EXPECTATIONS AND BELIEFS ASSOCIATED WITH DIFFERENT TREATMENT

MODALITIES FOR DEPRESSION

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Abstract

This study utilized a vignette based approach to understand lay persons' beliefs about psychotherapy and anti-depressant medication for the treatment of depression. It was hypothesized that treatment recommendation would influence belief in cause of depression and that depression would be viewed as more permanent when a person is treated with anti-depressants than with psychotherapy. Differences in stigma associated with these two treatments were also examined. The results showed no difference in perceived cause of depression by treatment recommendation condition. The results indicated that respondents who received a vignette about a man receiving a psychotherapy treatment for depression rated the depression as less likely to recur than respondents reading the vignette about a medication treatment. The results showed no difference in the overall level of stigma by treatment condition.

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Introduction to the study

Expectations and Beliefs Associated with Different Treatment Modalities for Depression

Imagine a person that has stopped going to work and going out with friends. Maybe he stays in bed all day, moves and talks slowly and complains of difficulty concentrating. He is diagnosed as depressed by a mental health professional, but what does that mean to you? Is he just feeling sorry for himself, did he never learn how to deal with difficulties that arise in the course of life, or does he have a biological problem? Let us also imagine this man is getting treated for his depression. Does the type of treatment affect how you think about why he is depressed? What influences your perception of whether he is going through a onetime episode or if he is likely to become depressed again in the future? If his treatment does help, do you think it is a long term answer or just a temporary fix? Your answers to these questions might influence how you see his persona and view his illness.

The purpose of this dissertation is to answer questions about how a recommendation and subsequent treatment for depression with either a psychopharmacological or psychotherapeutic treatment affects perceptions of the illness. Additionally, the different expectations and beliefs about the treatments themselves will be examined. Specifically, using an experimental vignette method, it will be examined whether a treatment recommendation can influence the perceived cause of depression, whether different treatments for depression affect beliefs about the permanence or liability to relapse characterize the illness, and whether different treatments are associated with different levels of stigma directed towards the individual diagnosed with depression.

Historical and Cultural Contexts of the Issues

The questions asked in this dissertation would have been an altogether different undertaking in an earlier era. It is only natural that as the understanding of depression has changed, so too has the way in which depression is treated. However, it is not just a direct line from increased knowledge to different treatments of depression. New and different treatments also have informed the scientific understanding of depression. Furthermore, the lay public may have views and beliefs about depression and how it is treated that are different from that of mental health professionals. Although professionals may be a source of information about understanding depression, these changes may be slow to disseminate and people may be resistant to different views of treatments based on different beliefs and experiences. Additionally, these changes in how depression is understood by professionals and the public are not uniform with evidence existing for both a psychological and biological causes of depression. However, the understanding of depression has shifted to include a greater biological understanding of mental illness in general and depression in particular since the middle of the twentieth century.

The understanding of medication for mental illness has undergone major changes since the 1950's. Before then, drugs were understood as producing certain effects, generally either sedative or stimulant. As such many sedative drugs were used for to either restrain or sedate patients. By contrast, stimulants were used in an attempt to increase energy in depressed patients. However, neither sedatives nor stimulants were used with the intention of treating the disease itself.

After the 1950's, psychiatric drugs came to be seen as working by influencing the disease process itself (Moncrieff, 1999). These new drugs improved patient care and were seen as a revolution in the treatment of mental illness by many professionals. Despite the increase in use,

the idea of taking medication was viewed with a sense of trepidation by many. In 1972, Gerald Klerman wrote about the idea of Pharmacological Calvinism, which he discusses as the view that any drug that makes one feel good is morally questionable. This view may have emerged in a response to substances used illicitly and/or recreationally but was applied to medications which had a similar effect. Antidepressant medications, for example, are designed specifically to make one feel better. He also notes a belief at the time that taking medication is a crutch and less desirable than feeling better through the gain of insight one would get from working through issues in psychotherapy. Klerman remarks that this viewpoint was undergoing significant challenge in 1972 with medication for emotional distress becoming more acceptable.

A second wave of major changes in the use of drugs for the treatment of mental illness came around 1990. Changes in treatment coincided with changes in understanding of mental illness and depression in particular. After a resolution in the US Senate in late 1989 the 1990s came to be known as the 'decade of the brain' which sought to enhance public awareness of the benefits of brain research. Selective serotonin reuptake inhibitors (SSRIs) and other new generation antidepressants were introduced. Between from 1987 and 2007 the rate of people receiving outpatient treatment for depression increased from 0.73 percent to 2.88 percent. Additionally, during that same time period among those who were treated, the use of antidepressant medications increased from 37.3 percent to 75.3 percent, and the use of psychotherapy decreased from 71.1 percent to 43.1 percent (Marcus & Olfson, 2010). In part the change in treatment utilization may be based on newer medications which treat depression more effectively and with decreased side effects.

Although there has been an increase in the use of antidepressants and the decrease in psychotherapy, there remained a preference by the public for psychotherapy over antidepressants

(Banken & Wilson, 1992; Dwight-Johnson, Sherbourne, Liao, & Wells, 2000; Jorm et al, 1997; McKeen & Corrick, 1991). Despite this preference, antidepressant use continued to rise while psychotherapy has declined. It may be that the shift is in part financial in nature. Marcus and Olfson (2010, pg. 151) note, "… although third-party coverage of antidepressants and other psychotropic medications is typically generous, significant limits commonly exist on coverage of psychotherapy services."

With the proliferation of psychopharmacological treatment of mental illness in general, people have been prompted to examine what taking drugs for depression means. The question has been raised if medications do more than just treat depression but instead change personality. Peter Kramer's 1993 book *Listening to Prozac* and the controversy surrounding it are reflective of the changes that occurred in thinking about how depression and different types of treatment.. Kramer described how the biological and psychological had become more difficult to separate. He uses the term "cosmetic psychopharmacology" to describe how Prozac and other medications can make people feel "better than well" and result in them being better than they were before their depressive episode. He proposed that Prozac has the ability to "transform" one's behavior, as well as the concept of self. Kramer gives descriptions of his patients who through taking Prozac not only had their depression alleviated, but raised self-esteem, became more outgoing and successful. Medication was viewed by many as a liberator that freed one to be able to reach their potential without the yoke of a neurochemical imbalance holding them back. However, others felt, that even if this new personality is happier and more successful, it is inauthentic and unearned (Karp, 2007). Kramer's book was seen by some as promoting the use of medication to not only treats the disease of depression but to treat everyday unhappiness (Dworkin, 2001).

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It is helpful to understand how the proliferation of different treatment in the United States is reflected in beliefs about depressions and expectations of different types of treatment.   As new types of treatments become more commonplace the way in which laypeople think about depression and its treatment may change as well. If the public hears from doctors and direct to consumer advertising that a pill can help them feel better, this may influence their beliefs about this treatment. Additionally, as advances are made in psychotherapy treatments for depression, this too may influence the public's beliefs and expectations about depression.

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Chapter II

Literature Review

Stigma

While this dissertation is not primarily concerned with stigma, interest in the impact of successful treatment of mental illness on beliefs about the nature of the illness treated grew out of developments in the stigma literature. Mental health treatment is an issue strongly associated with stigma and research on stigma provides useful information about factors that affect perceptions of depression treatment.

Stigma refers to a global devaluation of certain individuals on the basis of some characteristic they possess, related to membership in a group that is disfavored, devalued, or disgraced by the general society (Hinshaw, 2007, p. 23). It has been demonstrated in numerous studies that having a mental illness or even the label of mental illness increases an individual's stigma (Sayce, 1998, 2000).

In order to measure stigma, researchers have often used social distance measures in order to attempt to capture the desire to avoid the stigmatized individual. Social distance is a construct that attempts to explain differences in social closeness and intimacy. For individuals with whom one is comfortable or one finds attractive, one will attempt to decrease social distance, while for those one dislikes or is uncomfortable with, a person will attempt to increase social distance. Social distance measures attempt to capture a person's comfort at various social distances. These measures have shown increased desire for distance from stigmatized individuals in comparison to non-stigmatized individuals.

One important area where stigma plays a role is in mental illness treatment. Most studies examine how stigma is a barrier to treatment, or impairs its effectiveness. Research

typically suggests stigma negatively impacts treatment seeking (Sirey, Bruce, Alexopoulos, Perlick, Raue, Friedman, & Meyers, 2001a; Corrigan & Cooper, 2005; Corrigan, et al., 2001; Corrigan & Watson, 2004, Cooper, & Corrigan, 2003, Wahl, 1999), Once in treatment, a person with depression believes he or she is stigmatized by others, at least compared to those in treatment for a non-mental health condition (Pyne et. al., 2004). Not surprisingly, stigma also negatively impacts treatment adherence (Sirey et al, 2001a, Sirey, Bruce, Alexopoulos, Perlick, Raue, Friedman, & Meyers, 2001b; DiMatteo, Lepper, & Croghan, 2000).

A much smaller literature has found successful treatment for a mental illness decreases stigma for some illnesses (Sirey et al. 2001a). Exactly when or why this happens is not clear, but Goldman (2010) argues for the need to measure stigma as symptoms decrease through effective treatment, and suggests symptom reduction can be a path to stigma reduction. Consistent with this claim is the finding of Pyne et al. (2004) that higher severity of depression corresponded with higher stigma.

Coinciding with the developments of the 1990s described in the introduction – the designation as the "decade of the brain" period, and the upswing in antidepressant use – was the initiation of an ambitious effort to combat stigma and improve mental health treatment in a single stroke. The key strategy is an effort to relabel mental illness as a "disease" like any other (Jorm, Korten, Jacomb, Christenssen, & Henderson, 1999; Jorm, Angermeyer, & Katschnig. 2000). The logic in the relabeling of mental illness as a disease like any other is that, by counteracting the view of mental illness symptoms as being failures of character, a biological dysfunction view puts the symptoms beyond an individual's control, thereby making them blameless. The research growing out of this effort, and the questions that were raised about its logic by the research, form an important backdrop for the study reported in this dissertation.

This relabeling of mental illness, depression in particular, as a disease like any other seeks to emphasize the biological cause of depression in order to change perception about mental illness. Programs designed to destigmatize mental illness have attempted to convince the public that persons with psychological difficulties are 'ill' in the same sense as people with other medical conditions (Jorm, Korten, Jacomb, Christensen, Rodgers, & Pollitt, 1997; Rahav, 1987; Schwartz & Schwartz, 1977; Wahl, 1987). This campaign was pursued despite debate about the actual contributions of psychosocial and biological factors to various types of mental illness (Bentall, 1990; Boyle, 1990; Read, 1997; Thompson, Stuart, Bland, Arboleda-Florez, Warner, & Dickson, 1985).

Even if the movement to relabel mental illness were successful, the change might have unintended consequences. When thinking about a mental illness as a disease, individuals do not just change their thinking about one aspect of the illness (Haslam & Ernst, 2002). For example, genetics are an important aspect of biological explanation. Phelan (2005) no difference in the stigma associated with depression and schizophrenia when either no explanation or a genetic explanation of the illness was provided to subjects. However, some evidence was found that when the illness had a genetic label, subjects rated the mental illness as more permanent and serious. Thinking of depression as a disease attempts to change the causal attribution, but differences in the causal attribution of depression are also related to beliefs about immutability, and being more sharply bounded.

There is evidence that the movement to view mental illness as a disease like any other has not been effective at reducing the overall stigma associated with mental illness (Read, 2001; Read, 2007; Read & Harre, 2001; Read, Haslam, Sayce, Davies, 2004). In fact, in illnesses like schizophrenia, some evidence suggest that the labeling of the illness as a disease has increased

desires for social distance and fear (Haslam, Bastian, Bain, Kashima, 2006). Goldstein & Rosselli (2003) found that a biological view of the etiology of depression is associated with reduced blame of the depressed individual. However, a biological view of depression was also associated with perceptions of less controllability of depression. This change in views of the permanence of mental illnesses could potentially impact stigma negatively.

Theories of Etiology of Depression

In order to understand perceptions of depression, it is helpful to understand both professional theories of etiology as well as lay perceptions of the illness. Depression itself has been understood in many ways. There are numerous theories of etiology utilizing several biological and psychological mechanisms to explain the symptoms and susceptibility of those diagnosed with depression. However, the laypersons' understanding of what Major Depressive Disorder is and its causes may be inconsistent with professional theories of etiology.

From a professional perspective, data are inconclusive about the causation of depression as well as what may be the biological dysfunction that accounts for effective pharmacological treatment (Maes & Meltzer, 1995; Schatzberg & Schildkraut, 1995). There is significant counterevidence to the monoamine hypothesis of depression which postulates that the deficit of certain neurotransmitters is responsible for the corresponding features of depression and at best it is unconfirmed (Delgado & Moreno 2000; Delgado, 2000; Heninger, Delgado, Charney, 1996; Horgan 1999; Mendels, Stinnett, Burns, Frazer, 1975; Murphy, Andrews, Wichems, Li, & Tohda 1998). However, there is strong evidence for a genetic component to depression (Kendler, Neal, Kessler, Heath, & Eaves, 1992; Sullivan, Neale & Kendler, 2000; Sullivan, Prescott, & Kendler, 2002). Additionally, there is also evidence for environmental stressors inducing depressive episode (Abramson, Metalsky, & Alloy, 1989; Brown & Harris, 1978; Kessler, 1997).

Caspi, Sugden, Moffitt, et al, (2003) posit a genetic predisposition as well as the influence of life stressors on depression.   Free & Oei, (1989) reviewed the literature regarding the pathogenesis of depression and concluded that neither psychological nor biological models can solely account for the origins of depression, and an interactional approach to depression is advocated.

From a lay person's perspective, it is also helpful to understand public attitudes towards a label that is based on either a psychosocial or a biological explanation of depression. Members of the United States public prefer explanations involving environmental stressors for mental illness (Read, 2001; Read & Harre, 2001; Sarbin & Mancuso, 1970; Wahl, 1987;). Angermeyer & Matschinger's (1996) study in Austria and Germany found similar results to public perceptions of mental illness, with an exception that the relatives of persons with a diagnosis of schizophrenia held more biological/ constitutional beliefs about the cause of the illness. However, these studies surveyed preexisting attitudes towards mental illness and did not seek to measure how malleable these attitudes are to alternative explanations.

When Pescosolido, Martin, Long, Medina, Phelan, & Link (2010) used data from the General Social Survey to examine longitudinal changes in the public's attitudes towards major depression, they found in 2006 that more people endorsed a neurobiological cause but there was no increase in social distance or perceived danger associated with people with a diagnosis of major depression did not decrease significantly. These results may indicate some success in the disease like any other model in changing perceptions of the cause of depression to a neurobiological model, but not in reducing stigma.

It may be that the movement to relabel mental illness as a disease like any other has not reduced stigma but along with other factors have influenced how lay person's think about

depression including its cause. These changes in belief about etiology may be related to appraisals and expectations of treatment.

Treatment of Depression

Beliefs about treatment. Most members of the public who participated in a survey by McKeen & Corrick, (1991) believe that mental disorders are treatable, but may have different attitudes towards different treatments for depression.   Researchers (Jorm et al. 1997, McKeen & Corrick, 1991; Priest, et al. 1996) have shown that psychological treatments of depression are viewed as more effective than pharmacological treatments by the majority of the lay public. In surveys of individuals with a depression diagnosis, approximately half of individuals believe that depression may be chronic (Brown et al., 2001; Brown et al., 2007; Vollmann et al., 2010).

Before considering how the understanding of treatment may relate to beliefs about depression as an illness, it is important to understand how lay people perceive how psychotherapy and medications treatments work to treat depression. Furnham, Pereira, & Rawles, (2001) found that participants who completed a questionnaire did not distinguish between multiple different types of talk therapies including psychoanalysis, gestalt and existentialist therapies, or between more social-behavioral therapies like cognitive behavioral therapy, assertiveness and thought-stopping. The participants viewed all of these therapies as involving talk aimed at changing cognitions and emotions. Psychotherapy was seen as particularly effective for those experiencing depression.

Laypersons also do not appear to differentiate between different types of psychopharmacological treatments for depression and may have views which are vague or erroneous. Furthermore, in contrast to counseling, psychotropic drugs have been poorly accepted by both patients and their relatives (Angermeyer, Däumer, & Matschinger, 1993;

Manheimer, Davidson, Balter, Mellinger, Cisin, & Perry, 1973; Slovic, Kraus, Lappe, Letzel, & Malnfors, 1989; Van Putten, 1974). Priest et al. (1996) in a survey of the general public found most (85%) believed counseling to be effective to treat depression but were against the use of antidepressants, and many subjects (78%) believed antidepressants were addictive. Kessing, Hansen, Demyttenaere, & Bech, (2005) found a large proportion of the patients and their partners surveyed had erroneous views as to the effect of antidepressants and that patients over 40 years of age consistently had more erroneous ideas concerning the effect of antidepressants and a more negative view of antidepressants in general. This study demonstrates that even persons who have firsthand experience with antidepressant medication and their partners often do not fully understand the effects of these medications.

However, as Pescosolido et al. (2010) demonstrated, the public's perceptions of mental illness are not static and the information in the Manheimer et al., (1973) and Van Putten, (1974) may no longer reflect popular attitudes. Additionally, the Angermeyer et al., (1993) and Slovic, et al., (1989) studies are surveys of attitudes in Germany and Sweden respectively and persons residing in the United States may hold different beliefs and attitudes. The more recent finding by Pescosolido, Martin, Long, Medina, Phelan, & Link (2010) indicates the public is likely to endorse treatment for depression from a doctor or psychiatrist which may be interpreted to indicate a more increased acceptance of the use of medication for the treatment of depression.

The reason antidepressant medication is poorly understood may relate to the manner in which it is presented to the public. Lacasse & Leo (2005) discuss how direct to consumer advertising may be misleading and utilize the assumption that depression is in fact *caused* by a serotonin deficiency. The same logic in creating the monoamine hypothesis, that the mechanism

of action in antidepressants can be used to infer the cause of depression, is used in marketing it to consumers.

In summary, neither psychotherapy nor antidepressants treatments for depression appear to be well understood by the lay public. In the case of psychotherapy, there appears to be a vague understanding of how talking and support can help one feel better. In the case of antidepressants, there is a view (advanced by the drug companies themselves) that antidepressants help to adjust a neurochemical deficiency.

Interestingly enough, a survey found that psychiatric residents seeking mental health treatment for any reason tended to view psychotherapy as less stigmatizing than medication (Fogel, Sneed, & Roose, 2006). This bias exists even with a group who would be more likely to have embraced a disease like any other view and as a profession tends to ascribe a biological explanation to mental illness. If this bias exists within a group of mental health professionals, one must wonder if there is a similar perception of treatment among the lay public and what underlies this difference.

Kuyken, Brewin, Power, & Furnham (1992) examined causal beliefs in depression in lay persons, clinicians, and depressed patients using their own structured interview to measure beliefs. Kuyken et al. (1992) found that depressed patients are more likely to endorse biological reasons for depression than lay persons or clinicians. Furthermore, clinicians were more likely to endorse childhood vulnerability factors and unconscious processes as causes for depression. Banken & Wilson (1992) found that when presented with a vignette of a person with either major depression or dysthymia, lay respondents rated three different psychotherapies (cognitive, behavioral, and interpersonal) as more acceptable than a pharmacological treatment. This

preference may be in part driven by a thematic match between perceived cause of the illness and the type of treatment.

Beliefs about causes and treatment. One possible reason for this tendency to favor psychological treatments over medication treatments may involve the perceived cause of the depression. Depending on the explanation one has for depression, different treatments might be seen as preferable (Iselin & Addis, 2003; Phelan, 2005). For example, persons with a biological explanation of depression prefer a biological treatment while those with a psychological explanation favor psychotherapy. This is not to say that those with one explanation would necessarily discount the efficacy of the other treatment, but it is reasonable to assume that a treatment that addresses the underlying perceived cause of the illness would be preferred. However, the explanation of cause of depression and treatment preference may not be as simple as biological explanation equates to medication and psychosocial explanation equates to psychotherapy.

Iselin & Addis (2003) in fact found that treatments which match the causal explanation of depression are viewed as more helpful by both patients and laypersons. The researchers provided causal information about depression and found that those receiving a biological explanation for depression viewed medication as more helpful; while subjects provided with a psychological explanation for depression viewed psychotherapy as more helpful. However, Goldstein & Rosselli, (2003) found that having a biological explanation of depression did not predict greater acceptance of the effectiveness of antidepressants, but was associated with stronger beliefs in the effectiveness of psychotherapy.   Understanding the concordance or lack thereof of an individual's explanation of their own mental illness and the treatment proffered,

may indicate there is not a direct concordance between biological explanation and antidepressants in the minds of lay persons.

In considering biological and psychological reasons given for depression it seems reasonable to consider the categories provided by the "disease like any other model." However, biological reasons can incorporate several different components such as neurochemical imbalance, genetic predisposition, and brain injury. It is reasonable to assume medication can be seen to treat a chemical imbalance more directly than some genetic aspect. Furthermore, the psychological reasons can be broken down into subsets as well. For example, psychological problems can be considered in terms of lack of coping skills, interpersonal problems, loss of significant relationships, and childhood difficulties.

The Reasons for Depression (RFD) questionnaire (Addis, & Jacobson, 1996; Addis, Traux, & Jacobsen, 1995) was devised to assess the reasons laypersons and depressed patients give for depression. By using a factor analysis, Addis and colleagues identified eight categories that people believe are the reasons for depression. These categories were labeled Existential, Achievement, Characterological, Physical, Interpersonal Relationship, Intimacy, Childhood, and Intimacy. The Reasons for Depression (RFD) questionnaire later added a biological subscale (Thwaites, Dagnan, Huey, & Addis, 2004).

It is possible that treatments for depression may be seen to address directly various components of Addis et al.'s reason for depression categories. For example, psychotherapy might be perceived to address childhood or characterological reasons a person might hold for depression. Similarly, antidepressant medication would likely be perceived to address reasons contained on the biological subscale.

Phelan, Yang, & Cruz-Rojas (2006) using a vignette study found that when a genetic explanation for depression [and schizophrenia] were provided; medication and hospitalization were likely to be recommended by laypersons compared to seeing a therapist or general practitioner. These results indicate that a genetic explanation for depression is viewed as consistent with a medication and hospitalization treatment.

The need for congruence with perceived cause of depression and treatment may apply for psychotherapy as well. Khalsa, McCarthy, Sharpless, Barrett, &. Barber (2011) found patients preferring psychotherapy were more likely to endorse childhood reasons for their own depression more strongly than those preferring medication. In the case of patients who prefer a medication treatment, only a biochemical explanation approached significance for endorsement while a genetic one did not.

While perceived cause of depression appear to affect preference for and beliefs about the effectiveness of treatment, the inverse appears true as well. Leykin, Gallop, Masterdam, Shelton, & Hollon (2007) found that successful treatment influenced patients' beliefs about causation of their depression. It was found that if a treatment addresses psychosocial difficulties or biological problems, and is successful, beliefs about causes change to be consistent with the treatment received. However, it is important to understand how this change occurs. Leykin et al. (2007) found beliefs about the cause of depression which are consistent with the successful treatment were not strengthened. The change in belief occurs through a weakening of inconsistent beliefs and not through a strengthening of beliefs that are consistent with the treatment. Successful treatment may preserve a person's beliefs in causes of depression most closely related to the treatment, and diminish beliefs in unrelated causes.

Furthermore, even the recommendation of a treatment may have the potential to affect beliefs about the causation of depression. By recommending a certain type of treatment, it is possible something is implied about the causes of depression. Although many professionals endorse a combination of biological and psychosocial causes of depression, treatments address one perceived cause or the other. By recommending a treatment that addresses one or another cause, the recommendation may be perceived to imply that the cause addressed is primary or carries more weight. It may also be that much as Leykin et al. (2007) showed with successful treatment, that an expert making the treatment recommendation weakens inconsistent explanations for depression that a person might hold.

Although a treatment recommendation itself does not necessarily have implications about the etiology of a person's depression it might be perceived in that manner. Even if the person making the treatment recommendation explains the different causes of etiology, there may be a perceived implication based on the type of treatment that is recommended about etiology. People are inclined to think that the principal features of a cause must match those of the effect. This phenomenon follows the resemblance criterion, which Nisbett & Wilson, (1977) refer to as a version of the "representativeness heuristics". A treatment that has a particular effect can be explained as treating the corresponding cause of the illness. As such, persons may think because a treatment works, this ascribes a matching cause or the reverse that a biological or psychosocial cause means a corresponding treatment will be more effective. Furthermore even if a complex explanation is given for depression, people may focus on one aspect due to the type of treatment which is effective. People tend to believe that complex events should have complex causes, or that small causes have small effects (Nisbett & Ross, 1991). The tendency by the public to believe a treatment that is seen as consistent to a perceived cause of depression is more effective

is not logically required or based on scientific evidence. However, the perceived correspondence between psychotherapy and psychosocial causes as well as psychopharmacology and biological causes are based on thematic similarities and not on logical or scientific connection. Additionally, it is entirely possible that depression could have an entirely biological cause and psychotherapy could still be effective or have a psychosocial origin and medication still work to relieve symptoms.

Mechanisms of treatment. It is also possible that different treatments of depression do not imply a thematic match about etiology and yet still have an influence the perceived chance of recurrence of depression. The way in which different treatments are thought to work may be perceived to have implications about the long term benefit of these treatments and the chance of the recurrence of depression.

Cochran, Pruitt, Fukuda, Zoellner, & Feeny (2008) in researching treatment preference revealed helpful information on how participants in their study think about how psychotherapy and medication work. In the study, women read a vignette that asked them to imagine they had experienced a sexual assault and were experiencing symptoms of Post-Traumatic Stress Disorder (PTSD). After reading standardized treatment options for a pharmacotherapy (sertraline) and psychotherapy (cognitive behavioral treatment), participants made a hypothetical treatment choice and reported the main reasons for their choice. Women often cited reasons surrounding the effectiveness of a treatment as the primary reason for their treatment preference, suggesting potential masking of symptoms with the medication and more logical, long-lasting effects with the psychotherapy. Respondents also provided other common reasons underlying treatment preference including, a wariness of the medication and positive feelings about talking in psychotherapy.

However it is unclear if depression will elicit a similar belief about psychotherapy and medication. In PTSD there is a clear precipitant in the traumatic event that is easily identified as the cause of the symptoms and diagnosis of PTSD. Individuals who view depression as having an environmental precipitant may view a medication treatment in much the same way as the women in Cochran et al. (2008) study. They may view medication as masking the symptoms of depression. If this is the case it seems likely that with a discontinuation of a medication treatment, these individuals would expect symptoms to reemerge. Additionally, psychotherapy might be viewed as a more logical treatment with long-lasting effects.

Another study which addresses the issue of how psychological and medication treatments are understood by laypersons was conducted by Vincent & Lionberg (2001) on insomnia. In this study participants who suffered from insomnia read descriptions of a pharmacological and psychological treatment for insomnia and rated each treatment along several dimensions. Vincent and Lionberg found psychological treatment, compared to pharmacological treatment, was judged to be no more effective in the short term, more effective in the long-term and less likely to produce negative side effects.

In both the Vincent & Lionberg (2001) on Insomnia and Cochran et al. (2008) on PTSD there was a preference for psychotherapy over psychopharmacological treatment. Both studies contained responses that described the manner in which the treatments worked and the long term benefits as being reasons for the preference. This current study is not about treatment preference; however, the results of these studies indicate that when thinking about treatments, lay persons use information about the perceived long term benefit when assessing the treatment. Treatment modalities may be associated with different levels of optimism about treatment outcomes because there may be a difference in the expectation of future depressive episodes for

different treatment modalities. Treatments may be seen as effective, and one key area of

effectiveness relates to the permanence of the treatment. If a treatment is seen to "fix" what is

wrong with a mentally ill person, it is likely to be seen as more long lasting and lead to decreased

expectation of future episodes of depression.

Potential interaction between cause, controllability, and timeline. Researchers

working with illness representation models (Leventhal, Meyer, & Nerenz, 1980; Meyer,

Leventhal, & Gutmann, 1985) have found that individuals have mental representations of

illnesses that consist of multiple and interacting dimensions, such as- identity (symptoms and

illness labels), causes, consequences, timeline, and controllability/treatability. In this model, an

individual uses strategies to cope or control the symptoms of their illness, based on their illness

representation. After implementing the treatment strategy, the individual re-evaluates their

symptoms. If they view the treatment strategy as successful, their hypotheses regarding the

illness are confirmed. However, if the treatment was ineffective in reducing the symptoms, the

individual repeats the process.

While this model focuses on how individuals deal with their own symptoms, it can be

used to conceptualize possible interactions between treatment effects and perceived causes, from

an observer's perspective. For example, when there are different valid explanations of the causes

of major depression, various interactions can be conceptualized among beliefs on illness cause,

illness timeline, and illness treatment.

It is reasonable to consider how the interaction of the dimensions posited by Leventhal et

al. (1980) can be applied to the public's model of depression as an illness and its treatment. In

the public's model of depression, the dimensions of causes, controllability, and timeline might

influence desire for social distance. The thrust of the disease like any other model was to change

the public perception of the cause of the illness to a biological explanation, which may have the additional effect of influencing the perceived controllability of depression. The lack of control reduces blame but may lead to the illness as being less controllable through treatment (Goldstein & Rosselli, 2003). Additionally, as Phelan (2005) demonstrated, a genetic explanation of depression leads to increased belief in the permanence of the illness and may influence perceptions that depression is a chronic condition. These studies map on very well to the interaction between the dimensions of causes and perceived controllability posited in the illness representation model posited by Leventhal et al. (1980). Furthermore, if different treatment modalities of depression are perceived by the lay person to indicate a corresponding etiology, then this perception may in turn influence the expected timeline of depression.

There are two possibilities that could lead to different types of treatment influencing the perceived permanence of depression. First, it is possible that a treatment is seen as associated with a particular belief about the cause of depression. For example, a medication treatment might be seen to imply a biological cause. It may then be that the biological cause is viewed to indicate that the depression is more permanent. Second, treatments may not necessarily be connected with a certain cause; however, there is a perceived long term benefit from the treatment and that long term benefit can lead to less chance of future episodes.

The way in which psychological and psychopharmacological treatments work may be perceived to have implications about likelihood of recurrence of depression. Even if depression is viewed as a recurring or permanent condition, the way in which treatments operate may be seen to affect the course of the illness. This possibility also appears to map onto the illness representation model in that the long term benefits (treatability) influence the chance of future episodes (timeline). Just as Cochran et al. (2008) Vincent & Lionberg (2001) demonstrated in

their research about PTSD and Insomnia, the mechanisms by which psychotherapy and antidepressant medication are perceived to work may also influence the perception of the long term benefits of these treatments.

It is unclear how medication and psychotherapy treatments for depression are thought to work in terms of the long term benefit they provide. One possibility is that medication may be seen to correct a neurochemical imbalance that is seen as a biological defect. The medication might be seen to correct the imbalance, yet the treatment might not be seen as providing any protection against future episodes. It is also conceivable that medication could be seen to adjust brain chemistry permanently or at least for the long term. Psychotherapy may in turn be perceived to treat psychological and/or social difficulties. It may be thought to assist a person in modifying thoughts, feelings, and behaviors that are associated with depression. It may be viewed as strengthening areas where a person has deficits that lead to feelings of depression and as such have more permanent benefits than medication. It is also possible that psychotherapy instead of being perceived to permanently modify thoughts, feelings and behaviors is seen as being a process where a person can receive support and nurturance that helps through a difficult time without providing any lasting benefit. As such the way in which psychotherapy and antidepressant medications are perceived to work may have implications about the chance of future recurrence of depression.

Purpose of Current Study

The aim of this study is to explore further the treatment of depression as it relates to views of etiology, stigma, and perceived permanence of the diagnosis. To that end, the purpose of the proposed study will be to explore three hypotheses. The first is that a treatment recommendation influences views of the cause of depression. Based on a review of the literature

it is hypothesized that if someone is prescribed medication, it is more likely that their depression will be believed to have a biological cause. Similarly, if someone is prescribed psychotherapy, it is more likely their depression will be believed to have a psychological cause. Second, the study seeks to answer questions about the impact of successful treatment by medication or psychotherapy on beliefs about the likelihood of depression recurrence, and the long term benefits of the treatments. Third, I also examine in an exploratory way whether there is a difference in the stigma directed towards a person based on the type of treatment they receive as measured by social distance.

Chapter III

Research method

Participants

The participants in this study were approached on the campus of Rutgers University in New Brunswick at the Busch Campus Center and the questionnaire was handed out in an undergraduate psychology class offered at Rutgers University. The requirement for inclusion in this study was that the participant must 18 years of age at the time of their participation. All participants were asked in the consent form to affirm they are 18 years of age before completing a survey.

Cohen (1988) proposed rules of thumb for interpreting effect sizes which is commonly used in social science research where a "small" effect size is .20, a "medium" effect size is .50, and a "large" effect size is .80. In order to detect a medium effect (.50) with 80% power it is necessary to have 62.68 [(2) ^2(1-.06/.06) = 62.68] subjects per condition or a total of 125 subjects in this experiment. In order to increase power or in order to detect a smaller effect size with the same level of power it is necessary to increase the number of participants. To ensure adequate power to detect a medium effect, data were collected from 155 subjects.

Procedure

Each participant was approached and asked if they would be willing to participate in a brief study about depression. The researcher was blind as to which condition participants were completing in order to avoid a bias. This was done by mixing questionnaires in a single stack

and giving respondents whichever questionnaire was on top when they agreed to participate in

the study. In this way, participants were assigned to either the psychotherapy (see appendix B)

or medication (see appendix C) treatment conditions.

Participants were asked to carefully read a vignette about a person and answer questions

related to their beliefs about that person's depression based on the information provided in the

vignette. Consent forms (see appendix A) were read by all study participants and asked

participants to affirm they were of 18 years of age. The consent forms described the study as

having no risk beyond those encountered in everyday life but did not include specific details of

the study. After participants read the consent forms, they were given a copy of the questionnaire.

Completion time of the questionnaire took approximately 5-10 minutes. No demographic data or

information linking the responses to the individual was collected. Participants were reassured

that they could discontinue the survey administrations at any time. Survey respondents were also

provided with contact information for the Principal Investigator and the Rutgers Office of

Research Subject Protection that was located on the consent form.

Questionnaire

Each questionnaire consisted of a brief vignette describing a man (John) who had been

suffering from several symptoms of a Major Depressive Episode (DSM-IV-TR). The vignette

described John as experiencing depression symptoms (anhedonia, difficulty sleeping and

thoughts of suicide). In the vignette, the man goes to a clinic and is diagnosed with depression.

The vignette contains information that there are many different treatments for depression but in

his case, the doctor recommends either a prescription medication or weekly psychotherapy to

treat his depression. This vignette is followed by 14 statements adapted from the Reason for

Depression (RFD) (Addis, 1995; Thwaites et al., 2004) designed to ascertain the subject's belief in the causes of the John's depression.

Following the 14 statements is a second vignette describing the mechanism of how either psychotherapy or medication works to improve depression. The description of the mechanism matches the condition of the initial vignette with participants in the psychotherapy condition getting a psychotherapy explanation of mechanisms and participants in the prescription medication getting a medication explanation of mechanisms of the treatment. The vignette goes on to state that John has decided to try the recommended treatment and 6 months later he is feeling better, with a remittance of the symptoms described in the first vignette. Both John and his doctor agree that he is no longer experiencing depression. John then decides he no longer needs treatment and stops the treatment.

This vignette is followed by six statements designed to ascertain the participant's belief in the likelihood of John experiencing future bouts of depression and five statements designed to measure social distance. Additionally, at the end of each questionnaire were 4 questions that provided the respondent with space to answer in an essay format.

Materials

Reason for Depression scale. Participants are asked to respond to 14 statements about the cause of the character's depression by indicating their level of agreement with each statement on a 6-point Likert-type scale ranging from 1 (*completely disagree*) to 6 (*completely agree*). These statements were adapted from Addis et al. (1995) Reason for Depression questionnaire and included Thwaites et al. (2004) biological subscale addition to this measure. The Reason for Depression (RFD) scale is a 48-item self-report measure developed to measure explanations for the causes of depression. Research with these measures has found excellent internal reliability

with the subscales ranging between .78-.86 using Cronbach's alpha. Thwaites et al (2004) also tested the biological subscale and found a reliability of .76 in a non-clinical sample from the United Kingdom.

The RFD contains eight subscales that have been derived via factor analysis (characterological, existential, interpersonal conflict, intimacy, achievement, relationship, physical, and childhood reasons). The characterological subscale reflects a stable sense of the person as a depressed individual (e.g. 'I am depressed because this is the way I've always been', 'That's just the type of person I am'), whereas the existential items reflect a stable disillusionment with life (e.g. 'I don't know who I am or what I stand for', 'I'm stuck where I am in life, nothing ever changes'). The achievement subscale includes items such as 'I can't accomplish what I want to' and 'I'm not living up to my personal standards'. The interpersonal conflict subscale relates to problems in interpersonal relationships (e.g. 'Other people criticize me', 'People don't give me the respect I deserve'), whereas the intimacy subscale emphasizes a lack of intimacy (e.g. 'I don't feel loved', 'There is no one to share my innermost thoughts and feelings with'). The relationship subscale concerns the specific relationship with spouse or partner (e.g. 'My spouse/partner treats me poorly', 'My spouse/partner doesn't understand me'). The childhood subscale concerns reasons given regarding childhood events (e.g. 'I haven't worked through things that happened to me as a child', 'My family treated me poorly as a child'). Finally, the physical subscale reflects physical (rather than biological) reasons for depression (e.g. 'I'm not active enough', 'I don't take care of myself physically'). Subsequent to the published studies involving the RFD, Addis added a further four biological items (e.g. 'I have a chemical imbalance', 'it's a biological illness', 'my nervous system is just wired this way, 'it's basically caused by genetics').

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The 14 items used to measure cause of depression were adapted from the RFD. Only 14 items were used in order to ease the burden on respondents. All 4 of the biological items were used as these items were predicted to be more strongly related to a medication explanation of depression.

The 10 remaining adapted items of the RFD were selected based on the several criteria. First, items were chosen from the 5 subscales of the RFD that were viewed by the researcher to most closely be related to psychotherapy. No items from the Physical or Achievement subscales were included as these items did not reasonably correspond to either a biological or psychosocial explanation of depression.   Additionally no items were selected from the Relationship subscale because, while these items loaded as part of a different factor for the RFD, they were viewed by the researcher as part of a similar construct of psychotherapy that was adequately captured by the Intimacy and Interpersonal conflict subscales.

The items were also selected in part based on the factor loading they had for each subscale based on prior research. From the Interpersonal conflict, Intimacy, Characterological, and Childhood subscales 2 items were included that had the highest factor loading for each subscale. The 2 items from the Existential subscale included the first and third items with the highest factor loading. In this case the item of "I can't decide what to do with my life" was chosen instead of "I don't know what I stand for" because these concerns were viewed to potentially be more related to what would be explored in psychotherapy. Two items were selected from each subscale.

Items in the RFD are written in the first person (e.g. I haven't worked through things that happened to me as a child'). These items were rewritten for respondents to express their

opinions about the cause of the man described in vignettes depression (e.g. The most likely cause of John depression is that he hasn't worked through things that happened to him as a child).

Description of how psychotherapy and antidepressant medication work. The description of how the medication and psychotherapy work to address depression are provided in the context of the man from the vignette wanting to know how his treatment works and reading the information in a brochure provided by the clinic where he has sought services. The descriptions of how medication is used to treat depression were adapted from the description on Web MD (2011a). The description of how psychotherapy is used to treat depression adapted from the description on Web MD (2011b). By providing the information through a clinic brochure it seems reasonable to assume that this can be viewed as an expert opinion. This gives the information a level of support through being received through the clinic. Furthermore in both cases the information comes from the same source and therefore it is unlikely there are differences in perceived validity of the information based on the source.

The prescription medication information specifically focuses on Selective Serotonin Reuptake Inhibitors. These are the most commonly prescribed medications in the treatment of depression and are the most common type of medication that would be prescribed by a psychiatrist for depression (National Institute of Mental Health, 2013; Kashihara & Carper, 2005). The description contains a strong biological explanation by containing information about how neurotransmitters are related to a person's mood. The description also contains information about how the medication changes levels of the neurochemical Serotonin in the brain. The description contains information related to how levels of serotonin are shown to be connected to mood and depression and that SSRI's help to modify these levels.

The psychotherapy description contains information about how therapy can help to treat depression. The psychotherapy description contains information about how psychotherapy addresses psychological phenomena such as managing stress, improving interpersonal relationships, and dealing with childhood, and changing thoughts and behaviors. This description is fairly broad in that it does not conform to a particular modality of psychotherapy such as dynamic, cognitive behavioral or interpersonal therapy but instead contains aspects of several approaches. The rationale for this is that the purpose of this study is not to compare belief in the efficacy of a particular modality of psychotherapy particularly, but psychotherapy as an approach to treatment. Participants may have preconceived notions of what therapy entails and the description is designed to give a broad description about how psychotherapy in general can be helpful for depression. Further, many therapists work in an integrative or eclectic approach, so focusing on one modality might be seen as less representative of psychotherapy.

Chance of recurrence of depression. Participants are asked to respond by indicating their level of agreement with each statement related to the likelihood of experiencing future bouts of depression on a 6-point Likert-type scale ranging from 1 (*completely disagree*) to 6 (*completely agree*). The items read:

John's treatment has helped to fix a deficit that John had so now he is unlikely to have any future depressive episodes.

John's treatment provided a temporary fix, but he will most likely need additional treatment in the future.

John's treatment helped change him in a way that will make future episodes of depression less likely.

John got better while getting treatment, but once he discontinues the treatment, his underlying

problems are likely to return and he will once again feel depressed

John is likely to have additional incidents of depression throughout his life.

John's treatment has provided benefits that will likely endure even after he stops the treatment.

These items were created for this study and therefore had not been previously measured for reliability. Cronbach's alpha for these items was found to be .782. It was found that removing one of the items resulted in a Cronbach's alpha to .800. This item was "John's treatment has helped to fix a deficit that John had so now he is unlikely to have any future depressive episodes". In the absence of prior validation studies, the scale is viewed as a face valid measure.

Social distance. Stigma was assessed through five social distance questions based on Bogardus (1925) original social distance scale. Bogardus' original scale asks participants how willing they would be to have the character in the vignette move next door; to make friends; spend an evening socializing; start working closely with them on a job; have a group home for people like [name] opened in their neighborhood; and marry into their family.

Participants indicate their willingness on a 6-point Likert-type scale ranging from 1 (*very unwilling*) to 6 (*very willing*). The items on the subscale were adapted to use the name of the character in the vignette (John). Phelan (2006) did reliability analyses on the social distance scale which revealed that Question 5 (i.e., the group-home item) lowered the alpha for the scale in her vignettes seeking to measure stigma towards schizophrenia, substance abuse, common stress, and major depression. Furthermore, the vignette in this study describes a man suffering from depression and subsequently recovering and the question about a group home was deemed inappropriate and potentially confusing for respondents. Therefore, the group home item was omitted. Phelan (2006) found Cronbach's alpha for the five-question scale was found to be .782.

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In the current study reliability analysis yielded a Cronbach's alpha of .898.

   Essay questions. The questionnaire has 4 essay questions at the end ask respondents to share their views about: Do you think John's depression will recur? Why or Why not?; Please describe your thoughts about John's treatment.; Has John's treatment corrected the causes of his depression and if so how?; Has John's treatment somehow covered his symptoms without fixing what is fundamentally causing his depression and if so how?   These questions were designed to capture qualitative information regarding opinions about depression treatment which may not be reflected in the scaled statements.

   Data were coded utilizing 2 independent raters. Commonly appearing words and phrases were identified by the investigator. Phrases and words that appeared in multiple responses were identified as possible themes. Some codes were identified as having specific word combinations. For example, the code "quick fix" was identified by noting this specific phrase was present among multiple respondents. Other codes were established based on thematic similarity. For example, "Should have other treatment instead or in addition to the one provided" code was identified for multiple responses which while phrased in different ways were deemed to express a similar theme by the writer. Once the themes were identified, the first coder went through the responses for each question by each respondent and identified any responses that were judged to reflect the theme of the various codes. This process was then repeated by the second coder.

   The first, third, and fourth questions asked the respondents to respond either "yes" or "no", and then provide a reason. Responses for the first and third question were coded into yes, no, or maybe categories. However, this was not done for question 4. This question asks "Has John's treatment somehow covered his symptoms without fixing what is fundamentally causing his depression and if so how"? Many people read the item and responded with "Yes" but

provided a response that indicated the treatment had fixed the fundamental cause of the depression.   A yes response should indicate that the treatment covered the symptoms without fixing the cause instead of fixed the cause without just covering his symptoms. For some of the responses that provided a rationale, it was possible to assess if the participant had misread the question from the context. However, many participants just responded yes or no and there was no way of knowing how they had interpreted the item. As such, the reasons for the Yes/No answers for this question were coded but the Yes/No responses were disregarded for separate coding.

In the responses, there was a great deal of overlap in how participants responded to the questions. Responses to each of question were often relevant to alternate questions and similar themes arose in response to different questions.   As such, a single set of codes was used for all the questions instead of a separate set of codes for all four open ended essay questions.

Chapter IV

Results

Subjects were compared by treatment condition on their beliefs about cause of depression, permanence of depression, and stigma. Participant's responses to the 4 open ended questions were also examined for themes. Additionally, two correlations were performed on respondent's scores independent of condition. The participants' scores were correlated between biological belief and liability of recurrence and correlated between liability of recurrence and desire for social distance.

As multiple ANOVA's were conducted on the data set it was necessary to correct for Familywise error. Therefore, a Bonferroni correction was conducted to calculate the appropriate level for alpha. In this study, seven ANOVA's were conducted on the Reason for Depression statements resulting in a Bonferroni correction of alpha of .007. Additionally, eight ANOVA's were conducted on the items designed to assess perceived recurrence liability of the depression resulting in a Bonferroni correction of alpha of .006. Finally, six ANOVA's were conducted on the Social Distance data resulting in a Bonferroni correction of alpha of .008. These can be considered a conservative correction strategy.

Subjects in the medication and psychotherapy conditions were compared by treatment condition using an independent *t* test on their belief in cause of depression on the Biological, Existential, Interpersonal conflict, Intimacy, Characterological, and Childhood subscale. The biological subscale contained 4 items which were averaged to create a composite score. The Existential, Interpersonal conflict, Intimacy, Characterological, and Childhood subscales each contained 2 items and in each of these 2 items were averaged to create a subscale score for each

subscale. The responses all of the Existential, Interpersonal conflict, Intimacy,

Characterological, and Childhood items were also averaged to create one psychosocial subscore.

Changes in the number of items can influence the reliability of scales. In this study only

a subset of items from the Reason for Depression scale were used, so reliability was assessed for

this sample. The results can be viewed in Table 1.

Table 1. Internal consistency coefficients for RFD subscales utilize in current study

	No. of items	Reliability Cronbach's alpha
Characterological	2	.562
Interpersonal conflict	2	.550
Intimacy	2	.596
Existential	2	.703
Childhood	2	.898
Biological	4	.814
Psychosocial	10	.670

Endorsing a biological cause of depression was no more likely among participants in the

medication condition ($M = 2.89$, $SD = 1.07$) than the psychotherapy condition ($M = 2.65$, $SD =$

1.04), $t (154) = -1.42$, $p =.157$. In addition, no significant difference in the psychosocial subscale

score was found between participants in the medication condition ($M = 2.95$, SD = .593)

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compared to the participants in the psychotherapy condition ($M = 3.00$, $SD = .589$), t (154) =

.514, $p = .608$.

Table 2. Attribution of Cause of Depression by Treatment Recommendation

	Psychotherapy		Medication		df	t	p
	Mean	SD	Mean	SD			
Existential	3.93	1.07	3.79	1.16	(1,155)	-.77	=.144
Interpersonal conflict	2.39	.93	2.16	.87	(1,155)	-1.52	=.116
Intimacy	4.17	1.03	3.89	1.03	(1,155)	-1.69	=.093
Characterological	2.25	.94	2.47	.97	(1,155)	1.32	=.189
Childhood	2.26	.98	2.47	1.03	(1,155)	1.25	=.213
Biological	2.65	.1.04	2.89	1.07	(1,155)	1.42	=.157
[a] Psychosocial	3.00	.59	2.95	.59	(1,155)	-.514	=.608.

[a] Psychosocial variable is average of subject's Existential, Interpersonal conflict, Intimacy,

Characterological, and Childhood items.

Subjects in the medication and psychotherapy conditions were also compared by

treatment condition using an independent t test on the perceived liability of recurrence of

depression. Three of the six items were reverse coded and these scores were transformed to

make them consistent with the other items where higher scores were indicative of increased

belief in liability of recurrence of depression. The items were compared individually between

conditions and were also averaged to create a recurrence liability subscore. Additionally a

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perceived recurrence liability subscore which excluded the item that decreased reliability was

assessed.

Participants in the psychotherapy condition ($M = 2.97$, $SD = .55$) had lower scores on the

liability of recurrence subscore than participants in the medication condition. ($M = 3.91$, $SD =$

$.72$), $t (154) = 9.05$, $p < .001$. This outcome was unaffected by removal of an item to increase

scale alpha (psychotherapy condition ($M = 2.79$, $SD = .57$) vs. medication condition. ($M = 3.8$,

$SD = .80$), $t (154) = 9.04$, $p < .001$. To further explore this finding, an analysis was conducted on

the individual items on the perceived recurrence liability scale. It was found that participants in

the medication condition had significantly higher perceived recurrence liability scores on all six

items. These results are displayed in table 3.

Table 3. Perceived Liability of Recurrence of Depression by Treatment Recommendation

Higher scores reflect greater perceived recurrence liability

	Psychotherapy Mean SD		Medication Mean SD		df	*t*	*p*
[a] Fixed a deficit	3.89	1.21	4.44	.94	(154)	3.13	=.002*
Temporary fix	3.05	.93	3.96	1.05	(154)	5.7	<.001*
[a] Changed him	2.48	.89	3.75	1.15	(154)	2.89	<.001*
Once discontinue Problems reemerge	2.57	.83	3.64	1.19	(154)	6.42	<.001*
Additional incidents Throughout life	3.45	1.03	4.06	1.16	(154)	3.44	<.001*

Table 3 Continued

	Psychotherapy Mean SD		Medication Mean SD		df		*t*	*p*
[a] Benefits will endure	2.37	.73	3.39	1.21	(154)		7.51	<.001*
Recurrence liability	2.97	.55	3.91	.72	(154)		9.05	<.001*
Recurrence liability Without Fixed a deficit item	2.79	.57	3.80	.80	(154)		9.04	<.001*

[a] Items are reverse coded and scores in Table 6 reflect the reverse coded score.
*Significant result at the .006 level.

Responses to each of the questions were examined for specific themes by the researcher. The responses were each assigned a code and each response was coded for the various themes. Within individuals, often an identical theme would be stated in responses to more than one question. In this case the theme was only coded as once for each individual responding even if it showed up more than once. All responses to the essay question were coded separately by two individuals and compared. Inter rater reliability for the themes was obtained by calculating Cohen's Kappa for the yes, no, maybe responses to questions the "Do you think John's depression will recur" and "Has John's treatment corrected the causes of his depression and if so how" as well as to the each theme that appeared in participant's 4 responses. The themes identified in the essay responses as well as Cohen's Kappa are displayed in table 4.

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Table 4. Themes for Essay Responses' Cohen's Kappas and significance levels

Theme	Kappa	*p*
Do you think John's depression will recur?	.867	<.001
Has John's treatment corrected the causes of his depression?	.658	<.001
Depressed once will become so again	.695	<.001
Depression was a one-time event.	.477	<.001
Treatment cured John	.383	<.001
Recurrence depends on future external events.	.696	<.001
Recurrence depends on how John acts	.674	<.001
Came away with tools to deal with future episodes.	.722	<.001
Thought a good/effective treatment	.749	<.001
Treatment was a quick fix	.645	<.001
Should have other treatment instead or in addition to the one provided.	.724	<.001
Fix was temporary.	.782	<.001
Treatment should not have been stopped.	.639	<.001
Mention side effects or addiction	1.0	<.001
Treatment was consistent with cause	.589	<.001
Treatment was inconsistent with cause.	.694	<.001
Helped through a tough time, palliative	.639	<.001
Treatment helped John gain insight	.521	<.001
Corrected causes of depression because the treatment was successful	.677	<.001

The significance levels of all the themes was <.001 indicating that the agreement between raters was significantly greater than is likely to occur by chance. However, in the case of inter rater reliability is helpful to know how strong the agreement is between raters. Landis and Koch (1977) characterized Kappa values of 0 as indicating no agreement and 0–0.20 as slight, 0.21– 0.40 as fair, 0.41–0.60 as moderate, 0.61–0.80 as substantial, and 0.81–1 as almost perfect agreement. However, Fleiss (1981) characterized kappas below 0.40 as poor, 0.40 to 0.75 as fair to good, and over 0.75 as excellent. Regardless of which set of criteria are used, these Kappa values should be kept in mind when interpreting the results of the essay responses.

Next, to investigate how (if at all) qualitative, descriptive responses resembled the qualitative data reported above, an analysis was conducted on the open ended responses by analyzing the themes found there. With the exception of two themes (Treatment cured John, Depression was a one-time event) the items all had Cohen's kappas greater than .5. Given the high level of concordance for the two raters, the results of the coding from the first rater are displayed in Table 5 and referred to in the remainder of the document.

Not all participants responded to these essay questions, with a total of 88 participants responding to at least one essay question. Of the 88 responding participants, 42 were from the psychotherapy condition and 46 were from the medication condition.

The essay questions asked respondents about their beliefs about the treatment the character had received in the vignette. As such responses to the medication vignettes are indicative of respondent's attitudes towards antidepressant medications and responses to the psychotherapy vignettes are indicative of respondent's attitudes towards psychotherapy. However, the first question asks participants about their belief in recurrence and some responses

may be indicative of beliefs about liability of recurrence of depression independent of treatment type. The data are arranged by frequency of response and also displayed by frequency with the medication and psychotherapy conditions.

Future recurrence: Respondents provided an answer to whether they thought depression would recur that was coded yes, no, or maybe. Three of the themes that arose were often utilized by respondents in making a determination about belief in recurrence. Of those who responded to the essay questions, 22 of 88 indicated that recurrence depended at least in part on future events which might occur in the character's life. These responses indicated that the chance of recurrence was either fully or in part dependent on external event or difficulties the character might face. Of those who responded to the essay questions, 8 of 88 indicated that recurrence was dependent on how the character behaved or dealt with future events. Of those who responded to the essay questions, 10 of 88 respondents indicated that their belief in recurrence was based on the fact that the character had been depressed before so was likely to become depressed again in the future.

Thoughts about treatment: When asked to provide their thoughts about the character's treatment, 47 of 88 indicated they believed that the treatment was either a good or effective choice. In examining this theme by condition, 33 of 42 in the psychotherapy condition believed that the treatment was good or effective, while only 14 of 46 thought medication was a good or effective treatment. Another theme that arose for many respondents in response to this question was a belief that the character should have received a different type of treatment for his depression. Of those who responded to the essay questions, 22 of 46 respondents in the medication condition believed that the character should have received a different or additional treatment to that which was provided. By contrast, only 4 of 42 respondents believed that the

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character should have received a different or additional treatment to psychotherapy. A total of 32 of the entire 88 participants who responded believed that the treatment helped the character through the depressive episode and helped him to feel better (19 in the medication condition, 13 in the psychotherapy condition).

Long term benefits of treatment: Another theme that arose in the open ended responses was that of the long term benefits of treatment. Of those who responded to the essay questions, 20 of 46 respondents in the medication condition indicated a belief that the treatment was a temporary fix to the character's depression. Only 1 respondent in the medication condition endorsed the treatment providing tools to help deal with future episodes. By contrast, in the psychotherapy condition, only 3 of 42 respondents felt the fix was a temporary, and 18 of 42 respondents endorsed a belief that the treatment would provide tools to deal with future episodes of depression.

Table 5. Themes of Open Ended Responses about Psychotherapy and Medication Treatments for Depression

Themes present across all open ended questions	Psychotherapy n=42	Medication n=46	Difference	Sum
Thought a good/effective treatment	34	14	20	48
Helped through a tough time, palliative.	13	13	0	26
Should have other treatment instead or in addition to the one provided.	5	22	17	27

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Table 5 Continued

Themes present across all open ended questions	Psychotherapy n=42	Medication n=46	Difference	Sum
Recurrence depends on future external events.	8	15	7	23
Fix was temporary.	3	20	17	23
Came away with tools to deal with future episodes.	19	1	18	20
Treatment was consistent with cause.	8	7	1	15
Corrected causes of depression because the treatment was successful.	10	6	4	16
Depressed once will become so again.	8	2	6	10
Treatment was inconsistent with cause.	4	8	4	12
Recurrence depends on how John acts.	4	4	0	8
Treatment should not have been stopped.	2	3	1	5
Depression was a one-time event.	2	1	1	3
Treatment was a quick fix.	0	4	4	4
Treatment cured John.	2	0	2	2
Mention side effects or addiction.	0	2	2	2
Treatment helped John gain insight.	1	2	1	3

Table 5 Continued

Themes present across all open ended questions	Psychotherapy n=42	Medication n=46	Difference	Sum
Depression will recur:				
Yes	18	25	7	43
No	4	3	1	7
Maybe	17	16	1	33
Corrected the causes of depression:				
Yes	10	6	4	16
No	18	22	4	40
Maybe	8	9	1	17

Given the participants who responded to open ended questions (labeled "responders" hereafter) constitute only a subset of all study subject, exploratory comparisons were made between responders to analyze for consistency with the quantitative data.   Those in the responder subset were examined to investigate whether that the pattern of quantitative findings differed between responders and non-responders to the open ended questions.

No significant difference was found between Responders ($M = 3.48$, $SD = .80$) and Non-responders on the quantitative liability of recurrence measure ($M = 3.42$, $SD = .79$), $F (1,155) = .229$, $p =.633$. Additionally, a two way ANOVA was conducted using treatment condition and whether the person responded to the essay questions as independent variables and the liability of

recurrence score as the dependent variable. There also was no significant interaction of response to open ended question by treatment condition $F(1,155) = .072$, $p = .788$. This result supports the interpretation that those who responded to the open ended questions did not have more or less extreme opinions than those who did not.

As a check to determine whether the coded responses to the open ended questions followed a logical pattern consistent with the quantitative permanence score, some comparisons were made between groups. It was expected that amongst those responding to the "will depression recur" essay question the liability of recurrence score of would be highest for those who answered Yes, followed by those answering Maybe, followed by those who answered No (the group with the lowest score). There was a significant different in liability of recurrence score among those who answered the "will depression recur" essay question, with *Yes* respondents ($M = 3.87$, SD = .768) having the highest liability of recurrence subscore, *Maybe* ($M = 3.23$, SD = .630) respondents having the second highest liability of recurrence subscore, and *No* respondents having the lowest liability of recurrence subscore ($M = 2.64$, $SD = .456$), $F(2,154) = 8.50$, $p < .000$. A significant difference in liability of recurrence score was also found on the "should have received a different treatment" theme with Responders reporting the theme ($M = 4.00$, $SD = .758$) having the highest liability of recurrence subscore, Non-responders ($M = 3.42$, $SD = .792$) having the second highest liability of recurrence subscore, and Responders not reporting the theme having the lowest liability of recurrence subscore ($M = 3.25$, $SD = .707$), $F(2,154) = 9.41$, $p < .000$. In addition, a significant difference in liability of recurrence score was also found on the "treatment provided a temporary fix" theme with Responders reporting the theme ($M = 4.12$, $SD = .637$) having the highest liability of recurrence subscore, Non-responders ($M = 3.41$, $SD = .794$) having the second highest liability of recurrence subscore, and Responders

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not reporting the theme having the lowest liability of recurrence subscore ($M = 3.28$, $SD = .732$),

$F(2,154) = 10.69$, $p < .000$. These results support the interpretation that participants that

responded to the open ended questions in a manner that was consistent with how they responded

to the quantitative measures of liability of recurrence. These results can be seen in Table 6.

Table 6. Open Ended Questions Means and Significance by Liability of Recurrence Subscore

	Will depression recur?				
	Mean	SD	df	F	*p*
Yes	3.87	.768	3, 151	8.50	<.000.
No	2.64	.456			
Maybe	3.23	.630			
Non-Responders	3.39	.793			

Should have received a different treatment theme

	Mean	SD	df	F	*p*
Responders theme present	4.00	.758	2, 152	9.41	<.000.
Non-Responders	3.42	.792			
Responders theme not present	3.25	.707			

	Temporary fix theme				
	Mean	SD	df	F	*p*
Responders theme present	4.12	.637	2, 152	10.69	<.000

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Table 6 Continued

	Mean	SD
Non-Responders	3.41	.794
Responders theme	3.28	.732
not present		

Subjects in the medication and psychotherapy conditions were also compared by treatment condition using an independent t test on each of the items designed to measure the desire for social distance from the depressed character. No significant difference was found between participants in the medication condition and participants in the psychotherapy on any of the individual social distance questions. In addition, an overall measure of desire for social distance was calculated for each respondent by averaging their scores on the 5 items. No significant difference was found between participants in the psychotherapy condition ($M = 4.54$, $SD = .91$) on desire for social distance than participants in the medication condition ($M = 4.41$, $SD = 1.06$), $t(154) = -.764$, $p = .446$. These results can be seen in Table 7.

Table 7. Social Distance by Treatment for Depression

	Psychotherapy		Medication		df	t	p
	Mean	SD	Mean	SD			
Move in next door	4.85	.98	4.71	1.15	(154)	-.817	.415
Make friends	4.87	.98	4.8	1.16	(154)	-.386	.701
Spend an evening	4.87	1.04	4.84	1.08	(154)	-.170	.865

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Table 7 Continued

	Psychotherapy		Medication		df	t	p
	Mean	SD	Mean	SD			
Work with on job	4.34	1.16	4.18	1.14	(154)	-.862	.390
Marry into Family	3.72	1.34	3.53	1.58	(154)	-.808	.420
Social Distance	4.54	.91	4.41	1.06	(154)	-.764	.446

Note: Lower scores indicate desire for increased social distance.

As a post hoc analysis, correlations were examined independent of condition between participants' belief in a biological cause and belief in liability of recurrence subscale scores and between participant's liability of recurrence scores were and desire for social distance. Participant's belief in a biological cause was found to be positively correlated with perceived liability of recurrence (r=.230, p=.004). However, liability of recurrence subscore was not correlated with desire for social distance (r= -.077, p=.343). Additionally, none of the causal subscores were significantly correlated with desire for social distance.

Chapter V

Discussion, conclusions, and limitations

This study has sought to illuminate different perceptions of the lay public regarding antidepressant medication and psychotherapy treatments for depressions. The difference in the perceived liability recurrence between the psychotherapy and medication conditions was the most significant finding. The evidence appears to support an interpretation that the difference is most attributable to a perception of the respective long term benefits of each treatment instead of a shift in the perceived cause of the depression. Additionally, there was no evidence that type of treatment received affected desire for social distance or the perceived cause of the depression.

Perceived Liability to Recurrence

The results of this study are important to consider as they relate to the perception that a person has a lasting liability to depression, as measured through their belief in recurrence and need for future treatment. The results indicate that respondents who learned a character was treated with medication were more likely that those who learned an equivalent character was treated with psychotherapy to conclude the character was likely to experience future episodes of depression and need future treatment.

To explore what might be influencing the difference in perceived lasting liability to relapse, a post hoc correlation was conducted between biological belief and permanence. Across conditions, attributing depression to a biological cause correlated with its perceived permanence ($r=.230$, $p=.004$). This finding is in the spirit of, and consistent with, Phelan's (2006) finding that an attributing depression to genetic cause correlated with greater perceived permanence.

A closer look at the biological construct in the Reason for Depression scale may provide information on how the current findings may tap a more general factor than was found in

Phelan's study. The biological subscale has 4 items, one of which is a genetic item "John is depressed because of his genetics". Even when the item specifically mentioning genetics is removed, the correlation with permanence is still significant, even though none of the other 3 items mentions genetics.

The correlation between biological attribution of depression and perceived liability to recurrence alone is not sufficient to account for the difference in perceived liability to recurrence of depression in the psychotherapy and medication conditions. There was no significant difference in biological attribution between the psychotherapy and antidepressant medication conditions, but there was a significant difference between the two conditions on liability to recurrence. This finding supports the interpretation that subjects' responses on the recurrence scale were not influenced solely by a biological attribution of the cause of depression.

It is also possible that different treatment recommendations may be seen to imply something about seriousness of the illness, which might then influence perceived potential for recurrence. This study did not measure severity perceptions directly. One could reason indirectly that a difference in perceived severity of the illness should have produced a difference in stigma (Gaebel, Zaske, & Baumann, 2006; Pyne et al. 2004), and none was found. Further research is needed to examine this question.

Recurrence scale items. It may be helpful to examine the content of the items in the recurrence scale. All items were significant individually and had a Cronbach's alpha of 0.8 indicating support that they measured a similar construct of the perceived liability of recurrence of depression. The item which read "John's treatment has helped to fix a deficit that John had so now he is unlikely to have any future depressive episodes" was the only one which lowered the Cronbach's alpha of the whole scale. In reviewing the other items, each assesses the long term

impact of the treatment. However, this item particularly states the treatment "fixed a deficit". It may be that treatments are seen to provide a lasting benefit without directly addressing a deficit and this aspect of the item resulted in lowered reliability of the scale.

Essay question responses. To explore further the participants' thinking, it is helpful to consider the data from the essay response questions. Of respondents who answered the essay questions across conditions, the majority (76 of 88, 86%) indicated that they believed depression either was likely to recur (43 of 88, 49%) or might recur (33 of 88, 38%). This finding is consistent with the scores on the item that assesses only belief in additional episodes of depression *i.e.* "John is likely to have additional incidents of depression throughout his life". The "additional incidents" item has mean scores in both conditions that favor recurrence 3.45 in the psychotherapy condition and 4.06 in the medication condition. The most common reason that respondents provided was, that future stressors could induce a depressive episode (23 of 88, 26%).

When asked to provide their thoughts about "John's" treatment, 48 of 88 (55%) indicated they believed that the treatment was either a good or effective choice. This is not surprising as the vignette depicts a successful treatment with symptom relief which should reinforce beliefs in the efficacy of that particular treatment. In examining this theme by condition, 34 of 42 in the psychotherapy condition (81%) believed that the treatment was good or effective, while only 14 of 46 thought medication (30%) was a good or effective treatment. Furthermore, the theme that "John" should have received a different or additional treatment was much more common in the medication condition (22 of 46, 48%) compared to the psychotherapy condition (5 of 42, 12%). These differences between conditions are most likely driven by respondents' prior opinions or beliefs about the treatments because in both conditions the

character is described to have had an identical remittance of his symptoms as well as optimism about the future.

The data from the essay responses indicate some differences between the psychotherapy condition and medication condition on the theme of the character receiving the treatment coming away with coping skills. Nineteen of 42 respondents (45%) from the psychotherapy condition reported this theme whereas only 1 of 46 respondents (2%) in the medication condition reported this theme. However these results are not surprising given that the psychotherapy condition includes a description of how psychotherapy works that states "*Your therapist can also help you develop good coping strategies for dealing with everyday stressors*". The medication description does not make any reference to coping skills and these differences may be a specific response to the content of the vignettes.

Another theme that arose in the essay responses was that of the treatment being a temporary fix with 3 of 42 (7%) respondents in the psychotherapy condition and 20 of 46 (43%) respondents in the medication condition reporting this theme. This difference between conditions is most likely driven by respondents' opinions or beliefs about the treatments because in both conditions the character is identically described as having had a remittance and no mention is made of future stressors or possible precipitant of a depressive episode.

These results seem to suggest that both treatments are seen as effective at providing short term relief. This result is consistent with the finding by Vincent & Lionberg (2001) that both psychotherapy and medication treatments provide short term relief for insomnia. This could simply be a response to the information presented, because the vignette describes symptom remittance at the end of treatment. However, the expressed desire for more respondents in the medication condition to endorse a desire for alternative or additional treatment is consistent with

the interpretation that this treatment is not perceived to have the preventative qualities of

psychotherapy.

The results imply that respondents viewed the psychotherapy as providing a benefit that

endured past the termination of treatment, while medication only provides a benefit while being

taken. To interpret this finding, it is worth considering that the vignettes describe "John"

receiving treatment, having symptom remission, and then discontinuing treatment.   Thus, a

different outcome might have occurred had the person in the vignette not been reported to have

stopped the treatment. In that case, both treatments might have been viewed to prevent future

episodes so long as treatment was maintained.

Regardless of how long the remittance of symptoms lasts, patients who are treated

successfully on the first occasion are likely to be optimistic about future treatment and seek

treatment if their symptoms recur. For the person with depression, receiving symptom relief

would be the obvious benchmark for effective treatment. If the treatment will not help the

patient to feel better, it is unlikely to be considered as effective. However, there are other

components to treatment of an illness.

In the case of an illness, the question of whether a treatment "fixed" the problem is

important as well. A medication treatment treats the biological cause of depression by regulating

certain neurochemical imbalances in the brain. However, this treatment does not claim to

address what lead to the dysregulation of the neurochemical in the first place. No antidepressant

medication is marketed or suggested to address either a genetic or environmental stressor cause

of future episodes of depression. So too with psychotherapy, the counseling would certainly not

be viewed to fix a biological or genetic component nor to eliminate future external stressors

through counseling. Counseling may be seen to help the person through a difficult period, much

as medication might, and/or be seen to help the person gain skills to deal with stressors. However, attainment of these skills does not "fix" the problem of encountering environmental stressors.

In some cases either medication or psychotherapy may be seen to address the underlying cause of depression, and yet still may be seen to not offer a permanent solution. While some lay persons may have a model of the etiology that holds one reason as the sole cause, many persons have multifaceted explanation of depression and often neither medication nor psychotherapy may be seen to fully address cause. For many the theme of environmental stressors or existential questions of purpose in life arose as being considered to be primary cause and neither treatment may be seen to fully address these issues.

Another important component to the effectiveness of treatment is how long the "cure" lasts. While some patients experience only one major depressive episode, many patients experience several throughout their lifetime. If a treatment is seen to make one feel better but is only effective while treatment is continued, this is less preferable to a treatment that can permanently alleviate the illness. For many respondents, it appears that antidepressants are viewed in much the same way as taking Tylenol for a long lasting physical pain. The pill masks the emotional pain, but once it is discontinued, the pain is expected to return. However, just as physical pain does not last forever, so too may sadness run its course. In contrast to ordinary sadness, depression appears to be seen as a likely recurring condition. As such, antidepressant medication might be expected to be needed continuously without expectation of some end date. In " Is It Me or My Meds" by David Karp (2006), the author interviews people who take medications for psychiatric conditions, depression among them. In this book, Karp picks out the

theme of taking medication as being akin to a marriage. It is seen by many as a lifelong commitment to taking pills in order to be free of their symptoms.

However, numerous studies have found a preference by the lay public for psychotherapy over psychopharmacology (Banken & Wilson, 1992; Dwight-Johnson, Sherbourne, Liao, & Wells, 2000; Jorm et al, 1997; McKeen & Corrick, 1991; Priest et al., 1996). While treatments that are congruent with perceived cause may be seen as preferable (Addis & Carpenter, 1999; Addis & Jacobson, 1996; Atkinson, Worthington, Dana, & Good, 1991) the perceived long term benefits of treatment may also account for part of the preference for psychotherapy over antidepressant medication. This study indicates that psychotherapy is viewed as having a more long lasting benefit than antidepressant medication. The difference in perceived liability of recurrence of depression by treatment appears to be based on the manner in which antidepressant medication and psychotherapy are seen to work to relieve depression independent of their perceived efficacy to provide symptom relief. This difference in mechanism of action and the perceived long term benefits may account in part for the public's preference for psychotherapy over medication.

Stigma

In this study, no evidence was found to support a link between the type of treatment used to treat an individual's depression and stigma as measure by desire for social distance. There were several possible factors that might have been expected to influence the desire for social distance. One possibility that was considered was that different causal attributions might be correlated with the desire for social distance from the depressed individual in the vignette. In this study, the perceived cause of depression was measured after the respondents read about the treatment recommendation but prior to learning the treatment had been effective. However,

there was no evidence that the recommendation influenced belief in cause of depression. Even if attribution of the cause of depression does not change significantly based on treatment type, the perceptions of the liability of recurrence of the depression might be expected to influence the stigma directed towards that person. Yet it was found that there was no significant correlation between liability of recurrence and desire for social distance for "John".

In this study, stigma was measured after respondents read that the treatment was effective in relieving symptoms. It may be that the perception of effective treatment and symptom relief reduces stigma. There was no significant difference between the two conditions in the desire for social distance and in both the conditions the overall the means of 4.54 for psychotherapy and 4.41 for medication indicated low levels of desire for social distance. Another possible interpretation of the lack of difference in stigma by treatment condition may be associated with low levels of stigma directed towards the character with depression. Depression perceived to be in remission may have such low levels of stigma associated with the diagnosis that differences are hard to detect.

A reason for the lack of difference in stigma associated with different treatments may be related to the measurement of stigma in this study. Past research (Link & Cullen, 1983) found that measures of attitudes toward mental illness were prone to socially desirable responding. However, in this study the questionnaires were anonymous and while it is possible social desirability led to underreporting of desire for social distance, the anonymity could be expected to reduce this effect.

Causal Attribution of Depression

The results of this study found no support for the hypothesis that a treatment recommendation influences beliefs about the cause of depression. Neither the biological

subscale nor the psychosocial subscale yielded a significant difference between participants in

the medications and psychotherapy conditions. It is worth noting that the means of the two

conditions were in the predicted directions; however, it cannot be concluded that a treatment

recommendation can influence the perceived cause of depression as it relates to biological or

psychosocial reasons. Additionally, none of the individual subscales was significantly different

by condition.

In order for a treatment recommendation to influence the perceived cause of depression

two conditions must be met. The treatment recommendation must both be utilized in assessing

cause and be seen to match up with a certain cause or causes. It could be that a treatment

recommendation does map onto a certain cause, but the recommendation information is

disregarded. This seems to be the most likely explanation of what occurred in this study. The

alternative is that a recommendation carries weight, but that does not map onto a particular

cause. However, Leykin et al (2007) demonstrated that effective treatment influence belief in

cause of depression indicating that different treatments correspond to different causes of

depression.

A reason for the limited influence of treatment recommendation on perceived cause of

depression may be the perceived status or legitimacy of the recommender, in this case a doctor at

a local clinic.   We can speculate that if the doctor in this study were described as a "world

renowned" expert on depression and treatment, their opinion might exert more influence, as

might that of a family physician with a preexisting relationship with a patient. However most

patients are not seen by world experts, and many are seen by doctors they do not know well –

both facts that suggest the vignette may capture many medical encounters.

It is worth noting that there were some differences between this study and that conducted by Leykin et al (2007). Leykin et al. (2007) found the effect in patients who had undergone a successful treatment for depression. It seems reasonable to assume that a process involving many months of treatment when someone has the personal experience of having their depression lifted would be more influential than reading about another person's vicarious experience in a fictional vignette.

The essay question of "Has John's treatment corrected the cause of his depression and if so how" may provide some insight into what factors were driving respondents beliefs about treatment and cause of depression. Of respondents in the medication condition 21 gave responses coded as no, 7 yes, and 9 as maybe to the question of did the treatment address the cause of the character's depression. Of respondents in the psychotherapy condition 17 responded no, 10 yes, and 8 as maybe to the question of did the treatment address the cause of the character's depression. These results indicate that most of the respondents answering this question did not believe the treatment directly addressed the cause of the character's depression.

These results are consistent with the quantitative measure that asked respondents to indicate their agreement with the statement "John's treatment has helped to fix a deficit that John had so now he is unlikely to have any future depressive episodes." The reverse coded means of this statement were 3.89 for the psychotherapy condition and 4.44 for the medication condition indicating that in both conditions respondents were more likely to think the treatment had not "fixed a deficit". Additionally in a review of the essay responses only 15 of 88 (17%) (8 psychotherapy and 7 medication) respondents stated the treatment was consistent with the cause of his depression. Additionally, 12 of the 88 (14%) raised the theme that the treatment was inconsistent with the cause of the depression.

It may be that some people hold a view of depression that the person has a biological dysfunction and for these persons medication seems a very apt treatment. However, a large number of respondents believed future depressive episodes would be a result of difficult events or occurrences. For most people adverse events in life do not map onto a medication treatment. However, adverse events also do not appear to map that strongly onto a psychotherapy treatment. Psychotherapy is seen to give tools to deal with future occurrences (19 of 42 (45%) in psychotherapy condition). However, the perceived cause is the adverse event not a perceived lack of coping skills or deficit in dealing with troubling situations.

Interestingly, while the most common reason for future recurrence given in the essay responses was environmental stressors, the Existential and Intimacy reasons were the most strongly endorsed reason for depression in both conditions. The Existential and Intimacy reasons for depression having such high endorsement in this study may reflect the population sampled. The participants in this study were comprised primarily of college students. This may be a time in life where issues of intimacy and existential nature have a high valence in many respondents' lives or be perceived to be the type of environmental stressors that could lead to a depressive episode.

Limitations of Study and Areas of Future Inquiry

This study followed the common practice of utilizing undergraduate students which may have implication for the external validity of the results. Being a student at Rutgers University was not a requirement for participation, however, it is reasonable to assume that the campus-based data collection produced a sample mainly composed of students. While Gordon, Slade, & Schmidt (1986) note that in many studies undergraduate samples differ significantly from a non-student sample, recent, more well designed comparisons have indicated this problem may be

overstated (Leeper & Mullinix, 2013).

Additionally, a large number of study participants came from a class taking an introduction to counseling, which likely selected for those more interested than others in psychotherapy. Nevertheless, no significant differences were found between participants from the class and other participants in their quantitative responses on causal attribution of depression, stigma, or permanence scores.

Another limitation to this study involves the methodology for randomization of participant's conditions. The two different forms of the vignette were mixed together and stacked by the experimenter and then given out to participants as they agreed to participate. While the experimenter did this mixing prior to the dispersal of the questionnaire and was blind as to which version a respondent had received, this mixing does not constitute true randomization. A better method would have been to disperse the vignettes in order after mixing them by condition using a random number generator. As such the results of this study must be interpreted cautiously.

Another limitation of this study is that the use of a measure created for recurrence liability. This measure has not been tested for construct validity though and relies on face validity to measure the liability recurrence.

This study did not collect demographic data and there is no way to know if the participants are a representative sample. Additionally, different racial and ethnic groups have been shown to display differing attitudes towards mental illness and treatment with Hispanic and African-American patients finding counseling more acceptable and antidepressants less acceptable compared to Whites (Cooper-Patrick, Gonzales, Gallo, Rost, Meredith, Rubenstein, Wang, & Ford, (2002); Givens, Houston, Van Voorhees, Ford, & Cooper, 2007; Khalsa 2011;).

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Additional research would have to be conducted to find if the results found in this study are applicable to different ethnic/racial groups. Additionally, there may be differences in gender on issue of treatment (women more favor counseling) (Churchill, Khaira , Gretton Chilver, Dewey, Duggan, & Lee, 2000; Dwight-Johnson et al. 2000).

At the start of this dissertation, the reader was asked to imagine a person that suffers from symptoms of and receives a diagnosis of depression.   The question was asked of whether the type of treatment he receives influences ones belief about why he is depressed, whether his depression is a singular occurrence or a first episode with others to follow, and if his treatment provides a long term solution or just a temporary fix? While this dissertation cannot fully answer how different treatments for depression are seen and more work remains to be done, some trends have come to light. The type of treatment that is recommended may not influence the perceived cause of his depressive episode nor the stigma that he faces. However, if he receives psychotherapy he might be seen as receiving more long term benefits and as less likely to have future bouts of depression than if he is treated with antidepressant medication.

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EXPECTATIONS AND BELIEFS, TREATMENT, DEPRESSION

Appendix A
ASSENT

You are invited to participate in a research study that is being conducted by Matthew Dickson, who is a student in the Psychology Department at Rutgers University. The purpose of this study is to understand people's perceptions and thoughts about depression treatment. Approximately 100 subjects between the ages of 18 and 65 years old will participate in the study, and each individual's participation will last approximately 10 minutes. You will be asked to read a brief vignette and answer some questions about your views on the situation described in the vignette, and attitudes toward some mental health treatments.

This research is anonymous. Anonymous means that I will record no information about you that could identify you. This means that I will not record your name, address, phone number, date of birth, etc. If you agree to take part in the study, you will be assigned a random code number that will be used on each test and the questionnaire. There will be no way to link your responses back to you. Therefore, data collection is anonymous.

The research team and the Institutional Review Board at Rutgers University are the only parties that will be allowed to see the data, except as may be required by law. If a report of this study is published, or the results are presented at a professional conference, only group results will be stated. All study data will be kept for five years.

There are no foreseeable risks to participate in this study. The study may produce valuable information about people's perception of mental health treatment. However, you may receive no direct benefit from taking part in this study.

Participation in this study is voluntary. You may choose not to participate, and you may withdraw at any time during the study procedures without any penalty to you. In addition, you may choose not to answer any questions with which you are not comfortable.

If you have any questions about the study or study procedures, you may contact me at:
Matthew Dickson, MA
15 Carpenter Pl
Metuchen NJ 08840
Email: mattdick@rci.rutgers.edu
Tel: 301-257-2429

or you can contact my faculty advisor
James Walkup, Ph. D
152 Frelinghuysen Rd A359
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E-mail: walkup@rci.rutgers.edu.
Tel: 212-724-8362 (848) 518 3091

If you have any questions about your rights as a research subject, you may contact the IRB Administrator at Rutgers University at:
Rutgers University, the State University of New Jersey

EXPECTATIONS AND BELIEFS, TREATMENT, DEPRESSION

Institutional Review Board for the Protection of Human Subjects
Office of Research and Sponsored Programs
3 Rutgers Plaza
New Brunswick, NJ 08901-8559
Tel: 848-932-0150
Email: humansubjects@orsp.rutgers.edu

You will be given a copy of this consent form for your records.
By participating in this study/these procedures, you agree to be a study subject.

EXPECTATIONS AND BELIEFS, TREATMENT, DEPRESSION

Appendix B

John is a 21 year man who has begun to experience some difficulties beginning 1 month ago. John and his girlfriend broke up and John has been worried about what he will do when he graduates from college. John has been unable to sleep at night. He stays awake thinking about what is wrong with his life and different decisions he should have made. John was once an enthusiastic volley ball player, but has recently lost interest in playing and other activities he once enjoyed. He has withdrawn from his friends and family and rarely leaves his house. John has spent large parts of the day lying in bed and states he feels unable to do anything. John told his parents he has been thinking of killing himself and they referred John to a local clinic.

John was screened at a clinic and was diagnosed with depression. After asking some questions and finding out about his diagnosis, John asks what he should do to feel better. The doctor at the clinic tells John that certain people are prone to developing depression and difficult periods in a person's life can increase this likelihood. The doctor says that there are several different treatments for depression, but that *for John, she strongly recommends weekly psychotherapy* to treat his depression.

Scientists have different ideas as to the causes of depression, and many would say that it can be hard to say for certain in a given case. We realize you have only been given limited information about John's depression, and that you may feel you can't say for certain what caused it. But we would like for you to consider John's case and give us your opinions about depression.

John is depressed because that's the type of person he is.

Completely Disagree					**Completely Agree**
1	2	3	4	5	6

John is depressed because he can't make friends

Completely Disagree					**Completely Agree**
1	2	3	4	5	6

John is depressed because he has a chemical imbalance.

Completely Disagree					**Completely Agree**
1	2	3	4	5	6

John is depressed because he has no one he can share his inner thoughts and feelings with.

EXPECTATIONS AND BELIEFS, TREATMENT, DEPRESSION

Completely   **Completely**
Disagree   **Agree**

1   2   3   4   5   6

John is depressed because he can't decide what to do with his life

Completely   **Completely**
Disagree   **Agree**

1   2   3   4   5   6
John is depressed because he doesn't feel loved.

Completely   **Completely**
Disagree   **Agree**

1   2   3   4   5   6

John is depressed because other people don't like him.

Completely   **Completely**
Disagree   **Agree**

1   2   3   4   5   6

John is depressed because he hasn't worked through certain things that happened to him as a child.

Completely   **Completely**
Disagree   **Agree**

1   2   3   4   5   6

John is depressed because his nervous system is just wired that way.

Completely   **Completely**
Disagree   **Agree**

1   2   3   4   5   6

John is depressed because that is the way he learned to be.

Completely   **Completely**
Disagree   **Agree**

1   2   3   4   5   6

John is depressed because he has no specific goals in his life

Completely Disagree					**Completely Agree**
1	2	3	4	5	6

John is depressed because of his genetics.

Completely Disagree					**Completely Agree**
1	2	3	4	5	6

John is depressed because of certain things that happened to him as a child

Completely Disagree					**Completely Agree**
1	2	3	4	5	6

John is depressed because he has a biological illness.

Completely Disagree					**Completely Agree**
1	2	3	4	5	6

John is curious as to how his treatment works to cure his depression. The clinic gives John a brochure about his illness. Inside he finds a the following description of his treatment

There are a number of benefits to be gained from using psychotherapy in treating clinical depression:
  - *It can help reduce stress in your life.*
  - *It can give you a new perspective on problems with family, friends, or co-workers.*
  - *It can make it easier to stick to your treatment.*
  - *You learn ways to talk to other people about your condition.*
  - *It helps catch early signs that your depression is getting worse.*

Individual Psychotherapy *is a one-on-one session with a professional therapist with experience in treating depression and other mood disorders. Your therapist can teach you more about depression and help you understand the diagnosis. Your therapist can also help you develop good coping strategies for dealing with everyday stressors. You can discuss new strategies to manage stress and to prevent your depression from worsening or coming back. You and your therapist may explore the roots of your depression. You might focus especially on any traumas of your childhood. You may examine how your own thoughts and behaviors contribute to your depression. You will learn how to recognize unhealthy behaviors and change them. You may also focus on how your relationships with other people play a role in your depression.*

EXPECTATIONS AND BELIEFS, TREATMENT, DEPRESSION

After reading the brochure, John decides that he will try the treatment recommended by the clinic.

Six months later John is doing better. For the past two months, John has noticed some changes in his life. He no longer feels down, is sleeping better, and has reengaged with his friends and in playing volleyball. John attributes the change to the psychotherapy treatment he received and believes it helped him make some major improvements in his life.

John's doctor has also noticed he is better. She says that it is clear to her that the treatment has helped him correct what needed to be corrected, that he is no longer depressed. She reminds John that some people have only a single episode of depression, but for others, depression can come back. He feels he has learned a lot from the episode of depression and getting treatment. John feels much better and that he no longer needs treatment and so has recently decided to stop psychotherapy). He believes that his treatment has helped him to control his depression and he will be able to avoid getting depressed again.

 John was miserable when he started treatment, but now looks back on the experience with gratitude that he was able to find treatment that allowed him to control his depression. He looks to the future with optimism that he will be able to avoid future episodes.

Please give your opinions about depression by focusing on John's case.

John's treatment has helped to fix a deficit that John had so now he is unlikely to have any future depressive episodes.

Completely					**Completely**
Disagree					**Agree**
1	2	3	4	5	6

John's treatment provided a temporary fix, but he will most likely need additional treatment in the future.

Completely					**Completely**
Disagree					**Agree**
1	2	3	4	5	6

 John's treatment helped change him in a way that will make future episodes of depression less likely.

Completely					**Completely**
Disagree					**Agree**
1	2	3	4	5	6

John got better while getting treatment, but once he discontinues the treatment, his underlying problems are likely to return and he will once again feel depressed

| **Completely** | | | | | **Completely** |
| **Disagree** | | | | | **Agree** |

EXPECTATIONS AND BELIEFS, TREATMENT, DEPRESSION

| 1 | 2 | 3 | 4 | 5 | 6 |

John is likely to have additional incidents of depression throughout his life.

   Completely   **Completely**
     Disagree   **Agree**

| 1 | 2 | 3 | 4 | 5 | 6 |

John's treatment has provided benefits that will likely endure even after he stops the treatment..

   Completely   **Completely**
     Disagree   **Agree**

| 1 | 2 | 3 | 4 | 5 | 6 |

Please answer the following questions about your feelings towards John

How willing would you be to move next door to John?

   Completely   **Completely**
     Unwilling   **Willing**

| 1 | 2 | 3 | 4 | 5 | 6 |

How willing would you be to make friends with John?

   Completely   **Completely**
     Unwilling   **Willing**

| 1 | 2 | 3 | 4 | 5 | 6 |

How willing would you be to spend an evening socializing with John?

   Completely   **Completely**
     Unwilling   **Willing**

| 1 | 2 | 3 | 4 | 5 | 6 |

How willing would you be to have John start working closely with you on a job?

   Completely   **Completely**
     Unwilling   **Willing**

| 1 | 2 | 3 | 4 | 5 | 6 |

How willing would you be to have John marry a member of your family?

   Completely   **Completely**
     Unwilling   **Willing**

| 1 | 2 | 3 | 4 | 5 | 6 |

EXPECTATIONS AND BELIEFS, TREATMENT, DEPRESSION

How familiar and knowledgeable are you about depression?

Very Unfamilair and Knowledge able				**Very Familiar and Knowledge able**	
1	2	3	4	5	6

Do you think John's depression will recur? Why or Why not?_____
_____
_____
_____
_____
_____

Please describe your thoughts about John's treatment.
_____
_____
_____
_____
_____
_____

Has John's treatment corrected the causes of his depression and if so how?
_____
_____
_____
_____
_____
_____

Has John's treatment somehow covered his symptoms without fixing what is fundamentally causing his depression and if so how? _____
_____
_____
_____
_____
_____

Appendix C

John is a 21 year man who has begun to experience some difficulties beginning 1 month ago. John and his girlfriend broke up and John has been worried about what he will do when he graduates from college. John has been unable to sleep at night. He stays awake thinking about what is wrong with his life and different decisions he should have made. John was once an enthusiastic volley ball player, but has recently lost interest in playing and other activities he once enjoyed. He has withdrawn from his friends and family and rarely leaves his house. John has spent large parts of the day lying in bed and states he feels unable to do anything. John told his parents he has been thinking of killing himself and they referred John to a local clinic.

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John is depressed because that's the type of person he is.

Completely Disagree					**Completely Agree**
1	2	3	4	5	6

John is depressed because he can't make friends

Completely Disagree					**Completely Agree**
1	2	3	4	5	6

John is depressed because he has a chemical imbalance.

Completely Disagree					**Completely Agree**
1	2	3	4	5	6

John is depressed because he has no one he can share his inner thoughts and feelings with.

EXPECTATIONS AND BELIEFS, TREATMENT, DEPRESSION

Completely   **Completely**
Disagree   **Agree**

1   2   3   4   5   6

John is depressed because he can't decide what to do with his life

Completely   **Completely**
Disagree   **Agree**

1   2   3   4   5   6

John is depressed because he doesn't feel loved.

Completely   **Completely**
Disagree   **Agree**

1   2   3   4   5   6

John is depressed because other people don't like him.

Completely   **Completely**
Disagree   **Agree**

1   2   3   4   5   6

John is depressed because he hasn't worked through certain things that happened to him as a child.

Completely   **Completely**
Disagree   **Agree**

1   2   3   4   5   6

John is depressed because his nervous system is just wired that way.

Completely   **Completely**
Disagree   **Agree**

1   2   3   4   5   6

John is depressed because that is the way he learned to be.

Completely   **Completely**
Disagree   **Agree**

1   2   3   4   5   6

John is depressed because he has no specific goals in his life

Completely   **Completely**
Disagree   **Agree**

1   2   3   4   5   6

John is depressed because of his genetics.

Completely   **Completely**
 Disagree   **Agree**

 1   2   3   4   5   6
John is depressed because of certain things that happened to him as a child

Completely   **Completely**
Disagree   **Agree**

1   2   3   4   5   6

John is depressed because he has a biological illness.

Completely   **Completely**
Disagree   **Agree**

1   2   3   4   5   6

John is curious as to how his treatment works to cure his depression. The clinic gives John a brochure about his illness. Inside he finds the following description of his treatment:

Many researchers believe that the benefits of antidepressants stem from how they affect certain chemicals, called neurotransmitters, in the brain. These include serotonin, dopamine, and norepinephrine.
What do neurotransmitters do? They work like chemical messengers, passing an electrical signal from one nerve cell in the brain to another. In various ways, different antidepressants seem to affect how these neurotransmitters behave. These neurotransmitters have been shown to be related to a person's mood.
SSRIs (selective serotonin reuptake inhibitors) are the most commonly prescribed antidepressants. They can ease symptoms of moderate to severe depression, are relatively safe and generally cause fewer side effects than other types of antidepressants.
How selective serotonin reuptake inhibitors work
SSRIs ease depression by affecting chemical messengers (neurotransmitters) used to communicate between brain cells. Most antidepressants work by changing the levels of one or more of these naturally occurring brain chemicals.
SSRIs block the reabsorption (reuptake) of the neurotransmitter serotonin (ser-oh-TOE-nin) in

the brain. Changing the balance of serotonin seems to help brain cells send and receive chemical messages, which in turn boosts mood. SSRIs are called selective because they seem to primarily affect serotonin, not other neurotransmitters.

After reading the brochure, John decides that he will try the treatment recommended by the clinic.
Six months later John is doing better. For the past two months, John has noticed some changes in his life. He no longer feels down, is sleeping better, and has reengaged with his friends and in playing volleyball. John attributes the change to the medication treatment he received and believes it helped him make some major improvements in his life.

John's doctor has also noticed he is better. She says that it is clear to her that the treatment has helped him correct what needed to be corrected, that he is no longer depressed. She reminds John that some people have only a single episode of depression, but for others, depression can come back. He feels he has learned a lot from the episode of depression and getting treatment. John feels much better and that he no longer needs treatment and so has recently decided to stop medication. He believes that his treatment has helped him to control his depression and he will be able to avoid getting depressed again.

John was miserable when he started treatment, but now looks back on the experience with gratitude that he was able to find treatment that allowed him to control his depression. He looks to the future with optimism that he will be able to avoid future episodes.

Please give your opinions about depression by focusing on John's case.

John's treatment has helped to fix a deficit that John had so now he is unlikely to have any future depressive episodes.

Completely					**Completely**
Disagree					**Agree**
1	2	3	4	5	6

John's treatment provided a temporary fix, but he will most likely need additional treatment in the future.

Completely					**Completely**
Disagree					**Agree**
1	2	3	4	5	6

John's treatment helped change him in a way that will make future episodes of depression less likely.

| **Completely** | | | | | **Completely** |
| **Disagree** | | | | | **Agree** |

EXPECTATIONS AND BELIEFS, TREATMENT, DEPRESSION

1	2	3	4	5	6

John got better while getting treatment, but once he discontinues the treatment, his underlying problems are likely to return and he will once again feel depressed

Completely   **Completely**
  Disagree   **Agree**

1	2	3	4	5	6

John is likely to have additional incidents of depression throughout his life.

Completely   **Completely**
  Disagree   **Agree**

1	2	3	4	5	6

John's treatment has provided benefits that will likely endure even after he stops the treatment..

Completely   **Completely**
  Disagree   **Agree**

1	2	3	4	5	6

Please answer the following questions about your feelings towards John

How willing would you be to move next door to John?

Completely   **Completely**
  Unwilling   **Willing**

1	2	3	4	5	6

How willing would you be to make friends with John?

Completely   **Completely**
  Unwilling   **Willing**

1	2	3	4	5	6

How willing would you be to spend an evening socializing with John?

Completely   **Completely**
  Unwilling   **Willing**

1	2	3	4	5	6

How willing would you be to have John start working closely with you on a job?

Completely   **Completely**
  Unwilling   **Willing**

EXPECTATIONS AND BELIEFS, TREATMENT, DEPRESSION

1	2	3	4	5	6

How willing would you be to have John marry a member of your family?

**Completely
Unwilling**   **Completely
Willing**

1	2	3	4	5	6

How familiar and knowledgeable are you about depression?

**Very
Unfamilair
and
Knowledge
able**   **Very
Familiar
and
Knowledge
able**

1	2	3	4	5	6

Do you think John's depression will recur? Why or Why not?_____

_____
_____
_____
_____
_____

Please describe your thoughts about John's treatment.

_____
_____
_____
_____
_____
_____

Has John's treatment corrected the causes of his depression and if so how?_____

_____
_____
_____
_____
_____

Has John's treatment somehow covered his symptoms without fixing what is fundamentally causing his depression and if so how? _____

_____
_____

_____
_____