“WHAT IF I HAD NEVER BEEN DEPRESSED?” EFFECT OF COUNTERFACTUAL THINKING ON STIGMA FOR INDIVIDUALS WHO HAVE EXPERIENCED DEPRESSION

A THESIS

SUBMITTED TO THE DEPARTMENT OF PSYCHOLOGY

OF THE STATE UNIVERSITY OF NEW YORK AT NEW PALTZ

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

MASTER OF ARTS IN PSYCHOLOGY

By:

Timea Tozser

May 2018

"WHAT IF I HAD NEVER BEEN DEPRESSED?" EFFECT OF COUNTERFACTUAL THINKING ON STIGMA FOR INDIVIDUALS WHO HAVE EXPERIENCED DEPRESSION

Timea Tozser
State University of New York at New Paltz

We, the thesis committee for the above candidate for the degree of Master of Arts in Psychology, hereby recommend acceptance of this thesis.

Tabitha Holmes, Thesis Advisor
Department of Psychology, SUNY New Paltz

Douglas Maynard, Thesis Committee Member
Department of Psychology, SUNY New Paltz

Melanie Hill, Thesis Committee Member
Department of Psychology, SUNY New Paltz

Approved on _____

Submitted in partial fulfillment of the requirements for the degree of Master of Arts in Psychology at the State University of New York at New Paltz

Acknowledgments

I would like first to thank my thesis advisor, Dr. Tabitha Holmes. Without her guidance, I would not have been able to achieve as much as I have these past two years. She has helped me to learn about myself as a researcher and assisted me to bring my idea to life. I cannot thank her enough for her diligent help through this process and her patience. She has been an excellent advisor and psychologist that I continue to look up to. I would like to acknowledge my committee members, Dr. Melanie Hill and Dr. Doug Maynard, for their guidance on this research I want to thank all the graduate students at SUNY New Paltz. It has been an honor to be a part of your cohort and grow as a researcher alongside you. I also would like to thank to thank Melissa Blankstein for contributing to the inter-rater reliability of this project and her constant help through my last year. Lastly, I would like to thank my parents, sister, and friends for their unconditional, relentless support and encouragement. I could not have done it without everyone’s reassurance and love.

TABLE OF CONTENTS

Abstract

Depression is identified as one of the most common mental illnesses in the United States (NIMH, 2014). To understand such prevalence, many researchers have focused on the cognitive patterns associated with depression, suggesting that depressed individuals focus their attention on experiences of disappointment, worthlessness, and rejection (Gotlib & Joormann, 2010). This may include counterfactual thinking patterns that center upon detrimental "what ifs" that impede meaning-making, a process known to benefit individuals and reduce stigma. Accordingly, the purpose of the current study was to explore the relationship between depression, counterfactual thinking, and stigma. Using a mixed methods design, participants were randomly assigned to consider ways in which their life might have been better or worse if they had never had depression. They also completed a series of questionnaires and open-ended questions. The results indicated that individuals who were randomly assigned and prompted to think either about negative and positive counterfactuals perceived higher levels of stigma than those in the control group. Additionally, individuals who wrote about ways their life would be better without depression reported greater meaning making than those who wrote about ways their life could have been worse. Lastly, systematic differences in emergent themes of meaning-making were identified between groups. The current research sheds light on depression narratives and how individuals create meaning about depression.

Keywords: Depression, counterfactual thinking, stigma, meaning making, narratives

“What if I Had Never Been Depressed?” Effect of Counterfactual Thinking on Stigma for Individuals Who Have Experienced Depression

Depression affects almost 400 million people globally and is identified as one of the most common mental illnesses worldwide (WHO, 2016). It is also one of the most common mental illnesses in the United States with an estimated 16 million adults 18 years or older diagnosed with depression in 2014 (NIMH, 2014). At least 20% of Americans have experienced an incident of depression at some point in their lives (Gotlib & Joormann, 2010). This is particularly important given that depression is an all-encompassing disorder that often affects the way a person acts, thinks, and feels by influencing behavioral, cognitive, and emotional systems simultaneously (NIMH, 2014). People with depression tend to experience negative moods, feelings of worthlessness, and sometimes thoughts of suicide (Gotlib & Joormann, 2010).

Of interest to many psychologists are cognitive theories of depression that suggest that people with depression often have negative thought patterns that are automatic and repetitive. Research has shown that both the specific content of a person’s thoughts and how often these thoughts occur differ between individuals who are depressed and those who are not (Gotlib & Joormann, 2010). In Beck’s Cognitive Triad, for example, Beck posited that depressed people develop a set of cognitions that include negative ideas and schemas about the self, world, and future (Greening et al., 2005). He further explained that people who suffer from depression tend to create cognitive biases or schemes that filter out parts of the environment while focusing their attention on disappointment, worthlessness, and rejection. Accordingly, depressed individuals tend to concentrate on negative stimuli, or, when processing neutral stimuli in the environment, they often selectively interpret it in a negative way (Gotlib & Joormann, 2010). One such selective interpretation might involve counterfactual thinking.

The way individuals with depression express their views on themselves, the world and the future can also be associated with stigma, specifically self-stigma. Stigma is negative stereotyping where a person or group of people are categorized in a negative way that sets them apart from the majority (Roeloffs et al., 2003). Stigma can include labeling, feelings of judgment or embarrassment for individuals who experience stigma, stereotyping and discrimination (Link & Phelan, 2001). Therefore, it is important to note the role that self-stigma, or internalizing feelings of public stigma, plays vis-a-vis thinking styles with depression.

Counterfactual thinking involves considering a "what if" scenario regarding something that may have happened or not happened (Roese, 1997). In most cases, counterfactual thinking allows people to consider alternatives to their current reality. There are two types of counterfactual thoughts: upward and downward. Upward counterfactual thinking involves alternative paths that are better than a person's present reality (Sanna et al., 1999). For example, if a student did poorly on an exam he or she might think: "What if I had studied more; I probably would have performed better on the exam." This type of counterfactual thinking (e.g., things could have been better) often elicits, at least temporarily, a negative mood (Sanna et al., 1999). At the same time, however, research suggests that upward counterfactual thinking often prompts an adaptive behavioral change as individuals identify things they could do to change an outcome in the future (Roese, 1997). The student who thinks about "what if he had studied more," for example, might be more likely to create a plan for doing just that the next time he faces an exam.

Downward counterfactual thinking, on the other hand, involves thinking about alternative paths that could be worse than one's current reality (Sanna et al., 1999). For example, if a person gets into a minor car accident, he or she might think "What if I had not been wearing my seatbelt? I might have gotten hurt or hospitalized". This type of counterfactual thinking (e.g.,

considering an outcome that would have been worse) is associated with a temporary positive mood. By thinking in this fashion, a person re-evaluates what happened to recognize that it may not be as bad as it could have been. Research suggests that downward counterfactual thinking is related to meaning-making, or "the emergence of a personal narrative identity characterized by connectedness, purpose, and growth" (Kray et al., 2010, p.106). Downward counterfactuals have been shown to enhance coping and individual well-being by highlighting how a particular adverse event could have been worse (Markman, McMullen & Elizaga, 2007). This aspect of coping from downward counterfactual thinking is important when considering how to change an individual's narratives of their depression and the process by which they cope with their possible feelings of stigma.

With this in mind, the purpose of the current study was to explore if people with varying levels of depression experience meaning making differently after being prompted to engage in upward or downward counterfactual thinking. We also examined the degree to which counterfactual thinking was related to self-reports of stigma, a way of thinking about depression that may be influenced by meaning-making.

Depression and Thinking Styles of Depression

Depression is defined as a state of low mood associated with psychophysiological symptoms like the inability to feel pleasure, stress, abnormalities in sleep and appetite, and loss of interest in activities (Feng et al., 2015). It can be defined as a neurophysiological disorder that is caused by a chemical imbalance in the brain and/or influenced by external factors in the environment (Kangas, 2001). When individuals with depression attend to their surroundings, they tend to focus primarily on negative stimuli or interpret neutral stimuli as negative (Gotlib & Joormann, 2010). This can be explained by Beck's cognitive-behavioral model of depression

which suggests that, for depressed people, information processing tends to focus on negative themes that are repetitive and circular (Greening et al., 2005).

Information processing of individuals with depression consists of automatic and spontaneous negative cognitive schemas about the self, the world, and the future (Greening et al., 2005). Negative cognitions about the self-include thoughts of worthlessness, unimportance, and shame, while negative cognitions of the world include perceptions about how others are likely to impede goals that are meaningful to depressed individuals (Greening et al., 2005). Negative cognitions about the future, on the other hand, involve thoughts that position the future as hopeless, miserable, or full of failure (Greening et al., 2005). Depressed individuals display these cognitive biases when interpreting life events.

Depressive attribution style is a cognitive thinking style similar to Beck’s triad that is commonly exhibited in individuals with depression (Gonzalo et al., 2012). Research on depressive attribution styles suggest that when those with depression are confronted with an adverse outcome, they tend to identify the causes of those outcomes as uncontrollable, stable, and internal (Quelhas et al., 2008). Depressed individuals experience or perceive the causes of negative events to be due to their characteristics and abilities. For example, a person with depression might think “I did poorly on a test because I always do poorly on tests; it just always happens that way because I am not that smart” (Quelhas et al., 2008). Gonzalo and colleagues’ (2012) research proposes that these negative attributes play a crucial role in the development of depression. When individuals engage in these cognitive biases about themselves and the environment around them, they feel a sense of hopelessness, a trait found in those with depression.

An important aspect of attribution style has to do with perceived control. Importantly, depressed individuals often believe that certain outcomes are not in their control (Quelhas et al., 2008). When a person with depression confronts a negative outcome, they tend to identify the cause as uncontrollable, internal, and stable (Quelhas et al., 2008). Beck suggests that individuals with depression often express general beliefs about themselves or their lives through an external locus of control (Burger, 1984). Accordingly, the way a person reacts to an event may depend on the extent to which he or she believes he or she has control over the situation (Burger, 1984).

Counterfactual Thinking

Counterfactual thinking is defined as considering the 'what if' or 'what might have been' about something that may or may not have happened. It also involves identifying a turning point that could have triggered a series of events (Roese, 1997). The 'what if' thoughts people create are normally future alternatives that could have happened. It is a process whereby people construe a new world meaning from a personal tragedy or event and subsequently think of alternative paths that the event could have taken (Kray et al., 2010). Those who counterfactually deliberate tend to consider a turning point or important prospective event as more meaningful because they believe that it comes from some destiny, rather than a fluke (Kray et al., 2010). Counterfactual thinking has been shown to be beneficial and functional for individuals (Roese, 1997). Regarding the functionality of counterfactual thinking, many studies have demonstrated that when counterfactually thinking occurred after an event, the act of counterfactual thinking led to a change in the individual's behavior (Markman, McMullen, & Elizaga, 2007).

Counterfactual thinking does not necessarily redirect one's life, but it has been shown to enhance the sense that something was meant to be, and this reflection creates meaning in the

event and the individual's life (Kray et al., 2010). The use of counterfactual thinking can be beneficial to understanding situations that have occurred and understanding aspects of a person's life that might have gone differently. Additionally, utilizing counterfactual thinking allows a person to consider different possible selves, which thus allows the person to pursue other life goals (King & Hicks, 2007).

There are two distinct directions described by counterfactual thinking research: upward counterfactual thinking and downward counterfactual thinking. Upward counterfactual thinking can be described as thinking of alternatives that are better than the current reality (Sanna et al., 1999). While upward counterfactual thinking typically elicits a negative mood, it may reinforce the actions the individual needs to take in the future to avoid the same thing happening again (Nasco & Marsh, 1999). Research performed by Roese (1997) described the functionality of upward counterfactual thinking by positing that such thoughts can serve as preparation to increase the likelihood of a desirable outcome or avoidance of an undesirable outcome happening again (1997). For example, if a person was late paying a bill and he was charged a late fee he might think, "If only I had paid it on time, I could have saved $30". Such a thought may prompt the person to put a bill reminder on his calendar to avoid making a similar mistake the following month.

Previous research suggests that this preparative functionality in upward counterfactual thinking may suggest a causal connection between experiences and future success (Roese, 1997). Theoretically, this might be the case because there tends to be a motivational aspect to future related events as individuals hope to act differently to prevent the same incident from happening again (Roese, 1997). From this perspective, when people engage in upward counterfactual thinking, they are better preparing themselves for the future, especially if they feel that they have

control over the situation (Nasco & Marsh, 1999). Research performed by Nasco and Marsh looked at control and upward counterfactual thinking in exam performances over the course of a month. They found that upward counterfactual thoughts were correlated with later changes in behavior (e.g., how much students studied) and higher levels of perceived control.

On the other hand, downward counterfactual thinking is characterized by thoughts about an alternate reality that is worse than reality, which often yields a positive mood (Sanna et al., 1999). Downward counterfactual thinking might include something like: "What if I was not wearing my seatbelt during the accident, I would have gotten more severely hurt; I am lucky that I only had a few bruises." This type of thinking is thought to provide individuals with a sense of meaning; it prompts them to think about an event or situation in the larger context of life. For example, a person in the above scenario might think, "That accident was meant to have happened because now I have a much more cautious view of life." The connection between counterfactual thinking and meaning-making is related to the psychological benefits of creating redemptive life stories (Kray et al., 2010). This occurs when people construe narratives in which negative circumstances are construed as going from bad to good.

The ability to derive meaning from life events can be helpful to the coping process as individuals consider what was meant to be (Kray et al., 2010). Characteristically, downward counterfactual thinking is seen to enhance such feelings by highlighting how a situation or outcome could have been worse (Markman et al., 2006). Such "what ifs" can include a broad spectrum of things like individual consequences, attainable or unattainable opportunities, or relationship outcomes (Markman, McMullen, & Elizaga., 2007). Kray and colleagues (2010) argue that when a person considers alternative outcomes of their life, they can understand why an event has occurred and created the greater meaning of the events that took place (2010). This

kind of quest for meaning also has been found in the personal narrative literature regarding creating purpose and growth from situations. Markman, McMullen, and Elizaga (2007) found that individuals who engaged in downward counterfactual thinking produced meaning dependent on the degree the event was viewed as a catalyst for growth. Their study determined that after an anagram task, participants' future performance was accounted for by reflective processing of downward counterfactual thoughts, while those who upward counterfactually persisted as a result of the strategic thinking that upward counterfactual thoughts prompted (Markman, McMullen, & Elizaga., 2007).

In sum, the nature of counterfactual thinking—be it upward or downward—seems to affect people in different ways. A previous study mentioned by Markman and colleagues (2007) explains the function of counterfactual thinking. Participants in the study played blackjack or poker and were told that they were either playing one game or more than one game. Individuals who believed they were playing more than one game created more upward counterfactuals than those who assumed they were only playing once. The researchers concluded that, for those who thought they would play again, generating upward counterfactuals gave them preparative information to perform better the next time. On the other hand, those who only thought they were playing once created more downward counterfactuals because they wanted to feel good about their one game played (Markman, McMullen, & Elizaga, 2007). Therefore, counterfactual thinking can lead to thoughts of self-motivation depending on the circumstances. Further, as Kray and colleagues (2010) suggest, the construction of life stories with alternative actions allows for a broader consideration of the events that led up to an occasion.

Counterfactual Thinking and Depression

The recent literature that has looked at the relationship between counterfactual thinking and depression has shown mixed results. Nevertheless, there is promising research being done that may lead to a better understanding of the relationship between counterfactual thinking and depression. For example, Feng and colleagues (2015) wanted to understand the relationship between depressive states and directionality of counterfactual thinking through manipulation of hypothetical scenarios. Participants in the study had to complete a decision task by choosing between two symbols on a screen. Once the two options were given, they were shown what the alternative could have been which would be either between a positive alternative outcome and a negative chosen outcome. After the participants were shown the alternative, they were given a point or no point depending on if they chose the correct option which they thought was randomized. This would elicit a positive or negative outcome valence after prompting the counterfactual thinking (Feng et al., 2015).

The study showed that participants with depression were more likely to engage in counterfactual thinking than their non-depressive counterparts regardless of directionality. Researchers assumed that depressed individuals were more susceptible to irrelevant thoughts and typically had more difficulty moving forward from this way of thinking. Feng and colleagues’ (2015) findings also established that the severity, or level of depression, was related to both upward and downward counterfactual thinking. Those who suffered from depressive symptoms were more likely to think in a counterfactual fashion regardless of the manipulation. The authors suggest that this may also be related to the observation that depressed individuals that have extravagant counterfactual thinking accounts which may contribute to the way in which depressed individuals focus on negative aspects of the environment (Feng et al., 2015).

Perceived control is a central aspect of counterfactual thinking—it reflects how the control of the situation is viewed and how much control is believed to be based on individual or outside sources (Markman & Miller, 2006). Importantly, the degree or severity of depression appears to be related to the amount of perceived control in counterfactual thinking. Previous literature demonstrated that those with mild to moderate depressive symptoms were particularly sensitive to levels of perceived control when prompted to engage in counterfactual thinking. Participants in Markman and Miller’s (2006) study were asked to recall a negative academic event that had occurred (e.g., failing an exam), and were prompted to think counterfactually about it. Individuals who were severely depressed generated uncontrollable and less reasonable counterfactuals than those counterfactuals generated by less depressed individuals. The study demonstrated a curvilinear relationship between depression symptomology and controllable (relative to uncontrollable) counterfactual thinking. Controllable counterfactual thinking enhanced control perceptions for individuals who had less severe depressed symptoms. This suggests that understanding a person’s level of external and internal perceived control is important when individuals who have depressive symptoms engage in counterfactual thinking. As we see in depressive attribution style, there is a relationship between severity of depression and where an individual places control in a situation.

Stigma

Stigma has been defined and redefined since the Greeks as a sign of an issue with an individual's moral status or the simple interpretation that one person may be viewed as different from the rest of the public (Goffman, 1963). The Greek definition can be loosely related to modern definitions of social stigma as the extreme disapproval of a person or group of people regarding particular characteristics that stand out to be different from other individuals in society

(Latalova et al., 2014). People do not necessarily become aware of stigma until they feel that their character is undermined by society. Stigma can also be defined as negative stereotyping in which people or groups of people are categorized by something that sets them apart from the majority (Roeloffs et al., 2003).

Stigma can include many different combinations of labeling, stereotyping, separation, status loss, and discrimination. These components can have a dramatic bearing on the distribution of life changes experienced by targets of stigma (Link & Phelan, 2001). For example, if a person is labeled or negatively stereotyped, it may discourage him or her from attending social gatherings or applying to certain jobs because of discrimination. Typically, stigmatized individuals may feel unsure of how they are received by other persons and may interpret everyday events differently because they do not know how others view them (Goffman, 1963). This process proceeds with a culturally induced expectation of rejection. Wiess (2004) discusses that when studying stigma, it is important to acknowledge the social effects of a particular disease and that typically stigma is associated with conventional sources of a disease-causing pain and social suffering. While this social pain may motivate treatment, more often than not people tend to avoid acknowledging their condition (Wiess, 2004).

Stigma is based on cues that elicit certain stereotypes and knowledge structures that the public learns about a social group. In turn, those who endorse negative stereotypes typically engage in discriminatory behavior (Corrigan et al., 2004). Public stigma is when a naïve public endorses prejudice of a stigmatized group (Link et al., 1997). Based on responses to open-ended questions in one study, individuals who have a history of depression feel that messages from family and friends suggest that they hold stigmatizing attitudes of the mental illness, which often lead to feelings of being labeled, judged, or lectured to (Latalova et al., 2014).

In some cases, individuals internalize these perceived prejudices and develop negative feelings about themselves, which is defined as self-stigma. Self-stigma is what members of that stigmatized group do when they internalize the public stigma. The stigmatization process can be described as an influence of unwanted labels on a person that leads to psychological and physical feelings of rejection or isolation (Link et al., 1997). Increased levels of self-stigma itself have been shown to correlate with decreased levels of self-esteem as well as increased depression (Latalova et al., 2014).

For example, individuals who have these feelings of self-stigma may limit their social interactions with others in fear that they will be judged for or embarrassed by having a mental illness (Latalova et al., 2014). Latalova and colleagues (2014) suggest that, in many cases, depression is associated with self-stigma as well as public stigma. Previous qualitative research has shown that patients with depression believe that because they have depression, they must be weak. Latalova et al. (2014) found that providing information about depression was associated with less stigma. Individuals who perceived themselves to have depression who also looked at websites that explained depression, specifically recipients of cognitive behavioral therapy, showed a reduction of personal stigma. However, the effect was not mediated by changes in depressive symptoms. Again, individuals who experience stigma have negative perceptions and views of themselves and this can affect how the world is viewed and possible relations to the future. Beck’s cognitive-behavioral model of attitudes focuses on negative themes of shame and worthlessness (Greening et al., 2005), and therefore could be valuable in explaining the experience of self-stigma.

Individuals who perceive that the public stigmatizes them will form a personal stigma toward themselves. When this self-stigma is significant to the person, this affects how that

person makes sense of the world (Eisenberg et al., 2009). This high level of public stigma may create a barrier for seeking help, especially for those who do not identify as having a mental disorder. Bharadwaj and colleagues' (2015) study demonstrated that there were many participants who under-reported having or possibly having a mental illness, including depression, and these same people were less likely to seek professional help (Bharadwaj et al., 2015). While there may be a multitude of reasons as to why individuals with mental health problems underreport or avoid seeking help, stigma is an important barrier that is a roadblock for many people with depression. Therefore, it is important that researchers continue to investigate the impact of stigma.

Present Study

Given the literature discussed above, the goal of this research is to examine the relationship between counterfactual thinking, meaning making and perceptions of stigma across different levels of depression. As previous research has indicated, downward counterfactual is believed to prompt individuals to engage in increased meaning-making (Roese, 1997). This relationship, however, has never been examined in the context of depression. The purpose of this study, therefore, is to examine if individuals who engage in downward counterfactual thinking report greater levels of meaning-making, as measured both qualitatively and through a self-report questionnaire. Markman, McMullen, and Elizaga (2007) explain the reflection and evaluation model of counterfactual thinking, which the authors suggest occurs especially when an individual downward counterfactually thinks. This is a framework for understanding when an individual reflects on the current situation and considers alternative outcomes. Then the outcome they have fabricated is evaluated against the actual event or outcome that took place. Again, this

model suggests that the individual changes in some way by recognizing the emotion generated by the counterfactual (Markman, McMullen & Elizaga, 2007).

In consideration whether the "what ifs" of life with depression are related to meaning-making, we further suggest that the meaning-making might result in a decrease in perceptions of stigma. The central thrust of stigma research focuses on the perceptions of individuals and the consequences of such perceptions for micro-level interactions (Link & Phelan, 2001). Stigma research suggests that people who experience stigma regarding mental illness report fear or concern that they will be judged or stigmatized if they try to seek help from family members, friends, and colleagues (Bharadwaj et al., 2005). However, very little research has examined how mental health self-stigma can be reduced. Specifically, we predicted the following:

H1: Those who score lower on depression will report lower levels of stigma than those who score higher on depression.

H2: Participants in both counterfactual thinking groups (i.e., upward and downward) will report lower scores in stigma than those who are exposed to the control condition, controlling for depression.

H3a: Those in the downward counterfactual thinking condition will report higher scores on meaning in life presence than those in the upward counterfactual thinking and control conditions while controlling for depression.

H3b: Those in the downward counterfactual thinking condition will report higher scores on meaning in life search than those in the upward counterfactual thinking and control conditions while controlling for depression.

H4: Meaning in life presence will mediate a negative indirect effect between downward counterfactual thinking and stigma, such that engaging in downward counterfactual thinking will result in higher reported meaning in life presence, and thus lower stigma.

In addition to the hypotheses mentioned above, this study will explore how participants exposed to different levels of counterfactual thinking create narratives around their experiences of depression in response to open-ended questions. Given the exploratory, inductive nature of these questions, no specific hypotheses were proposed.

Method

Participants

Inclusion criteria for this study required participants to be at least 18 years of age. They also had to be currently experiencing depression or to have experienced it in the past. All participants in this study were volunteers. Some participants were recruited through a mid-sized state university in New York State and given research credits for participating in the online survey. Other participants were recruited via online recruitment on Facebook posts. The recruitment post was not displayed in any Facebook groups that were specifically involved with depression.

Participants in this study included 190 individuals recruited by online convenience sampling. Of those 190 individuals, a total of 121 completed all measures and were included in the analysis, see Table 1. Participants included 93 females, 25 males, and three who identified as other. The average age in this sample was 21 years of age (M = 21.3 years, SD = 3.94, age range = 18-50 years). About 2% of participants in the study had a Master's degree, 15.7% had a Bachelor's degree, 24% had a 2-year Associate's degree, 51% of participants had some college

but no degree, and 6.6% of participants indicated that they were high school graduates. The sample predominately identified as white (83.5%), followed by 11.6% who identified as another race not listed, and then Asian (2.5%) and Black or African American (1.7%). Participants were administered the Quick Inventory of Depressive Symptomatology (QIDS-SR16) as an inventory of depression symptomology with scores ranging from 0-27. On average participants scored 21.49 on the scale (*SD* = .718). Based on the participants who participated in the survey, 57% of participants fell in the very severe depression group, and 31.4% fell in the severe group, while roughly 18% fell in the mild to moderate depression group, no participants fell in the no depression category (see Figure 1).

Interestingly, it is important to note additional demographic information of the participants based on multiple choice answers. Independent of scores on the depression scale, 51.77% of the participants stated that they were currently experiencing depression while the other 48% of participants stated that they were not currently experiencing depression. Roughly two-thirds (68%) of participants stated that they had seen a counselor or a therapist for their depression while 31% of participants have stated they have not. Lastly, 58% of participants stated that depression runs in their family.

Design

This study utilized a regression design that looked at the range of depressive symptomology scores based on the QIDS_SR16 across three levels of the counterfactual thinking manipulation. Participants were randomly assigned to one of three counterfactual thinking (CFT) groups: Upward CFT, Downward CFT, or a Control group. The dependent variables consisted of scores on the Depression Stigma Scale and a quantitative and a qualitative set of questions

designed to measure meaning-making (which includes the presence of meaning-making and the search for meaning-making in one's life).

Materials

Quick Inventory of Depressive Symptomatology (QIDS SR-16; Rush et al., 2003). This is a 16-item self-report measure of depression that correlates with the nine DSM-IV symptoms typically found in those with depression, with a current study Cronbach alpha of .83. Each item has four choices that range from 0 to 3 that address different criterion domains such as sadness, concentration, energy, and interest. All questions are summed for a total score that ranges from 0 (no depression) to 30 (very severe depression). The previous Cronbach alpha cited for this scale was .88 (Rush et al., 2003).

Meaning in Life Questionnaire (MLQ) (Steger et al., 2006). This is a 10-item questionnaire designed to measure a participant's perceived meaning of life through the presence of meaning and the search for meaning. Each item is on a 7-point Likert scale ranging from 1 (*Absolutely true*) to 7 (*Absolutely Untrue*). Scoring included two different subscales; meaning in life presence (α = .89) which is how full of meaning respondents feel their lives are, and meaning life search (α = .88) which measures how engaged and motivated respondents are in efforts to find meaning or deepen their understanding of meaning in their lives. Previous Cronbach alpha reliability was above .80 for both subcategories (Steger & Yeon, 2010).

Depression Stigma Scale (Kantar et al., 2008). This is a 9-item general self-stigma scale that is related to a person's depression that was designed to measure negative stigmatizing attitudes held by the participant and perceived negative stigmatizing attitudes of others that have been internalized by the participant (α = .88). Each item is on a 7-point Likert scale ranging from 1

(*strongly disagree*) to 7 (*strongly agree*). Total scores were added to create a total score. Previous Cronbach alpha reliability was .95 (Kantar et al., 2008).

Procedure

The survey was administered using Qualtrics. The survey took approximately 35 to 45 minutes to complete. Participants were given a randomized participant code to maintain anonymity throughout the study, and no identifiable questions were asked. Before beginning the survey, participants were asked to read an informed consent which included why the study was being done, what was involved in the study, potential risks, and issues surrounding confidentiality. Participants who agreed to the informed consent were prompted to fill out the QIDS-SR16 to measure depressive symptomology (see Appendix A; Rush et al., 2003). One of the QIDS-SR16 questions discussed thoughts of suicide. Immediately following this survey, participants were told that they could choose to stop participating in the remainder of the study and psychological resources were made available to participants.

Participants were randomly assigned into one of three groups: upward counterfactual thinking, downward counterfactual thinking, and control. In each condition, participants were instructed to read a prompt and answer accordingly. Questions were developed based on previous research in questions asked to prompt downward and upward counterfactual thinking. Individuals in the upward counterfactual thinking group were asked to “imagine how your life would be better if you had never experienced depression. List four specific ways in which your life would be better.”. Individuals in the downward counterfactual thinking condition were asked to “imagine how your life would be worse if you had never experienced depression. List four specific ways I which your life would be worse.”. Lastly, those in the control condition were asked to discuss the last meal they had in its entirety. After completing their assigned writing

task, they were directed to take the Depression Stigma Scale (see Appendix B, Kantar et al., 2008), followed by the Meaning in Life Questionnaire (see Appendix C, Steger et al., 2006). Participants completed a general demographics section that included age, gender, ethnicity, education level, and questions about their depression history and social support (see Appendix D). Finally, they were given short answer meaning making questions created by the researcher (see Appendix E). When the survey was completed, participants were debriefed on the study and were given resources for counseling help if needed.

Results

A series of analysis of variance tests (ANOVAs) were run to see if the three groups were comparable on demographic variables, depression, and mood. Results indicated that age and depression were not significantly different across groups. A chi-square test also indicated that gender proportions were similar across the three groups. A series of correlations were conducted on all demographic variables and outcome measures. There were significant relationships between age and education (r = .52, p < .01), stigma and depression (r = .54, p < .01), stigma and meaning in life presence (r = -.27, p < .01), and depression and meaning in life presence (r = -.54, p < .01). Correlations among demographic variables, stigma, depression, meaning in life presence, and meaning in life search are displayed in Table 2.

Hypotheses 1 and 2

Hypothesis 1 predicted that those who scored lower on the depression scale would report lower levels of stigma than those who scored higher on the depression scale. Hypothesis 2 predicted that participants in both counterfactual thinking groups (i.e., upward and downward) would report lower scores in stigma than those who are exposed to the control condition, controlling for depression. A hierarchical regression analysis was conducted to test the effects of

depression level (as measured by the QIDS_SR16) and the counterfactual manipulation on stigma. Two dummy variables for upward counterfactual thinking and downward counterfactual thinking were created with the control condition as the comparison. Depression scores were entered in step 1, and the counterfactual thinking manipulation dummy variables were entered in step 2.

The hierarchical multiple regression revealed in step 1 that depression scores contributed significantly to the regression model, F (1, 119) = 48.11, $p < .05$. Results suggest that participants who scored lower on the depression scale also scored lower on the stigma scale (Table 3). Results from step 2 indicated that the counterfactual manipulations did not explain additional variance in stigma scores above and beyond depression, $R^2 = .02$, F (2, 117) = 1.75, $p > .05$. Regression coefficients are reported in Table 3. After accounting for depression level, individuals in the two counterfactual thinking conditions did not score significantly different than individuals in the control condition on the stigma scale. Thus, Hypothesis 1 was supported, while Hypothesis 2 was not supported.

Hypothesis 3a

Hypothesis 3a stated that those in the downward counterfactual thinking condition would report higher scores on meaning in life presence than those in the upward counterfactual thinking group and control group while controlling for depression. A two-step hierarchical multiple regression was conducted to test this hypothesis; results are shown in Table 4. Two dummy variables used for the upward and control conditions were created with downward counterfactual thinking as the comparison group. Depression scores were entered in step 1, and the counterfactual thinking manipulation was entered in step 2. The hierarchical regression showed that at step 1, depression scores contributed significantly to the regression model F (1, 107) =

44.46 $p < .05$ and accounted for 29.4% of the variance in meaning in life presence, such that higher depression was associated with lower levels of meaning in life presence. Adding both counterfactual thinking manipulations resulted in the explanation of an additional 4% of the variation in meaning in life presence scores and this change in R^2 was significant, F (2, 105) = 3.11, $p < 05$. Results suggest that after holding depression constant, participants were more likely to score higher on the meaning in life presence scale when in the upward counterfactual thinking condition or the control condition than the downward counterfactual thinking condition. This finding, while significant, was unexpected and consequently Hypothesis 3a was not supported.

Hypothesis 3b

Hypothesis 3b stated that those in the downward counterfactual thinking condition would report higher scores on meaning in life search than those in the upward counterfactual thinking condition and control condition while controlling for depression. A two-step hierarchical multiple regression was conducted to determine if downward counterfactual thinking would contribute incrementally to the prediction of meaning in life search than those in the upward and control condition, above and beyond depression scores, as shown in Table 5. Two dummy variables used for upward counterfactual thinking and control were created, with downward counterfactual as the comparison. Depression scores were entered in step 1, and the counterfactual thinking dummy codes were entered in step 2. The hierarchical multiple regression revealed that in step 1, depression scores did not contribute significantly to the regression model, F (1, 119) = 1.23, $p > .05$ and accounted for only 1% of the variation in meaning in life search. Introducing both counterfactual groups showed that upward counterfactual thinking explained an additional 5% of the variation in meaning in life search.

While the change in R^2 was significant for this step, neither of the individual condition comparisons (i.e., upward counterfactual versus downward counterfactual, control versus downward counterfactual) were significant. Therefore, the downward counterfactual thinking condition did not predict meaning in life search relative to either of the other two conditions, controlling for depression; therefore, Hypothesis 3b was not supported.

Hypothesis 4

Hypothesis 4 stated that the meaning-making measure would serve as a mediator between downward counterfactual thinking and stigma, such that downward counterfactual thinking would result in higher levels of meaning of life presence, which would, in turn, be associated with lower levels of stigma. I utilized the PROCESS SPSS macro by Andrew Hayes to test the significance of the indirect relationship between downward counterfactual thinking (relative to the control condition) and stigma through the mediator of meaning in life presence.

The total effect was not significant, F (1, 71) = 1.85, p = .18, R^2 = .03. As Figure 2 illustrates, the unstandardized regression coefficient between downward counterfactual thinking and the stigma scale was not significant (b = 1.76, p > .05), indicating no direct relationship between the two variables. The predictor variable, downward counterfactual thinking, was significantly related to the mediator, meaning in life presence, b = -3.44, p < .05, suggesting that participants in the downward counterfactual thinking condition scored an average of 3.44 points lower on the meaning in life presence scale than those in the control condition. There was also a significant relationship between meaning in life presence and stigma, controlling for the experimental condition, b = -.408, p < .05. The unstandardized regression coefficient for the indirect effect of downward counterfactual thinking on depression stigma scores through meaning in life presence was 1.40, and unstandardized indirect effects were computed for each

of 10,000 bootstrapped samples, which allowed for the creation of a 95% confidence interval with a lower bound of .20 and an upper bound of 3.60. Because the confidence interval does not include zero, the indirect effect is statistically significant. In this sample, when individuals engaged in downward counterfactual thinking, it was predicted there would be a decrease in the stigma through the mediator of meaning in life presence. In other words, being in the downward counterfactual thinking condition was associated with lower scores on meaning in life presence, which then led to *higher* levels of depression stigma. While the meaning of life presence was a mediating effect, the indirect effect was positive rather than negative, as predicted. Therefore, Hypothesis 4 was not supported.

Qualitative Results

A qualitative analysis was conducted to explore the different themes participants discussed in either the upward counterfactual thinking condition or the downward counterfactual thinking condition. The researcher read and coded each individual response to the counterfactual thinking prompt and created a theme that represented participants' responses. Common themes were then recorded in a codebook that included a definition, example, and subthemes where necessary (see Table 7). A secondary coder was then given 25% of the downward and upward counterfactual thinking responses to code based on the created codebook. Inter-rater reliability for the themes was 76.92%. Disagreements were resolved through consensus coding.

People talked in a variety of different ways when prompted to think how their lives would be worse or better if they had never experienced depression. Across both groups, participants commonly endorsed themes of education, emotion, friends, health, and personal change (see Table 8). Participants who discussed education (11.79%) tended to view depression as related to academic pursuits, grades, and achievements. Roughly 30% of the participants

across groups also mentioned that depression was related to emotional responses. For example, some individuals discussed having an increased or decreased level of anxiety from their depression saying things like, “Sometimes, my anxiety leaves me depressed.” Additionally, participants often discussed friendship (15.83%) in the context of depression, as they talked about having or not having friends or realizing the importance of friendship. Also, participants often talked about their health and would describe their feelings about health or behavioral changes (18.60%).

Most striking was that almost half the participants across both counterfactual thinking conditions discussed the theme of personal change. Personal change was differentiated into sub-themes to create a better understanding of the theme itself. Subthemes included appreciation, perspective, motivation, characteristics, self-awareness, knowledge, close-minded, and “other” categories. Individuals who endorsed this theme often discussed concrete and identifiable changes that they experienced, including changes in perspective, outlook, and behavior.

Upon completion of the counterfactual thinking exercise, participants answered five short-answer meaning-making questions. However, only the first two questions were analyzed for this paper. Emergent themes were identified based on participant’s answers to the questions. There were no a priori predictions regarding the themes individuals would discuss an open-ended question or whether the counterfactual manipulation would affect the ways in which participants would answer questions. Therefore, investigation of these themes was exploratory. Two coders coded 25% of the same codes to assess inter-rater reliability. Meaning making Question 1 had 80.56% consistency in codes, and Question 2 had 84.61% agreement. Differences were resolved through discussion.

Meaning Making Question 1: How has the experience of depression made you the person you are today?

The first meaning making question asked participants to consider how the experience of depression made them the person they are today. The top six themes, endorsed by at least 10% of participants in both counterfactual thinking groups were characteristic, empathy, understanding one's emotion, emotion, personal change, and learning experience (see Table 9).

Characteristic

Participants who talked about their personal characteristics mentioned qualities of their overall personality or personal attributes; the focus was on how they perceive themselves. Subthemes included general positive or negative attributes, such as: "I am worthless. I suck. I am emotionally weak". Other subthemes included discussing strength in themselves, or changes in self-esteem. For example, one participant said, "I am much stronger since experiencing depression." Others discussed feeling independence and identifying depression as a part of their personality, "It [depression] has formed every aspect of who I am…it is every part of my personality and life." Twenty-two percent of participants in the upward counterfactual thinking group endorsed this theme, while 7.5% in the downward counterfactual thinking condition endorsed this theme and 13.73% in the control condition. A Chi-square analysis was calculated, and the difference in the proportions between the three groups was significant, χ^2 (2, N = 213) = 7.13, $p < .05$. Further chi-square analyses revealed that individuals in both of the counterfactual thinking conditions endorsed the theme of characteristic more than those in the control condition.

Empathy

Participants across all conditions talked about the theme of empathy (see Table 10). Many discussed feeling empathy since experiencing depression and acknowledged having

empathy towards other individuals who have experienced depression. Some individuals discussed that through therapy, they have become more self-aware and empathetic, stating things like, "I am able to use these virtues constructively instead of destructively." Others used empathy to help develop a different perspective of themselves: "depression has been, by no means, all negative. I care about the people around me more; I'm way more sensitive and empathetic to those around me. I don't care much about what other people think is best for me anymore, and I focus more on myself. ". Another participant explained, "it's [depression] led me to become more empathetic, and in tune with the struggles everyone faces every day in the life." Some participants discussed that because they have experienced depression themselves, that they "are able to know this feeling, [then] I can understand how others feel who are depressed."

About 11% of those in the upward counterfactual thinking condition endorsed this theme, and the control condition endorsed this theme roughly 14% of the time. About 33% participants endorsed this theme in the downward counterfactual thinking group. A Chi-square revealed that the differences in proportions among the three groups was significant, χ^2 (2, N = 104) = 10.84, $p < .05$. Further Chi-square analyses revealed that the proportion of individuals who endorsed empathy differed between counterfactual thinking groups, χ^2 (1, N = 59) = 9.96, p=.02. The difference in endorsement of this theme between individuals in the downward counterfactual thinking condition and the control condition approached significance, χ^2 (1, N = 58) = 5.60, p =.06. The proportion of participants who endorsed empathy in the upward counterfactual thinking condition and the control condition did not differ significantly.

Understanding One's Emotion

Another theme that was endorsed was understanding one's own emotions, which was when participants discussed their feelings or interpretation of their own emotions after

experiencing the emotion itself. For example, one participant explained that depression allowed her to “realize that I sometimes am an emotional roller coaster.” In these instances, the emphasis was not on the emotional feeling itself; rather, it reflects a realization or the understanding of having a particular emotion. For example, a participant discussed how this particular emotion allowed them to understand other individuals, “I'm more calm and understanding because everyone needs someone to talk to and I think I can pick up when people aren't feeling great because of how he or she acts or what he or she says.” About 4% of participants in the upward counterfactual thinking condition discussed understanding emotions, while 12.5% of participants in the downward condition endorsed this theme, and 8.77% endorsed this theme in the control condition.

A Chi-square analysis was calculated comparing the frequency of the theme understanding emotions. The difference in the proportions was significant, χ^2 (2, N = 213) = 20.29, $p < .05$. Further chi-square analyses found a significant difference in the proportion of emergent themes present in the downward counterfactual thinking and upward counterfactual thinking conditions, χ^2 (1, N = 105) = 4.93, $p < .05$. The difference in proportions from the upward counterfactual thinking condition compared to the control condition was also significant, χ^2 (2, N = 182) = 5.96, $p < .05$. Therefore, people who considered how their lives would be worse than their current reality often talked about understanding their feelings more than people in the other conditions.

Personal Change, Emotion, & Learning Experience

Personal change was coded when participants referred to concrete and identifiable changes in the self; this included subthemes of perspective change, motivation, self-awareness, knowledge, self-exploration, the locus of control, help, and explicit mention of feeling an

awakening (see Table 10). For example, a participant mentioned, "it [depression] has made me view my life differently." Another stated," It has helped me to understand life better, for myself and others." Others described depression as helping them discover and understand themselves in a way that would not have been possible before. One individual stated that the knowledge of having depression has helped her cope with depression itself and "allowed me to grow as a person and return to a more healthy and happy state." About 20% of participants in the upward counterfactual thinking group endorsed this theme, 30% endorsed a personal change in the downward counterfactual thinking group, and roughly 31% of participants in the control condition endorsed this theme. There were no significant differences in theme endorsement of personal change across groups.

Another theme endorsed among all participants was emotion. Participants who endorsed emotion referred to different moods or emotions that they either have experienced or have not. Many common subthemes included emotions like anxiety, appreciation, feeling closed off, nervous, miserable, optimistic, stress, guilt, and enjoyment. Many individuals explained that they were anxious or had feelings of anxiety or loneliness. Roughly 9% of participants in the upward counterfactual thinking condition endorsed emotion, while only 2.5% endorsed emotion in the downward counterfactual thinking condition. The control condition endorsed the theme 13.7% of the time. These differences in endorsement were not significant.

Learning experience referred to the discussion of experiencing depression or other aspects of life. For example, one participant explained that "I wouldn't have learned how to withstand hardships." Some individuals who discussed empathy also explained that without depression they would not have learned to value having empathy so much. Others stated that from depression, "I've learned to respect myself more and that I need to focus on myself and not

worry about what others think of me." Approximately 9% of participants in the upward counterfactual thinking group endorsed depression or other aspects of their life as a learning experience, while 10% talked about learning in the downward counterfactual thinking condition, and roughly 6% endorsed this theme in the control condition. There were no significant differences between groups.

Meaning Making Question 2: What has depression taught you about yourself?

Again, there were no predictions regarding the themes individuals would discuss in the second open-ended question or whether the counterfactual manipulation would affect the responses. Emergent themes included characteristic, emotion, personal change, and learning experience (see Table 11).

Characteristic

Almost all participants who supported the characteristic theme detailed how individuals perceive themselves (see Table 12). Others discussed that they have learned that they are resilient. Many discussed resiliency, "it has taught me that I am resilient but also that depression is a part of who I am." Dialogue regarding feeling strong was also a common theme among the characteristic subtheme. As one participant said, "Depression has taught me that I am stronger than my brain will let me believe." Not all characteristic traits were positive as a few participants discussed negative attributes saying things like, "I am weak and helpless. I have nothing of value to contribute, and I am unlovable and worthless.".

About 23% participants in the upward counterfactual thinking condition endorsed the characteristic theme while 36% of those in the downward counterfactual thinking condition endorsed this theme. Almost half (45%) endorsed characteristic changes in themselves in the control condition. A chi-square analysis was calculated comparing the proportion of the theme

characteristic endorsed between the upward counterfactual thinking condition, the downward counterfactual thinking condition, and the control condition. The difference in the proportions was significant, χ^2 (2, N = 83) = 7.37, p < .05. Further chi-square analysis revealed that the difference in the proportions between the upward counterfactual thinking condition and the control condition was significant, χ^2 (1, N = 72) = 6.56, p < .05.

Emotion

When discussing emotion, people often talked about different moods or feelings they either possessed or didn't, saying things like "But overall it just has made me feel frustrated. I am an outgoing and positive person however my racing negative thoughts and stresses continue to make me feel the opposite". Others discussed being sensitive to particular aspects of their lives or stating that they felt emotionally weak. Approximately 15% of participants in the upward counterfactual thinking condition endorsed emotion, while about 3% of both the downward counterfactual thinking condition and the control condition endorsed emotion. A chi-square analysis was calculated to compare the proportion of the theme emotion endorsed between the upward counterfactual thinking condition, the downward counterfactual thinking condition, and the control condition. Follow up chi-square analyses were run and revealed that a greater proportion of individuals in the upward counterfactual thinking group endorsed emotion than those in the control group, χ^2 (1, N = XX) = 8.21, p < .05).

Personal Change & Learning Experience

Personal change referred to concrete and identifiable changes in a person's self, perspective, outlook, or behavior. This includes self-awareness, feelings of closemindedness, appreciation, perspective change and so forth. Often, individuals would discuss their time after experiencing depression as a time for self-exploration saying things like, "After getting through

that depression, I experienced a period of self-exploration during which I had a lot of new experiences and gained new life views.” Others explained that depression had changed their perspective of life indicating that “When you're at your lowest, it's the easiest thing to do to see yourself as all of the shattered pieces of your whole self. When I'm depressed, I gain the capability to examine every piece of me with the largest magnification lens”. In the same vein, another participant explained how depression had taught him that there are positive aspects of his life and that it will get better in the end: “That even when I have moments of extreme doubt and sadness, when I feel like I don't have a purpose or ask myself "why am I even still alive", that IT WILL PASS. And it WILL GET BETTER. Life just wants to take you for a loop. To push yourself through the depression no matter how bad is a great feeling, every day is an accomplishment to me”. Others referred to motivational changes, “[depression has taught me that] I can make it through more than I think I can.” Both upward and downward counterfactual thinking groups endorsed personal change about 41%, while the control condition endorsed personal change 27% of the time. Chi-square analyses revealed that these differences were not significant.

Learning experience was endorsed across all three conditions; there were no statistical differences in the amount of endorsement across all three conditions. Only 2.56% of participants in the upward counterfactual thinking group endorsed learning experience, while 6.06% of participants in the downward counterfactual thinking condition. about 15.16% of participants in the control condition endorsed the learning experience. Learning experience refers to explicit mentions of depression as a learning experience in an individual’s life. Participants said things such as, “Depression had taught me that there’s a lot in life to look forward to” and “It has taught

me that I need to work on my insight. I tend to separate my emotions from the rational part of my brain, so it's hard for me to articulate why I feel a certain way”.

Discussion

The current study examined how individuals with different levels of depression exposed to different types of counterfactual thinking (upward or downward) would report stigma and meaning-making in a quantitative and qualitative fashion. We anticipated that those who were prompted to think counterfactually (in either an upward or downward manner) would score lower on stigma than those in the control group. We also predicted that individuals who had lower levels of depression would perceive less stigma than those who had higher levels of depression. Lastly, it was projected that the meaning-making measure would serve as a mediator between downward counterfactual thinking and stigma. The current findings contribute to the understanding of how individuals make meaning from their depression and construct their life narrative, as well as how counterfactual thinking influences *the content* of meaning-making.

Hypothesis 1

Hypothesis 1 predicted that those who scored lower on depression would report lower levels of stigma than those that score higher on depression. This hypothesis was supported. The correlation between levels of depression and scores of the stigma scale demonstrated a significant positive linear relationship. Therefore, as the severity of the depression increased, the level of perceived stigma also increased. The magnitude of this relationship was moderate.

This finding supports previous research that demonstrates that the more a person suffers from depression, the more likely he or she is to experience perceived stigma (Kanter et al., 2008). Earlier research suggested that there are higher levels of perceived stigma for certain diagnostic groups like people with more severe depression when compared with those with lower

levels of depression (Kanter et al., 2008). A study by Pyne and colleagues (2004) also found that when measuring patients with varying levels of depression, depression severity was a strong predictor of perceived stigma. Beck's cognitive triad also reflects this concept where individuals with depression create cognitive distortions of how they view the world. Specifically, those with higher levels of depression are more likely to have more severe cognitive distortions of the world and themselves leading to higher levels of perceived stigma (Pyne et al., 2004).

Hypothesis 2

Participants in both the downward counterfactual thinking and the upward counterfactual thinking groups were expected to report lower scores in stigma than those in the control condition. The current study demonstrated that thinking counterfactually was not related to reported levels of perceived stigma. There are several reasons as to why this might have been the case. First, research suggests that perceptions of stigma are very robust and difficult to change. A brief manipulation of thinking styles may not be influential enough to change strongly rooted ideals of perceived stigma. Recent literature on stigma suggests that individuals who perceive a public that stigmatizes them will form a personal stigma toward themselves (Eisenberg et al., 2009). This self-stigma reflects how people make sense of the world. People with depression typically focus on negative themes and are more susceptible to negative irrelevant thoughts, generally described as rumination (Feng et al., 2015). Thus, stigma is difficult to extinguish and may need a more robust manipulation.

Moreover, this population may be particularly resistant to changes in perceived stigma such that the counterfactual manipulation may not have been robust enough to change participants' view of themselves. While the specific scale used in this study did not differentiate between self and public stigma, the cyclical nature of stigma may broadly speak to the results of

this study. Future research may consider exploring self and public stigma separately to see whether the relationship between one dimension or the other is a stronger predictor of an individual’s depression narrative. Furthermore, the act of prompting an individual with depression to engage in counterfactual thinking may have triggered self-stigma or perceived stigma. Some participants explicitly mentioned stigma in their short answer responses. One participant states, for example, “Being hospitalized a couple of years back was a major pivotal point in my life, definitely a "landmark" on the timeline of my life. There's a feeling of stigma and shame when I think about it”. This suggests that prompting people with depression to think about how depression has affected their lives—in both positive and negative ways— may trigger thoughts of the stigma that was difficult to extinguish.

Hypothesis 3a

Hypothesis 3a predicted, based on previous literature on counterfactual thinking and meaning-making, that individuals in the downward counterfactual thinking condition would report higher scores on meaning-making presence than those in the upward counterfactual thinking condition and the control condition after controlling for depression. This hypothesis was not supported. Contrary to what was hypothesized, individuals in the upward counterfactual thinking condition were more likely to score higher on meaning in life presence than their downward counterfactual thinking counterparts. Meaning in life presence refers to being satisfied or somewhat satisfied with one’s understanding of what makes one’s life meaningful (Steger et al., 2006). This finding is puzzling since it is contrary to previous research.

People with depression often focus on themes in their lives that center around negative emotions (Markman & Miller., 2006). Building on Beck’s model, upward counterfactual thinking may be typical in depressed individuals as it requires a focus on how life could have

been better. Maladaptive schemas associated with depression are typically activated by external stressors which closely resemble the conditional characteristic of upward counterfactuals. This could, in theory, produce self-referential biases in information processing leading to negative affect (Broomhall et al., 2016). Cognitive dissonance is psychological discomfort experienced when a person holds two cognitions that are inconsistent with one another. This results in an aversive motivational state or pressure to seek to remove one of the two dissonant cognitions (Bem, 1967). Attributes of blame in upward counterfactuals typically focus on the self or on other individuals who may evoke feelings of regret or self-blame (Broomhall et al., 2016).

In this case, upward counterfactual thinking may have prompted cognitive dissonance when participants thought about how their lives could have been better than their current reality in light of meaning-making. Therefore, to avoid the psychological discomfort of engaging in this style of thinking, individuals may have reported higher meaning making presence because it aligned with how their lives could have been better than their current reality. A meta-analysis by Broomhall and colleagues (2016) suggests that theoretically upward counterfactuals correspond to heightened distress with an individual with depression. To avoid feelings of acute anxiety, participants may have reported higher meaning making presence. For participants to feel better in the short term, they may have thought about how their life has meaning. This prompt may have generated more meaning than one that asks individuals to think about how their life would be worse, an exercise that would not engender feelings of anxiety.

This also brings into question the way the counterfactual thinking prompt was worded. Specifically, participants were asked to "imagine how your life would be worse if you had never experienced depression." Given that the question asked about the past, preparatory functions, which research suggests is correlated with upward counterfactual thinking, would have been

challenging to generate. Generating a plan to decrease depression in the future would have been difficult when participants were asked to think of how their life "would have been worse." To alleviate the discomfort of thinking about "what ifs" that have no corrective action, participants might have thought about meaning-making in an unexpected way.

Hypothesis 3b

Hypothesis 3a predicted, based on previous literature on counterfactual thinking and meaning-making, that individuals in the downward counterfactual thinking condition would report higher scores on meaning-making search than those in the upward counterfactual thinking condition and the control condition, controlling for depression. Meaning in life search is actively seeking something or someone to give one's life purpose (Steger et al., 2006). This hypothesis was not supported. Interestingly, upward counterfactual thinking is related to motivational and preparatory benefits (Zeelenberg & Peters 2007). In other words, upward counterfactual thinking is thought to prompt people to make changes as they focus on ways in which life could be better. Theoretically, this finding makes sense in that as people think about how their lives could be better they must acknowledge that they need to search for meaning at a future point actively. This is in contrast to those in the downward counterfactual group who were more likely to acknowledge that meaning-making is present in their lives. This is an important finding in that it suggests that upward counterfactual thinking might cause individuals to identify a need, while downward counterfactual thinking creates an appreciation for what one already has.

The results of this study demonstrated the complexity of how individuals create meaning in their lives especially when prompted to think in a downward counterfactual manner. The previous research has shown that meaning-making is beneficial regardless of whether it is viewed as a search for meaning or acknowledging meaning in one's life. While this study

prompted individuals to consider depression and its meaning in their lives, it may have also prompted individuals to consider other parts of their lives. This was captured in the qualitative narratives. Further analysis and research should specifically look at the search for meaning through the lens of how depression has impacted a person's life. This could allow for a full understanding of the relationships found in the current study.

Hypothesis 4

The fourth hypothesis was not supported. We analyzed the relationship between participants in the downward counterfactual thinking condition and scores on the stigma scale, as mediated by meaning in life presence. There was no direct effect between downward counterfactual thinking and stigma. The mediation analysis demonstrated that meaning in life presence served as a mediator in the indirect relationship between downward counterfactual thinking and scores on the stigma scale but in the opposite way as predicted. In past research, downward counterfactual thinking resulted in an increase in meaning-making (Kray et al., 2010). In people who have depression, however, it appears that when they think about ways in which their life might have been worse, they get "stuck" thinking about the negatives associated with living with depression which may result in a decrease in meaning making and a subsequent increase in stigma. As Beck Cognitive Triad describes, depressed people focus on negative themes that center around disappointment and worthlessness (Gotlib & Joormann, 2010). Thus, information processing about the self-focus on these themes and elicit an increased awareness or negative view on stigma (Greening et al., 2005).

Counterfactual Thinking Themes

People talked in a variety of different ways when prompted to think of how their lives would be better or worse if they never experienced depression. Across both groups, participants

commonly endorsed themes like education, emotion, friends, health, and personal change. Almost half the participants across both counterfactual thinking conditions discussed the theme of personal change. Individuals who endorsed this theme often discussed how their view of life would have been different without depression. For example, one participant said, "It [depression] has taught me that there is a lot in life to look forward to." Consistent with previous literature that suggests that individuals can construct new meaning from a personal tragedy or event (Kray et al., 2010), those with depression are often able to see an "upside" to have experienced depression.

How has the experience of depression made you the person you are today?

The first meaning making question asked participants to consider how the experience of depression made them the person they are today. Themes that were present across both groups in at least 10% of the sample included: empathy, characteristic, understanding one's emotion, emotion, personal change, and learning experience.

In both downward and upward counterfactual thinking conditions, the meaning-making questions gave light to the understanding of identity and personal narratives for those with depression. A person's story comes from an accumulation of past events, the perceived present, and possible anticipated future; this story helps in fostering one's identity (McAdams et al., 2001). People's life stories differ in the amount of positive or negative affect they have experienced over their lifetime (McAdams et al., 2001). Individuals who have experienced an extended bout of depression may view their life stories as more negative than positive, which in some cases we saw in the narratives. For example, one person said, "depression has given me my poor ability to read, the absence of motivation, an inability to enjoy anything I do, a failure to deal with most of my responsibilities, and it has created the unreliable and slightly meaningless

person that I am today." However, in many more cases, participants' reconstructions of their depression narratives were redemption stories in which a bad situation (i.e., depression) turned positive (McAdams et al., 2001).

Previous literature has discussed benefit-finding in people's narratives when coping with adversity (McAdams et al., 2001). Several studies done by McAdams and colleagues focus on the extent to which people interpret negative life events, like depression, and how these interpretations create meaning in individuals' lives (McAdams et al., 2001). This is very similar to what people do when they counterfactually think. People who "benefit-find" express ideas of changes in the self, changes in their relationships with other people, and changes in their philosophy of life (McAdams et al., 2001). Many participants across the board also discussed changes in their friendships or family relationships, saying things like "I luckily had a good support system and having my boyfriend stick by me through it brought us closer together. My relationship with those who helped me through depression have become stronger, and I am very thankful for that". Therefore, it appears that asking people to engage in counterfactual thinking can facilitate different kinds of meaning-making.

What has depression taught you about yourself?

The second meaning making question asked participants to consider what things depression has taught them about themselves. Both groups endorsed themes of characteristic, emotion, personal change, and learning experience (see Table 5). Theme endorsement included the top five themes that at least 10% of the participants endorsed.

In terms of the characteristic theme, individuals who were prompted to think about how their life would be better (upward counterfactual thinking) discussed more characteristic changes they have learned or noticed about themselves since having or while experiencing depression

than those in the control group. Similarly, there were systematic differences in the frequency of theme endorsement for emotion in that those in the upward counterfactual thinking group discussed more than the control group about having or not having particular emotions. Previous literature has suggested that people who have experienced mental illnesses have reported a broader self-understanding, and self-growth when they talk about their self-narrative (McAdams et al., 2001).

The personal change theme was endorsed across all three conditions, and there were no statistical differences across conditions in the frequency of this theme endorsement. The personal change referred to any internal variations in self-awareness, feelings of closemindedness, appreciation, or perspective change. Therefore participants in all three conditions discussed internal changes in themselves. Additionally, participants across all three conditions equally discussed how depression became a learning experience for them. Participants who discussed learning experiences referred to specific examples. As one participant said: “It has taught me there's a lot in life to look forward to.”

In previous research on personal reflection, research demonstrated that when individuals create meaning in negative outcomes, like having depression, it also enhances perceptions of the benefits and growth opportunities from these situations (Markman, McMullen, & Elizaga., 2007). Benefit finding has not been shown to correlate with the amount of time since the illness or traumatic event, but the severity of the event could relate positively to more potential for positive growth over time (Antoni et al., 2001). A study done by Antoni and colleagues (2001) looked at the benefits of benefit finding for women with early-stage breast cancer and found that benefit finding intervention helped women who were lowest in optimism compared to their counterparts with higher levels of optimism. Previous research that looked at cancer patients and

individuals who have experienced traumatic events have stated that these traumatic events were often framed as positive at the end (Antoni et al., 2001).

Personal change was the most endorsed theme across all conditions for this meaning-making question (as well as the first meaning making question and the counterfactuals themselves). This aligns with previous literature that suggests that most people engage in benefit finding when creating their narratives around depression (Antoni et al., 2001). While depression is frequently pegged as something that is defined by negative moods, negative outlooks on life, and negative self-perceptions, in most cases, individuals with depression see the benefits of depression in their life narratives. More often than not, participants discussed being stronger since their depression and felt as though their life narratives have helped them create their identity and create a new perspective on life.

Limitations

While the study had many strengths, there are some limitations regarding the participants used in the analysis. The sample size itself is relatively small and may not be a representative sample of a vast and diverse population of individuals who struggle, or have struggled with, depression. There was a lack of racial diversity in the sample of the current research and a large part of the sample identified as female. Additionally, the age range of the sample mostly included emerging adults.

Additionally, there was an unpredictably skewed distribution of the depression scale (QIDS-SR16) toward the more severe levels of depression than originally anticipated. Perhaps this may be the reason why the counterfactual thinking manipulation did not work in this study. Previous literature suggests that people with lower levels of depression are affected by counterfactual thinking regardless of directionality (Markman & Miller, 2006). Research

suggests that individuals who are highly depressed could have a difficult time engaging in counterfactual thinking or thinking about alternative outcomes (Roley et al., 2015). Therefore, the short manipulation may not have had a strong enough effect on changing the style of thinking for these participants in regard to stigma specifically.

Additionally, the findings may be a result of problems with the scales used in this study. The stigma scale did not differentiate between public and private stigma, something that in hindsight would have been useful. Additionally, the meaning-making subthemes, search and presence, may not capture the complexity of meaning-making as it relates to depression. This was evidenced by findings from the qualitative portion of the study.

Lastly, the counterfactual thinking manipulation may not have been robust enough to produce changes in perceived stigma among groups. There were no differences in levels of stigma across the three groups. The counterfactual thinking manipulation was, however, able to demonstrate differences in how depressed individuals depicted their life narratives in an open-ended format. This needs future exploration.

Future Directions

Research in counterfactual thinking has suggested that mood can influence counterfactuals. For example, research suggests that counterfactual thinking has been associated with provoking negative moods and it can be related to repetitive thought or rumination. When this occurs, counterfactual thinking no longer produces meaning (Roese, 1997). However, past research has shown that counterfactual thinking is beneficial and functional for individuals (Roese, 1997). Roese (1997) suggests that counterfactual thinking may be "triggered" by negative emotional experiences and when an individual feels bad or is in a bad mood, they are more likely to consider these kind of "what if" counterfactual thoughts. As

mentioned previously, depression is typically associated with negative mood. Therefore it is suggested that individuals with depression may be affected differently than those not experiencing depression when prompted to counterfactually think. Therefore, it is suggested that future research regarding counterfactual thinking, depression, and understanding narratives may need to use mood as a possible covariate in analyses.

This work can be used in a counseling setting in several complex ways. The qualitative findings revealed that depressed individuals are able to generate ideas of how depression has become a positive influence in their lives. Moreover, it demonstrated that counterfactual thinking is related to meaning-making about depression. This implies that if future interventions incorporated counterfactual thinking into their therapy sessions, that over a span of time, individuals may be able to shape their narratives in beneficial ways. For example, having individuals construct narratives through counterfactual thinking may elicit empathy or emotional understanding. With consecutive counseling sessions, individuals who counterfactual think as they create their narratives may, by extension, express lower levels of stigma.

Narrative therapy has been used for many years, focusing on developing therapeutic solutions around the narrative frame (Carr, 1998). Therapeutic re-authoring enables a change in personal narratives that allow people to understand negative events as something with positive elements. This kind of narrative therapy tries to remove or reconstruct labels patients put on themselves, or they perceive the world is putting on them. Within narrative therapy, the goal is to view the difficulties of labialization and to change it from an intrinsic view of self to a worldview that can change (Carr, 1998). Drawing from the narratives from the study, many participants discussed empathy and having a deeper understanding of depression. Therefore, if

therapy can focus on rewriting and encouraging individuals to discuss their narratives, then it could show therapeutic benefits.

Additionally, research comparing the short-term and long-term benefits of counseling have shown strong benefits to a longer-term counseling session. Perren and colleagues (2009) found after interviewing individuals in counseling over a span of 3 years, that short-term benefits for patients in counseling included symptom relief and support with dealing with daily problems, while long-term benefits suggested changes in perspective of the self, how some individuals think about others, and how one acts. Based on their results, the authors stress the importance of long-term benefits from the client perspective. The current study suggests that using counterfactual thinking in narrative therapies may be beneficial to individuals who experience depression over the long term. Based on Beck's Cognitive model, negative themes regarding the self, the future, and the world could be utilized in narrative therapy by tapping into counterfactual thinking which would be beneficial in changing personal narratives on stigma and perceptions of stigma.

References

Adapted from Whittlesey, V. (2001). *Diversity activities for psychology*. Boston: Allyn and Bacon, and Fischer, E., and Farina, A. (1995). Attitudes toward seeking psychological professional help: A shortened form and considerations for research. *Journal of College Student Development, 36*, 368-373.]

Bem, D. J. (1967). Self-perception: An alternative interpretation of cognitive dissonance phenomena. *Psychological Review, 74*(3), 183.

Burger, J. M. (1984). Desire for control, locus of control, and proneness to depression. *Journal of Personality, 52*(1), 71-89.

Beck, A. T., Steer, R. A., & Brown, G. K. (1996). Beck depression inventory-II. *San Antonio, TX: Psychological Corporation*, b9.

Bharadwaj, P., Pai, M. M., & Suziedelyte, A. (2015). *Mental health stigma* (No. w21240). National Bureau of Economic Research.

Boyd, J. E., Adler, E. P., Otilingam, P. G., & Peters, T. (2014). Internalized stigma of mental illness (ISMI) scale: A multinational review. *Comprehensive Psychiatry, 55*(1), 221-231.

Broomhall, A. G., Phillips, W. J., Hine, D. W., & Loi, N. M. (2017). Upward counterfactual thinking and depression: A meta-analysis. Clinical Psychology Review.

Carr, A. (1998). Michael White's narrative therapy. *Contemporary Family Therapy, 20*(4), 485-503.

Corrigan, P. (2004). How stigma interferes with mental health care. *American Psychologist, 59*(7), 614.

Depression. (2016, April). from http://www.who.int/mediacentre/factsheets/fs369/en/

Eisenberg, D., Downs, M. F., Golberstein, E., & Zivin, K. (2009). Stigma and help-seeking for mental health among college students. *Medical Care Research and Review*, *66*(5), 522-541.

Feng, X., Gu, R., Liang, F., Broster, L. S., Liu, Y., Zhang, D., & Luo, Y. J. (2015). Depressive states amplify both upward and downward counterfactual thinking. *International Journal of Psychophysiology*.

Greening, L., Stoppelbein, L., Dhossche, D., & Martin, W. (2005). Psychometric evaluation of a measure of Beck's negative cognitive triad for youth: applications for African–American and Caucasian adolescents. *Depression and Anxiety*, *21*(4), 161-169.

Goffman, E. (1963). Behavior in public place. *Glencoe: the free press, New York*.

Golberstein, E., Eisenberg, D., & Gollust, S. E. (2008). Perceived stigma and mental health care seeking. *Psychiatric Services*.

Gonzalo, D., Kleim, B., Donaldson, C., Moorey, S., & Ehlers, A. (2012). How disorder-specific are depressive attributions? A comparison of individuals with depression, post-traumatic stress disorder, and healthy controls. *Cognitive therapy and research*, *36*(6), 731-739.

Gotlib, I. H., & Joormann, J. (2010). Cognition and depression: current status and future directions. *Annual review of clinical psychology*, *6*, 285.

Kanter, J. W., Rusch, L. C., & Brondino, M. J. (2008). Depression self-stigma: a new measure and preliminary findings. *The Journal of nervous and mental disease*, *196*(9), 663-670.

King, L. A., & Hicks, J. A. (2007). Whatever happened to" What might have been"? Regrets, happiness, and maturity. *American Psychologist*, *62*(7), 625.

Kray, L. J., George, L. G., Liljenquist, K. A., Galinsky, A. D., Tetlock, P. E., & Roese, N. J. (2010). From what might have been to what must have been: counterfactual thinking creates meaning. *Journal of personality and social psychology*, *98*(1), 106.

Latalova, K., Kamaradova, D., & Prasko, J. (2014). Perspectives on perceived stigma and self-stigma in adult male patients with depression. *Neuropsychiatric disease and treatment*, *10*, 1399.

Link, B. G., & Phelan, J. C. (2001). Conceptualizing stigma. *Annual Review of Sociology*, 363-385.

Link, B. G., Struening, E. L., Rahav, M., Phelan, J. C., & Nuttbrock, L. (1997). On stigma and its consequences: evidence from a longitudinal study of men with dual diagnoses of mental illness and substance abuse. *Journal of Health and Social Behavior*, 177-190.

Mandel, D. R., & Dhami, M. K. (2005). "What I did" versus "what I might have done": Effect of factual versus counterfactual thinking on blame, guilt, and shame in prisoners. *Journal of Experimental Social Psychology*, *41*(6), 627-635.

Markman, K. D., McMullen, M. N., & Elizaga, R. A. (2008). Counterfactual thinking, persistence, and performance: A test of the reflection and evaluation model. *Journal of Experimental Social Psychology*, *44*(2), 421-428.

Markman, K. D., & Miller, A. K. (2006). Depression, control, and counterfactual thinking: Functional for whom?. *Journal of Social and Clinical Psychology*, *25*(2), 210-227.

Mayer, John D., and Yvonne N. Gaschke. "The experience and meta-experience of mood." *Journal of personality and social psychology* 55.1 (1988): 102.

McAdams, D. P., Reynolds, J., Lewis, M., Patten, A. H., & Bowman, P. J. (2001). When bad things turn good and good things turn bad: Sequences of redemption and contamination

in life narrative and their relation to psychosocial adaptation in midlife adults and in students. *Personality and Social Psychology Bulletin*, *27*(4), 474-485

Nasco, S. A., & Marsh, K. L. (1999). Gaining control through counterfactual thinking. *Personality and Social Psychology Bulletin*, *25*(5), 557-569.

NIMH » Depression. (2016, October). https://www.nimh.nih.gov/health/topics/depression/index.shtml

Perren, S., Godfrey, M., & Rowland, N. (2009). The long-term effects of counseling: The process and mechanisms that contribute to ongoing change from a user perspective. *Counseling and Psychotherapy Research*, *9*(4), 241-249.

Pyne, J. M., Kuc, E. J., Schroeder, P. J., Fortney, J. C., Edlund, M., & Sullivan, G. (2004). Relationship between perceived stigma and depression severity. *The Journal of nervous and mental disease*, *192*(4), 278-283.

Quelhas, A. C., Power, M. J., Juhos, C., & Senos, J. (2008). Counterfactual thinking and functional differences in depression. *Clinical psychology & psychotherapy*, *15*(5), 352-365.

Robitschek, C. (1998). Personal growth initiative: The construct and its measure. *Measurement and Evaluation in Counseling and Development*, *30*, 183-198.

Roeloffs, C., Sherbourne, C., Unützer, J., Fink, A., Tang, L., & Wells, K. B. (2003). Stigma and depression among primary care patients. *General hospital psychiatry*, *25*(5), 311- 315.

Roese, N. J. (1997). Counterfactual thinking. *Psychological Bulletin*, *121*(1), 133.

Rosenberg, M. (1965). Society and the adolescent self-image. Princeton, NJ: Princeton University Press.

Rotter, J. B. (1966) Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs: General and Applied, 80, 1-28.

Sanna, L. J., Turley-Ames, K. J., & Meier, S. (1999). Mood, self-esteem, and simulated alternatives: thought-provoking affective influences on counterfactual direction. *Journal of personality and social psychology*, *76*(4), 543.

Schwartz, S., & Meyer, I. H. (2010). Mental health disparities research: The impact of within and between group analyses on tests of social stress hypotheses. *Social science & medicine*, *70*(8), 1111-1118.

Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The Meaning in Life Questionnaire: Assessing the presence of and search for meaning in life. Journal of Counseling Psychology, 53, 80-93.

Steger, M. F., & Yeon Shin, J. (2010). The relevance of the Meaning in Life Questionnaire to therapeutic practice: A look at the initial evidence. In *International Forum for Logotherapy* (Vol. 33, No. 2, p. 95).

Written by Michael Kerr | Published on March 29, 2012, Medically Reviewed by George Krucik, MD, & Kerr, M. (2012, March 29). Depression and College Students.

Zeelenberg M, Pieters R. A theory of regret regulation 1.0. Journal of Consumer Psychology. 2007;17:3–18

Table 1

Demographics

Demographics	Total N (%)	M (*SD*)
Sex	121 (100%)	1.82 (*.447*)
Male	25 (20.7%)	
Female	93 (76.9%)	
Other	3 (2.5%)	
Age		21.31 (*3.94*)
18-21	85 (70.2%)	
22-25	28 (23.2%)	
26-30	6 (5%)	
>40	2 (1.6%)	
Race		1.56 (*1.35*)
White	101 (83.5%)	
Black/African American	2 (1.7%)	
Asian	3 (2.5%)	
Other	14 (11.6%)	
Education		3.55 (*.89*)
High School Graduate	8 (6.6%)	
Some college, no degree	62 (51.2%)	
Associate Degree	30 (24.8%)	
Bachelor's degree in college	19 (15.7%)	
Master's Degree	2 (1.7%)	

Note. M= Mean**,** *SD*= Standard Deviation

Table 2

Correlation Matrix

	2.	3.	4.	5.	6.
1. Age	.52**	-.14	-.09	-.05	.10
2. Education		-.16	-.12	06	-.05
3. Stigma			.54**	-.27**	.11
4. Depression (QIDS_SR16)				-.54**	.10
5. Meaning in Life Presence					-.004
6. Meaning in Life Search					

Note. $p < .01$ ** $p < .05$*

Table 3

Summary of Hierarchical Regression Analysis for Variables Predicting Scores on Stigma

Variable	β	*t*	R^2	Δ R^2
Step 1			.29***	
QIDS_SR16	.54	6.94***		
Step 2			.31***	.02
Upward Counterfactual Thinking	.16	1.79		
Downward Counterfactual Thinking	.12	1.33		
QIDS_SR16	.52	6.77***		

Note. $N = 121$; β = standardized regression coefficient;
*$p < .05$, **$p < .01$, ***$p < .001$

Table 4

Summary of Hierarchical Regression Analysis for Variables Predicting Meaning in Life Presence

Variable	β	*t*	R^2	Δ R^2
Step 1			.29***	
QIDS_SR16	-.54	-6.67***		
Step 2			.33***	.04*
Upward Counterfactual Thinking	.21	2.23*		
Control	.21	2.17*		
QIDS_SR16	-.54	-6.74***		

Note. N = 121; *p < .05, **p < .01, ***p < .001 β = standardized regression coefficient;

Table 5

Summary of Hierarchical Regression Analysis for Variables Predicting Meaning in Search

Variable	β	*t*	R^2	Δ R^2
Step 1			.01	
QIDS_SR16	.10	1.11		
Step 2			.06*	.05*
Upward Counterfactual Thinking	.15	1.37		
Control	-.12	-1.13		
QIDS_SR16	.08	.94		

Note. N = 119; *p < .05, **p < .01, ***p < .001 β = standardized regression coefficient;

Table 6

Frequency of Participant Theme Endorsement for Counterfactual Thinking Prompts

	Manipulation	
Meta-Themes	Upward Counterfactual Thinking (%)	Downward Counterfactual Thinking (%)
Education	10.61	1.18
Emotion	13.64	15.29
Friends	9.85	5.88
Health	17.42	1.18
Personal Change	20.45	27.05

Note. This is a display of the percentage of the frequency of the themes endorsed by participants in the upward counterfactual thinking condition and participants in the downward counterfactual thinking in the counterfactual thinking manipulation. These are the top five themes that were endorsed across both groups.

Table 7

Meta-Theme	Definition
Education (11.79%)	Refers to academic activates/pursuits, grades, academic achievements (Subthemes include: grades, academic behavior, choices, timeline, and other) -i.e., "I could be doing poorly in school."
Emotion (28.93%)	Refers to different moods or emotions, either having these emotions or not having these emotions (Subthemes include: Anxiety, appreciation, closed off, empathy, suicide, love, nervous, emotion towards others, sad, miserable, optimistic, stress, guilt, enjoyment, other) -i.e., "I wouldn't be so nervous."
Friends (15.73%)	Refers to any mention of friends, either not having any or having friends -i.e., "I would have more friends."
Health (18.60%)	Refer feelings, behaviors, decision, activities that directly or indirectly affect physical well-being, physical appearance (Subthemes include: working out, diet, decisions, physical appearance, sleep, self-harm, active/energy, other) -i.e., "Would have a crappier diet."
Personal Change (47.50%)	Refers to concrete and identifiable change a person notices in their perspective, outlook or behavior (Subthemes include: appreciation, perspective, motivation, characteristics, self-awareness, knowledge, closeminded, other) -i.e., "I wouldn't have learned as much about myself"

Note. This is a display of the top five theme endorsements across both counterfactual groups on the counterfactual thinking manipulation. Included is the definition of each meta-theme including subthemes where applicable and participant examples.

Table 8

Frequency of Participant Theme Endorsement for Meaning Making Question 1
How has the experience of depression made you the person you are today?

	Manipulation		
Meta-Themes	Upward Counterfactual Thinking (%)	Downward Counterfactual Thinking (%)	Control (%)
Characteristic	22.22	7.5	13.73
Empathy	11.11	32	13.73
Understanding One's Emotion	4.44	12.5	8.77
Emotion	8.89	2.5	13.73
Personal Change	20	30	31.37
Learning Experience	8.89	10	5.88

Note. This is the display of the percentage of the frequency of the themes endorsed by participants in the upward counterfactual thinking condition, downward counterfactual thinking and control condition for the first meaning making question. These are the themes that at least 10% of the participants endorsed across all groups.

Table 9

Meta-Theme	Definition
Characteristic Up (22.22%) Down (7.50%) Control (13.73%)	Refers to a way an individual perceives themselves (Subthemes include: negative attributes, positive attributes, strong, full, introverted, needs, self-esteem, noticeable changes, confidence, decisiveness, resilient, depression) -i.e., "I feel stronger since overcoming depression."
Empathy Up 11.11%) Down (32%) Control (13.73%)	Refers to direct mention of empathy, or feeling towards themselves or towards others -i.e., "I feel more empathy towards others who have depression."
Understanding One's Emotions Up (4.44%) Down (12.50%) Control (0%)	Understanding and interpretation one's emotions after experiences them -i.e., "I would not have understood my emotions as deeply as others do."
Emotion Up (8.89%) Down (2.50%) Control (13.75%)	Refers to different moods or emotions, either having these emotions or not having these emotions (Subthemes include: Anxiety, appreciation, closed off, empathy, suicide, love, nervous, emotion towards others, sad, miserable, optimistic, stress, guilt, enjoyment, other) -i.e., "I am appreciative of what I have."
Personal Change Up (20.00%) Down (30.00%) Control (31.37%)	Refers to concrete and identifiable change a person notices in their perspective, outlook or behavior. (Subthemes include: perspective, motivation, knowledge, self-exploration, locus of control, help, and awakening) -i.e., "Depression has helped me to discover and understand myself in a way I wouldn't have been able to before."
Learning Experience Up (8.89%) Down (10.00%) Control (5.88%)	Refers discussion of learning experiences of depression, or other aspects of life. -i.e., "I wouldn't have learned how to withstand hardships."

Note. This table is a detailed description of all the themes endorsed by the three conditions for meaning-making question 1. Up refers to the upward counterfactual thinking condition, down refers to the downward counterfactual thinking condition and control refers to the control condition.

Table 10

Frequency of Participant Theme Endorsement for Meaning Making Question 2

What has depression taught you about yourself

	Manipulation		
Meta-Themes	Upward Counterfactual Thinking (%)	Downward Counterfactual Thinking (%)	Control (%)
Characteristic	23.08	36.36	45.45
Emotion	15.38	3	3.03
Personal Change	41.02	42.42	27.27
Learning Experience	2.56	6.06	15.16

Note. This is the display of the percentage of the frequency of the themes endorsed by participants in the upward counterfactual thinking condition, downward counterfactual thinking and control condition for the second meaning making question. These are the themes that at least 10% of the participants endorsed across all groups.

Table 11

Meta-Theme	Definition
Characteristic Up (23.08%) Down (36.36%) Control (45.45%)	Refers to a way an individual perceives themselves (like/dislikes, self-esteem, confidence) and their overall personality. -i.e., "Depression makes me view my life differently."
Emotion Up (15.38%) Down (3%) Control (3.03%)	Refers to different moods or emotions, either having these emotions or not having these emotions (Subthemes include: Anxiety, appreciation, closed off, empathy, suicide, love, nervous, emotion towards others, sad, miserable, optimistic, stress, guilt, enjoyment, other) -i.e., "I feel loved."
Personal Change Up (41.02%) Down (41.42%) Control (27.27%)	Refers to concrete and identifiable change a person notices in their perspective, outlook or behavior. (Subthemes include: perspective, motivation, self-awareness, knowledge, self-exploration, locus of control, help, and purpose) -i.e., "That I need to work harder than the person next to me just because of my mental illness."
Learning Experience Up (2.56%) Down (6.06%) Control (15.16%)	Refers discussion of learning experiences of depression, or other aspects of life. -i.e., "Depression has taught me that there's a lot in life to look forward to"

Note. This is the display of the percentage of the frequency of the themes endorsed by participants in the upward counterfactual thinking condition, downward counterfactual thinking and control condition for the second meaning making question. These are the themes that at least 10% of the participants endorsed across all groups.

Figure 1

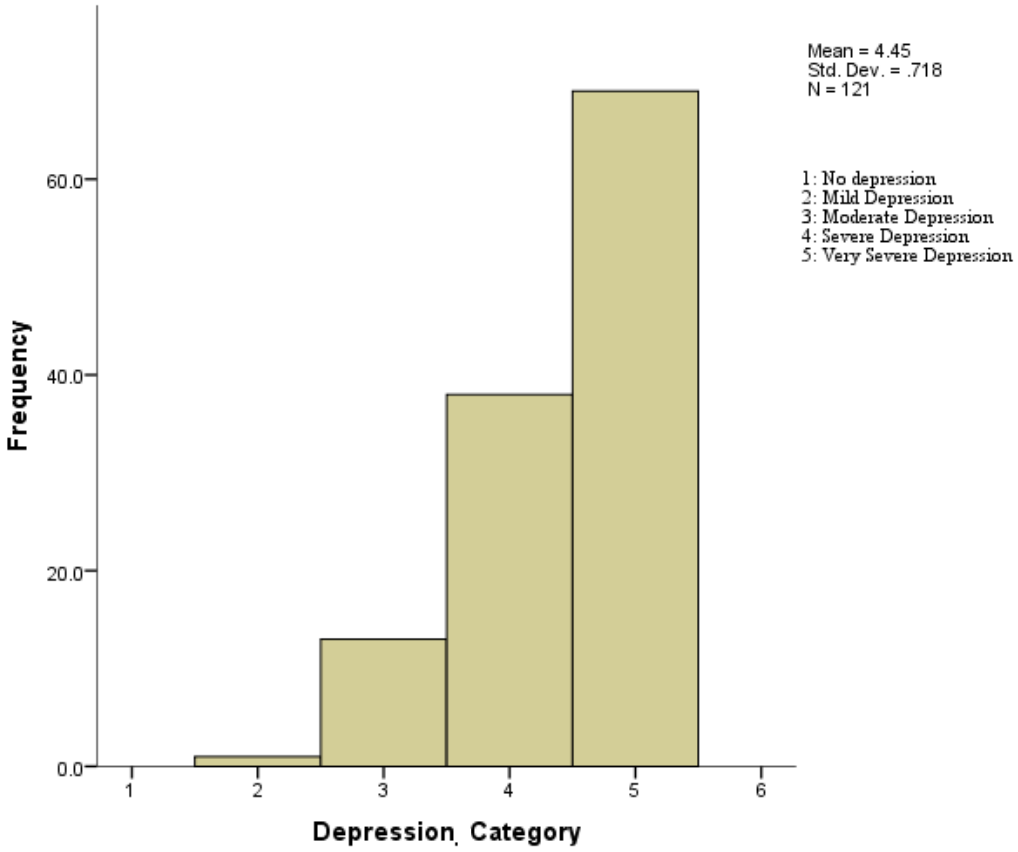

Figure 1. Graphic displaying the distribution of depression scores on the QIDS_SR16

Figure 2

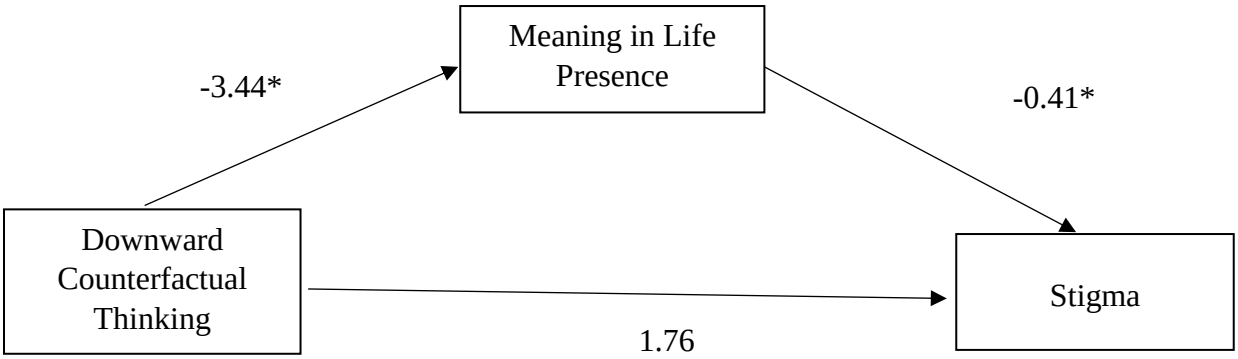

Figure 2. Unstandardized regression coefficients for the relationship between downward counterfactual thinking and stigma as mediated by meaning in life presence.

Appendix A

Quick Symptomology of Depression Scale (QIDS-SR16)

Please indicate which you agree most.

- ❍ I am not particularly discouraged about the future. (1)
- ❍ I feel discouraged about the future. (2)
- ❍ I feel I have nothing to look forward to. (3)
- ❍ I feel the future is hopeless and that things cannot improve. (4)

Please indicate which you agree most.

- ❍ I do not feel like a failure. (1)
- ❍ I feel I have failed more than the average person. (2)
- ❍ As I look back on my life, all I can see is a lot of failures. (3)
- ❍ I feel I am a complete failure as a person. (4)

Please indicate which you agree most.

- ❍ I get as much satisfaction out of things as I used to. (1)
- ❍ I don't enjoy things the way I used to. (2)
- ❍ I don't get real satisfaction out of anything anymore. (3)
- ❍ I am dissatisfied or bored with everything. (4)

Please indicate which you agree most.

- ❍ I don't feel particularly guilty. (1)
- ❍ I feel guilty a good part of the time. (2)
- ❍ I feel quite guilty most of the time. (3)
- ❍ I feel guilty all of the time. (4)

Please indicate which you agree most.

- ❍ I don't feel I am being punished. (1)
- ❍ I feel I may be punished. (2)
- ❍ I expect to be punished. (3)
- ❍ I feel I am being punished. (4)

“WHAT IF I HAD NEVER BEEN DEPRESSED?”

Please indicate which you agree most.

- ❍ I don't feel disappointed in myself. (1)
- ❍ I am disappointed in myself. (2)
- ❍ I am disgusted with myself. (3)
- ❍ I hate myself. (4)

Please indicate which you agree most.

- ❍ I don't feel I am any worse than anybody else. (1)
- ❍ I am critical of myself for my weaknesses or mistakes. (2)
- ❍ I blame myself all the time for my faults. (3)
- ❍ I blame myself for everything bad that happens. (4)

Please indicate which you agree most.

- ❍ I don't have any thoughts of killing myself. (1)
- ❍ I have thoughts of killing myself, but I would not carry them out. (2)
- ❍ I would like to kill myself. (3)
- ❍ I would kill myself if I had the chance. (4)

Please indicate which you agree most.

- ❍ I don't cry any more than usual. (1)
- ❍ I cry more now than I used to. (2)
- ❍ I cry all the time now. (3)
- ❍ I used to be able to cry, but now I can't cry even though I want to. (4)

Please indicate which you agree most.

- ❍ I am no more irritated by things than I ever was. (1)
- ❍ I am slightly more irritated now than usual. (2)
- ❍ I am quite annoyed or irritated a good deal of the time. (3)
- ❍ I feel irritated all the time. (4)

“WHAT IF I HAD NEVER BEEN DEPRESSED?”

Please indicate which you agree most.

- ❍ I have not lost interest in other people. (1)
- ❍ I am less interested in other people than I used to be. (2)
- ❍ I have lost most of my interest in other people. (3)
- ❍ I have lost most of my interest in other people. (4)

Please indicate which you agree most.

- ❍ I make decisions about as well as I ever could. (1)
- ❍ I put off making decisions more than I used to. (2)
- ❍ I have greater difficulty in making decisions more than I used (3)
- ❍ I can't make decisions at all anymore. (4)

Please indicate which you agree most.

- ❍ I don't feel that I look any worse than I used to. (1)
- ❍ I am worried that I am looking old or unattractive. (2)
- ❍ I feel there are permanent changes in my appearance that make me look unattractive. (3)
- ❍ I believe that I look ugly. (4)

Please indicate which you agree most.

- ❍ I can work about as well as before. (1)
- ❍ It takes an extra effort to get started at doing something. (2)
- ❍ I have to push myself very hard to do anything. (3)
- ❍ I can't do any work at all. (4)

Please indicate which you agree most.

- ❍ I can sleep as well as usual. (1)
- ❍ I don't sleep as well as I used to. (2)
- ❍ I wake up 1-2 hours earlier than usual and find it hard to get back to sleep. (3)
- ❍ I wake up several hours earlier than I used to and cannot get back to sleep. (4)

“WHAT IF I HAD NEVER BEEN DEPRESSED?”

Please indicate which you agree most.

- ❍ I don't get more tired than usual. (1)
- ❍ I get tired more easily than I used to. (2)
- ❍ I get tired from doing almost anything. (3)
- ❍ I am too tired to do anything. (4)

Please indicate which you agree most.

- ❍ My appetite is no worse than usual. (1)
- ❍ My appetite is not as good as it used to be. (2)
- ❍ My appetite is much worse now. (3)
- ❍ I have no appetite at all anymore. (4)

Please indicate which you agree most.

- ❍ I haven't lost much weight, if any, lately. (1)
- ❍ I have lost more than five pounds. (2)
- ❍ I have lost more than ten pounds. (3)
- ❍ I have lost more than fifteen pounds. (4)

Please indicate which you agree most.

- ❍ I am no more worried about my health than usual. (1)
- ❍ I am worried about physical problems like aches, pains, upset stomach, or constipation. (2)
- ❍ I am very worried about physical problems, and it's hard to think of much else. (3)
- ❍ I am so worried about my physical problems that I cannot think of anything else. (4)

Appendix B

Depression Stigma Scale

Please answer the following questions using the scale below: 1 (Completely disagree) 2 (Mostly disagree) 3 (Somewhat disagree) 4 (Neither agree or disagree) 5 (Somewhat agree) 6 (Mostly agree) 7(Completely agree)

1. Others view me as unable to take care for myself because I am depressed

1 2 3 4 5 6 7

2. Others view me as unable to handle responsibility because I am depressed

1 2 3 4 5 6 7

3. Others think I am not worth the investment of time and resources because I am depressed

1 2 3 4 5 6 7

4. Others view me as morally weak because I am depressed.

1 2 3 4 5 6 7

5. People have told me that becoming depressed is what I deserve from how I live my life

1 2 3 4 5 6 7

6. People have told me that becoming depressed is what I deserve from how I live my life

1 2 3 4 5 6 7

7. Some people who know I have depression have grown more distant.

1 2 3 4 5 6 7

8. Some people who know I have depression have grown more distant.

1 2 3 4 5 6 7

9. When people learned I was depressed, they looked for flaws in my character

1 2 3 4 5 6 7

Appendix C

Meaning Making Scale

Please take a moment to think about what makes your life and existence feel important and significant to you. Please respond to the following statements as truthfully and accurately as you can, and also please remember that these are very subjective questions and that there are no right or wrong answers. Please answer per the scale below:

Absolutely Untrue	Mostly Untrue	Somewhat Untrue	Can't Say True or False	Somewhat True	Mostly True	Absolutely True
1	2	3	4	5	6	7

_____1. I understand my life’s meaning.

_____2. I am looking for something that makes my life feel meaningful.

_____3. I am always looking to find my life’s purpose.

_____4. My life has a clear sense of purpose.

_____5. I have a good sense of what makes my life meaningful.

_____6. I have discovered a satisfying life purpose.

_____7. I am always searching for something that makes my life feel significant.

_____8. I am seeking a purpose or mission for my life.

_____9. My life has no clear purpose.

_____10. I am searching for meaning in my life.

Scoring: Item 9 is reverse scored.

Items 1, 4, 5, 6, & 9 make up the Presence of Meaning subscale Items 2, 3, 7, 8, & 10 make up the Search for Meaning subscale

Appendix D

Age: _____

Gender: Male Female Nonbinary Other

Education Level:

Some high school, no diploma

High school graduate, diploma or the equivalent (for example GED)

Some college credit, no degree

Trade/technical/vocational training

Associate degree

Bachelor’s degree

Master’s degree

Professional degree

Doctorate degree

Race/ethnicity:

White

Hispanic or Latino

Black or African American

Native American or American Indian

Asian / Pacific Islander

Other

History of Depression Questions

1. Have you or currently experiencing depression? Y/N
2. How severe was your depression previously?
3. How long ago was your last feelings of depression?
4. Have been prescribed medication for depression in the past or are currently taking prescribed medication?
5. Have you ever been hospitalized for depression? Y/N
6. Does depression run in your family? Y/N
7. What is your level of social support currently?

No social support A lot of social support

1 2 3 4 5 6 7

Appendix E

Short Answer Meaning Making Questions

For the next following four questions, please answer each to the best of your ability.

1. How has the experience of depression made you the person you are today?

2. What has depression taught you about yourself?

3. What has depression taught you about others?

4. What has depression taught you about the world?

5. If you have anything else you would like to share about your experience with depression comment below