the problem in the long-term and you are losing a lot (reference anything that has been noted such as marital difficulties, poor work performance, pleasure in life). I wonder if you have considered seeking out professional treatment. Are there things that have prevented you previously or might prevent you now from seeking treatment?
(Elicit as many reasons as possible why the patient would not want to seek professional mental health care)

It sounds as though some of these concerns may have been addressed now that you have more information about depression and treatment. The other concerns and beliefs such as X, X, and X do make it distressing to attend treatment if you believe them to be true. I wonder if it would be possible to have those concerns and still seek treatment in order to achieve the things that are most important to you (reference the values stated earlier). Has there ever been a time in your life when you had a lot of concerns, reservations, doubts, or discomfort about a situation, but you did it anyway? (May provide examples such as pregnancy, dieting or sports training, school work, surgery, moving, ending a dissatisfying relationship, going to the dentist- these are all situations which may include a lot of physical and mental discomfort but are in the service of a bigger value.)

Do you think you may be willing to have your concerns and possible discomfort and still seek out treatment knowing that is necessary to get the things you value?

What concrete goals can you set that will help you get to this value?

(Ideally, the goal will be to make an appointment at a mental health service)

What actions are needed to get to that goal?

(Create a very detailed plan that leads to making and attending an appointment. This should include deciding where to call, when to call, what to say on the phone, and how to get to the appointment. Stress the importance of setting manageable goals that are broken down into many small steps.)

There are a few things that one can do to make reaching goals more likely: visualize each of the steps, cope ahead, and use positive self-talk, and. Take your time and you visualize yourself going through each of these steps.

What are some of the things that may get in the way of being able to follow through on these plans? (Ask about barriers for each action and elicit situational barriers as well as thoughts and emotions).

To cope ahead, we can try to anticipate these problems and think of alternative actions that will move us toward the goal. What are some things you can do if you run into that problem (referencing any barriers proposed)?

Now that you have a goal to go to treatment so that you can live the life that is important to you (may reference specific value here), you are ready to take the steps that are necessary to get you there. Remember that completing these steps may not always be easy or comfortable, but you can have those worries or doubts and still take the steps to get healthy. Visualizing yourself making the steps toward seeking treatment and using positive self-talk that encourages you may be helpful.
Do you think that treatment is something that you can and will pursue?
(If yes, then complete intervention. If no, then elicit more barriers and help problem-solve then complete intervention.)
## Appendix B: Tables

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<th>Variable</th>
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*Table 1: Demographic Data and Frequency of Treatment-seeking*
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Table 2: Treatment-seeking Attitudes and Intentions: Mean Scores and Correlations with Sociodemographic and Psychological Constructs

Note: ATSPPH = Attitudes toward Seeking Professional Psychological Help; Past Treatment = personal history of mental health treatment; Friend Past Treatment = friend/family with history of mental health treatment; Previous Help = Number of sources one sought help from in the past month; Future Help = Likelihood of seeking help from various sources in the proceeding month; BDI-II = Beck Depression Inventory II; PANAS-NA = Positive and Negative Affect Scale, Negative Affect subscale; PANAS-PA = Positive and Negative Affect Scale, Positive Affect subscale; HOPE = Hope scale; AAQ = Acceptance and Action Questionnaire; MSPSS = Multidimensional Scale of Perceived Social Support. a = differences between enhanced referral and avoidance-reduction groups. ** p < .01, * p < .05.
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<th>$t$</th>
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*Table 3: Regression Analysis of Constructs Predicting Attitudes Toward Seeking Professional Help*

*Note:* Friend Past Treatment = friend or family member with a history of mental health treatment use; Previous Help = Number of sources from which one sought help in the past month; Future Help = Likelihood of seeking help from various sources in the proceeding month; MSPSS = Multidimensional Scale of Perceived Social Support.
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<th>β</th>
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*Table 4: Regression Analysis of Constructs Predicting Likelihood of Seeking Help from Various Sources in the Proceeding Month*

*Note: ATSSPH = Attitudes toward Seeking Professional Psychological Help; ATSSPH Need = Recognition of Need for Psychological Help subscale; ATSSPH Stigma = Stigma Tolerance associated with Psychological Help subscale; ATSSPH Confidence = Confidence in Mental Health Professionals subscale; Friend Past Treatment = friend or family member with a history of mental health treatment use; Previous Help = Number of sources from which one sought help in the past month; HOPE Agency = Agency subscale; HOPE Pathways = Pathways subscale; AAQ = Acceptance and Action Questionnaire; MSPSS = Multidimensional Scale of Perceived Social Support; Family = Family subscale; Friend = Friends subscale; Significant other = Significant other subscale*
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<td>Past Medication Use</td>
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*Table 5: Means Scores on Sociodemographic and Psychological Measures by Intervention Group* (Continued)
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Note: ATSPPH = Attitudes toward Seeking Professional Psychological Help; ATSPPH Need = Recognition of Need for Psychological Help subscale; ATSPPH Stigma = Stigma Tolerance associated with Psychological Help subscale; ATSPPH Openness = Interpersonal Openness subscale; ATSPPH Confidence = Confidence in Mental Health Professionals subscale; Past Treatment = personal history of mental health treatment; Friend Past Treatment = friend or family member with a history of mental health treatment use; Previous Help = Number of sources from which one sought help in the past month; Future Help = Likelihood of seeking help from various sources in the proceeding month; BDI-II = Beck Depression Inventory II; PANAS-NA = Positive and Negative Affect Scale, Negative Affect subscale; PANAS-PA = Positive and Negative Affect Scale, Positive Affect subscale; HOPE = Hope scale; HOPE Agency = Agency subscale; HOPE Pathways = Pathways subscale; AAQ = Acceptance and Action Questionnaire; MSPSS = Multidimensional Scale of Perceived Social Support; Family = Family subscale; Friends = Friends subscale; Significant other = Significant other subscale. * = differences found between the enhanced referral and avoidance-reduction groups only, $a = p < .05$
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<th>Adj. R²</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>Wald χ²</th>
<th>p</th>
<th>e^β</th>
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*Table 6: Logistic Regression Analysis Summary for Constructs Predicting Treatment-seeking: Restricted Variable Significance at p < .05*

*Note: ATSPPH = Attitudes toward Seeking Professional Psychological Help; AAQ = Acceptance and Action Questionnaire. ** p < .01, * p < .05.*
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<th>SE B</th>
<th>$\beta$</th>
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*Table 7:* Logistic Regression Analysis Summary for Constructs Predicting Treatment-seeking: Restricted Variable Significance at $p < .20$

*Note:* ATSPPH = Attitudes toward Seeking Professional Psychological Help; AAQ = Acceptance and Action Questionnaire. **$p < .01$, *$p < .05$.  
(Continued)
Table 7 Continued

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Table 7: Logistic Regression Analysis Summary for Constructs Predicting Treatment-seeking: Restricted Variable Significance at $p < .20$

Note: ATSPPH = Attitudes toward Seeking Professional Psychological Help; AAQ = Acceptance and Action Questionnaire. ** $p < .01$, * $p < .05$. 
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<td>4.96</td>
<td>0.03</td>
<td>0.36</td>
<td>0.15, 0.89</td>
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*Table 8: Logistic Regression Analysis Summary for Intervention Predicting Treatment-seeking*

*Note: ATSPPH = Attitudes toward Seeking Professional Psychological Help; AAQ = Acceptance and Action Questionnaire. ** $p < .01$, * $p < .05$.*
<table>
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*Table 9: Intervention Group Mean Scores on Measures of Depressive Symptoms at each Assessment*

*Note: Five outliers were not included in BDI-II analyses. BDI-II = Beck Depression Inventory II; HOPE = Hope scale.*
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Table 10: Regression Analysis Summary for Constructs Predicting Depressive Symptoms at Follow-up (\( n = 57 \))

Note: ATSPPH = Attitudes toward Seeking Professional Psychological Help; AAQ = Acceptance and Action Questionnaire; BDI-II = Beck Depression Inventory II; HOPE = Hope scale.
Figure 1
Participant Flow

Patient visits ($n \sim 12,300$)

Provided PHQ ($n = 1,488$)

Completed PHQ ($n = 1,255$)

Score of 10 or above ($n = 353$)

Referred to Study ($n = 127$)

Randomized ($n = 121$)

Score below 10 ($n = 902$)
  Scored by Staff ($n = 346$)

Ineligible ($n = 6$)
  Current full treatment ($n = 6$)

Allocated to Enhanced Referral ($n = 41$)
  37 participants completed follow-up
  23 sought treatment
  14 did not seek treatment

Allocated to Psychoeducation ($n = 40$)
  40 participants completed follow-up
  23 sought treatment
  17 did not seek treatment

Allocated to Avoidance-reduction ($n = 40$)
  39 participants completed follow-up
  28 sought treatment
  11 did not seek treatment