The Role of Education, Empathy, and Psychological Flexibility in Implicit and Explicit Mental Health Stigma

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The Role of Education, Empathy, and Psychological Flexibility on Implicit and Explicit Mental Health Stigma

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List of Recurring Abbreviations

AARR	Arbitrarily Applicable Relational Responding
AAQ–II	Acceptance and Action Questionnaire – II
BIRRs	Brief and Immediate Relational Responses
CAMI	Community Attitudes Toward Mental Illness
CMHI	Community Mental Health Ideology
EC	Empathic Concern Subscale of the IRI
EERRS	Extended and Elaborated Relational Responses
FS	Fantasy Subscale Subscale of the IRI
IAT	Implicit Association Task
IRI	Interpersonal Reactivity Index
IRAP	Implicit Relational Association Procedure
MCSDS	Marlow–Crowne Social Desirability Scale
PD	Personal Distress Subscale of the IRI
PT	Perspective Taking Subscale of the IRI
RFT	Relational Frame Theory
SDS	Social Distance Scale
SDS_{dx}	Social Distance Scale – Diagnosed Individual
$SDS_{no\ dx}$	Social Distance Scale – Undiagnosed Individual

Chapter 1: Introduction

Negative opinions directed toward individuals with psychological diagnoses are wide-ranging and quite common (Byrne, 1997; Link, Struening, Rahav, Phelan, & Nuttbrock, 1997; Porter, 1998). The majority of the general public tends to view people with psychological diagnoses as unpredictable, aggressive, dangerous, dirty, bad, ignorant and even worthless (Olmsted & Durham, 1976; Phelan, Bromet, & Link, 1998; Phelan, Link, Moore, & Stueve, 1997; Nunnally, 1961). A survey involving 1,737 participants found that people with schizophrenia were viewed by 71.3% as dangerous and by 77.3% as unpredictable (Crisp, Gelder, Rix, Meltzer, & Rowlands, 2000). In this same study, 18.6% believed those with depression should pull themselves together (Crisp et al., 2000). Crisp et al. (2000) further suggest that people with depression will likely be viewed as unpredictable and hard to talk with by half of the people they come in contact with. Additionally, around 18-40% of family members of someone with a severe mental illness believe their relative would be better off dead due to both the struggles faced by their loved one and the stress placed on their own lives as caretakers (Ostman & Kjellin, 2002).

Unfortunately, treatment providers are no less likely to hold unfavorable opinions of those with psychological diagnoses (Ahmedani, 2001; Tsao, Tummala, & Roberts, 2008). A telephone survey found that mental health professionals and the general population did not differ in their attitudes toward the mentally ill, and described them as dangerous and weird (Lauber, Nordt, Braunschweig, & Rössler, 2006). Mental health professionals also report similar levels of social distance (i.e., willingness or unwillingness toward social contact) in response to case descriptions of schizophrenia and major depression (Nordt, Rössler, & Lauber, 2006). Psychiatrists seemed to hold more negative stereotypes of people with

psychological diagnoses than any other group in the study, including the general population (Nordt, et al., 2006). These unfavorable views seem to impact nearly every aspect of the lives of people with a psychological diagnosis, including employment, social interactions, and treatment.

People with psychological diagnoses often face difficulties when attempting to gain employment (Farina & Felner, 1973; Link, 1982). Employers prefer to not hire those with a history of mental illness (Olshansky, Grob, & Malamud, 1958) and admit to being less friendly when discovering the applicant has a history of mental illness (Farina & Felner, 1973). People with a psychiatric diagnosis are 40% less likely to gain employment when compared to those with other types of disabilities (Berthoud, 2006).

In addition to employment discrimination, people with psychological diagnoses report limited access and utilization of health care services (Tsao et al., 2008). The WHO Mental Health Survey Consortium found that in a one year period, around 85% of people diagnosed with a serious mental illness did not seek treatment (Demyttenaere et al., 2004). Less than 30% of people with a psychological diagnosis actually seek treatment at some point in their lives (Regier et al., 1993). Once treatment is prescribed, adherence is partly predicted by the amount of perceived stigma reported prior to beginning treatment such that more perceived stigma results in less treatment adherence (Sirey et al., 2001). Treatment avoidance can have major implications for this population. For example, failure to adhere to antipsychotic medications has been shown to increase rehospitilization rates and exacerbate symptoms (Corrigan, 2004), while early intervention on psychotic symptoms has been found to delay or prevent relapse and increase quality of life (Carpenter, 2009; King et al., 2007).

Finally, people with psychological struggles also suffer in social interactions, often becoming increasingly socially isolated (Harris, Milich, Corbitt, Hoover, & Brady, 1992; Sibicky & Dovidio, 1986). It is common for the general public to avoid close contact with someone who has a psychological diagnosis (Cumming & Cumming, 1957; Norman et al., 2010). The label of "previous hospitalization" has produced high social distance between the labeled person and those who perceive patients with a history of mental illness as dangerous (Link, Cullen, Frank, & Wozniak, 1987). Additionally, when people have been led to believe that their conversational partner was seeking help for psychological problems, they described their partners as more defensive, awkward, insecure, sad, cold, and unsociable than the partners who were simply believed to be psychology students (Sibicky & Dovidio, 1986). The fear of potentially being viewed negatively may cause people seeking psychological services to separate themselves from others, thus increasing the belief that these people are socially awkward (Sibicky & Dovidio, 1986).

Stigma

These negative opinions and behaviors toward people with psychological diagnoses are an example of what is termed stigma. Stigma is the process of treating a person adversely based on the person's possession of an attribute or mark that is against social norms (Crocker, Major, & Steele, 1998; Stafford & Scott, 1986; Susman, 1994). As harmful as it can be, stigma seems to emerge out of a normative process called social categorization (Kurzban & Leary, 2001).

Social categorization is the creation of and identification with a social group or category. While it is an important part of identity development (Tajfel & Turner, 1979), it can also lead to stigma. When people are exposed to a person whom they label differently

than themselves, they often end up drawing overall conclusions about that person based on stereotypes or widely held but often oversimplified ideas linked to this label (Link et al., 1987). When these stereotypic beliefs are negative and the social group is perceived as dangerous, unpredictable, dirty, unusual, or threatening to one's own group, stigma arises (Crocker et al., 1998; Stangor & Crandall, 2000).

The formation of social categories may provide personal benefits such as enhanced self-esteem and social identity through in-group comparison with devalued, lower out-groups (Brewer, 1979; Rubin & Hewstone, 1998; Snyder & Miene, 1994; Stangor & Crandall, 2000). According to Morone (1997), the common stance is that they (i.e., those with psychological diagnoses) menace us and are immoral, lazy, and predatory. By labeling differences, society creates a gap between us and them until they are so different from us that they become dehumanized. They become their labels. They are no longer viewed as people, but as schizophrenics or epileptics (Link & Phelan, 2001). Unfortunately, the understanding of what stigma is and how stigma develops is not matched by our understanding of why stigma develops (Arboleda-Florez, 2002; Stangor & Crandall, 2000).

Erving Goffman (1963) highlights the social context in stigma development, emphasizing the interaction between the person with an attribute that is against social norms and those in a society who perceive this attribute in a negative manner. Building on this contextual view, Link and Phelan (2001) conceptualize stigma as emerging when four interrelated components converge: 1) distinguishing and labeling differences, 2) associating human differences with negative attributes, 3) separating us from them, and 4) status loss and discrimination. While these theories have attempted to describe the process of stigma

development, the research on stigma reduction remains limited by a lack of clarity about the conditions that allow for this process of reduction to unfold.

Stigma Reduction

The three most common interventions for stigma reduction are protest (i.e., asking people to change or suppress their beliefs), education, and contact with stigmatized people. Protest may actually strengthen the stigmatizing belief, resulting in a rebound effect (Corrigan & Penn, 1999). Education and contact seem to promote immediate stigma reduction (Corrigan et al., 2001); however, there is no evidence to show lasting attitude change (Corrigan, 2004). Further, the data on the impact of education on stigma seem to be inconsistent. Although some studies show that receiving education on basic facts about psychological diagnoses in the form of information sessions (e.g., Penn et al., 1994) as well as semester-long courses (Holmes, Corrigan, Williams, Canar, & Kibiak, 1999) decreases mental health stigma, other studies show that education has no effect (e.g., Thornton & Wahl, 1996). This suggests that additional variables may be moderating the relationship between education and stigma (Masuda et al., 2007).

Less common, but promising, approaches focus on increasing empathy and perspective taking through experiential work. For example, Batson et al. (1997) found that asking participants to practice empathy towards a stigmatized person improved attitudes toward the stigmatized group, even 1-2 weeks later. Webster (2010) demonstrated that teaching nurses to take the perspective of their psychiatric patients through a creative reflective experience resulted in reduced stigma and promoted the development of the nurse-client relationship. Similarly, Mann, and Himelein (2008) found that emphasizing the humanization of people with psychological difficulties to increase empathy amongst

psychopathology resulted in reduced stigma when compared to the traditional education methods.

Masuda, Price, Anderson, Schmertz, and Calamaras (2009) suggest that psychological flexibility may be a key process in how empathy and perspective taking result in reductions in stigma. Psychological flexibility involves attention to ongoing thoughts and feelings, openness toward discomfort, perspective-taking, and purposeful action. Increasing the psychological flexibility of substance abuse counselors significantly decreased their stigmatizing attitudes toward their clients, and with greater impact than an educational control (Hayes et al., 2004).

In the context of stigma, psychological inflexibility involves a lack of awareness of stigmatizing reactions, poor perspective taking, and inaction and avoidance in the face of stigmatizing reactions. While education has significant benefits in reducing stigma for those that are psychologically flexible, it does not seem to have any impact on stigma when individuals are inflexible (Masuda et al., 2007). This may explain inconsistent results of education for stigma reduction (Masuda et al., 2007). Indeed, directly addressing flexibility (i.e., targeting acceptance, perspective taking, and empathy) seems to reduce mental health stigma for at least a month amongst even the most inflexible (Masuda et al., 2007). Together, these studies suggest that education that increases empathy and psychological flexibility may result in greater and more consistent stigma reduction.

Continued scientific progress in this area will require a theory that clarifies the unique conditions that give rise to stigma and allow for the manipulation of those conditions for stigma reduction. Relational Frame Theory offers one explanation for the development and

maintenance of stigma as well as the role of psychological flexibility in stigma development and reduction.

Relational Frame Theory

Relational Frame Theory (RFT; Hayes, Barnes-Holmes, & Roche, 2001) is a modern behavioral theory of language and cognition. The central view of RFT is that human cognition is based in arbitrarily applicable relational responding (AARR). Relational responding involves responding to one stimulus based on how it relates to another stimulus (e.g., selecting the shapes that are the same, tapping the biggest button or pressing a lever when a tone gets louder). AARR occurs when humans relate events, not solely on the physical properties such as color or shape, but on socially constructed properties of the context (Hayes, 2004). The context controlling AARR includes elements of the immediate environment along with a person's learning history (Fletcher & Hayes, 2005). RFT proposes that AARR is reinforced with such frequency in such varied conditions that it emerges as a generalized operant (Hayes et al., 2001). In other words, humans learn to relate events arbitrarily, and once this skill is learned, it can be (and is) applied across any context.

Further, humans are able to derive relations, or relate events without those specific relations being trained (i.e., without a history of reinforcement for relating those particular events). For example, if a person knows that John runs as fast as Bob, he derives that Bob runs as fast as John. Mutual entailment refers to this bidirectionality of derived relations. If the same person is then told that Bob runs as fast as Adam, he not only derives that Adam runs as fast as Bob (which is mutually entailed), but derives that Adam also runs as fast as John. This is referred to as combinatorial entailment. Without ever seeing Adam run or being specifically told that Adam and John run at the same speed, the person can relate Adam and

John based on their respective relations with Bob in the context of running. Thus, people use what they already know (i.e. John runs as fast as Bob) along with clues available in the situation (i.e. being told that Bob runs as fast as Adam) to fill in the blanks and create this new, untrained relation (i.e. Adam also runs as fast as John; Barnes-Holmes, Barnes-Holmes, Smeets, Cullinan, & Leader, 2004; Hayes et al., 2001). Transformation of stimulus function refers to a change in the way a stimulus influences one's behavior as a result of relational responding. For instance, if a child is afraid of the doctor and his mother one day tells him that the dentist is like a doctor for teeth, without ever being exposed to a dentist the boy has transferred the aversive qualities of doctor to dentist. Because virtually everything we think is connected in a large network, it is easy for an aversive stimulus to be related to something that was once pleasant, causing its function to change (Barnes-Holmes et al., 2004).

Mutual entailment, combinatorial entailment, and transformation of stimulus functions are exhibited, not only when people relate events as the same (equivalence), but when any relations emerge. RFT describes different ways to categorize these particular patterns of relating including (but not limited to): sameness (nice is the same as pleasant), distinction (bad is different than good), opposition (dark is the opposite of light), comparison (the house costs more than the car), hierarchy (a dog is a type of animal), causal (the pepper causes the sneezing) or perspective taking (I am here, you are there; Barnes-Holmes et al., 2004; Hayes et al., 2001). According to RFT, AARR (and its properties of mutual entailment, combinatorial entailment, and transformation of stimulus functions) defines language and cognition and explains how they are learned.

RFT and Flexibility

One way that AARR influences a broad range of behavior is through rules – a set of relations specifying a behavior and its consequences (Hayes, 1989). For example, one may create a rule of not touching a hot stove based on the relation of hot things causing pain. This type of rule is helpful and likely prevents one from interacting with danger. Rules, however, can be misleading and cause psychological suffering. For example, a woman may starve herself to abide by the rule that being beautiful is the opposite of being fat. Behaviors controlled by rules are less sensitive to change in direct contingencies (i.e., antecedents and consequences that affect behavior). Because the direct contingencies are not necessary to maintain the behavior, they also do not help to control it (Hayes et al., 2001; Catania, Matthews, & Shimoff, 1982). It is not necessarily the content of the rule that is harmful, but how these rules produce inflexible, rigid behaviors.

When rule following becomes rigid, verbal networks rather than the direct context guide a person's behavior. When this occurs, a person may behave in ways that are inconsistent with how someone would typically behave based on information from the direct environment (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). For example, Sam follows the rule that people with psychological diagnoses are dirty. If Sam walks into a room and sees a woman he is attracted to, he will likely look at her, approach her, and speak to her. However, if Sam is then led to believe she has a psychological diagnosis, the probability of approaching her may decrease sharply. Instead, he may experience disgust, keep his distance, avoid eye contact, and make an excuse to leave if she approaches him. Even if there are no obvious signs indicating that she is unclean, and despite the attractive functions she originally had, Sam will likely behave according to his rule about people with psychological diagnoses.

Through increasing psychological flexibility, the functions of rigid or undesirable rule following can be altered, paving way for the person to live more consistently with their chosen values of, perhaps, treating all people with kindness (Hayes et al., 2006).

RFT and Social Categorization

RFT also offers an explanation for how the functions of a socially unusual or unaccepted characteristic can be transferred to the human who possesses this characteristic. When transfer occurs, it allows this human to be treated as this characteristic itself. For example, when an arbitrary, neutral stimulus (e.g., two vertical lines) is related to a socially relevant stimulus (e.g., the word obese), the functions of the arbitrary stimulus transform and acquire the same functions as the word obese (Weinstein, Wilson, Drake, & Kellum, 2008). This provides an understanding of how an unfamiliar person (neutral stimulus) can thus take on the stereotyped, negative functions of a psychological diagnosis or label (socially relevant stimulus) and be treated unfavorably. Once a person is related to specific negative attributes, the person takes on the stimulus functions of these attributes (Masuda et al., 2009).

Even without ever coming in contact with someone from a particular group, people can develop rules that govern behavior toward that group, which is a primary contributor to discrimination and stigmatizing beliefs (Hayes et al., 2001). For example, through AARR people may come to relate those with psychological diagnoses to those who are dangerous, resulting in the transformation of functions of people with psychological diagnoses to include discomfort, fear and avoidance. Further, an us-them dichotomy emerges through self-evaluation as someone extracts the belief "I am not a dangerous person," creating an opposite relation between I and people with psychological diagnoses. If a person then tries to suppress or alter the thought that "I am the opposite of people with psychological diagnoses," a bi-

directional relation between the verbal events I and people with psychological diagnoses will form. Each time this person has the thought "I must not think of people with psychological diagnoses as opposite of me," Dixon, Dymond, Rehfeldt, Roche, and Zlomke (2003) propose that the two events will acquire the functions of each other, actually strengthening the relation of opposition between I and people with psychological diagnoses.

Research from an RFT perspective has shown that what may be more effective at reducing stigma is to decrease the psychological importance of social categorization, thus diluting the functions of some verbal relations, and allowing for new relations to be formed. For example, flexibility-inducing interventions encouraging people to "just notice" their thoughts and to let them pass without judgments or evaluations can help eliminate the probability of unwanted transformation of functions (Dixon et al., 2003).

RFT further suggests a distinction between thoughts based on how quickly they come up. When a person is exposed to a stimulus, a brief and immediate relational response (BIRR) occurs, and is likely determined by one's verbal and nonverbal learning history (Barnes-Holmes, Barnes-Holmes, Stewart, & Boles, 2010). As time passes, additional relational responses occur that can be directly related to the stimulus or related to the initial response (Hughes, Barnes-Holmes, & Vahey, 2012). These are referred to as extended and elaborated relational responses (EERRs). More simply stated, BIRRs tend to occur in the first few seconds of being exposed to a stimulus, whereas EERRs are what occur after longer periods of time have passed since exposure to the stimulus (Hughes et al., 2012). This distinction may have significant implications for assessment of stigma.

Assessing Stigma

Despite the implications of rule-governed behaviors and the significant impacts of stigma, the best way to assess for these processes is not always clear. Over the past few decades, many measurement scales have been developed in the attempt to find the most appropriate methods to understand stigmatizing beliefs and the inflexibility with which people hold them (Link, Yang, Phelan, & Collins, 2004). These measures typically fall into two categories: explicit, self-report methods and implicit methods.

Explicit measures. Explicit cognitions are defined as controlled and intentional responses that are made with awareness and that use cognitive resources (Nosek, 2007). The most common type of explicit measure of stigma is conducted by a self-report questionnaire or survey. These measures attempt to assess commonly held attitudes about psychological diagnoses. Attitudes assessed typically include: 1) authoritarianism, (i.e., the belief that those with psychological diagnoses require coercive handling), 2) benevolence (i.e., kindness and sympathy toward those with psychological diagnoses), 3) mental hygiene ideology (i.e., viewing psychological diagnoses as similar to any other medical diagnosis, 4) social restrictiveness (i.e., viewing those with psychological diagnoses as a threat to society), and 5) interpersonal etiology (i.e., the belief that psychological diagnoses stem from interpersonal stress) (Cohen & Struening, 1962; Link et al., 2004; Taylor & Dear, 1982).

Other explicit measures of stigma include the use of clinical vignettes and social distance measures. Vignettes given to participants are typically written to purposely elicit a positive or negative reaction. For example, a vignette may read, “Steve has been drinking heavily for 5 years. He is now going for treatment and has started attending Alcoholics Anonymous meetings.” Social distance measures aim to evaluate a person’s willingness to be

near or interact with someone from the stigmatized group (Link et al., 2004). After reading a vignette, participants answer questions like, “How would you feel about renting a room in your home to someone like the individual in the story?” or “How would you feel about someone like the individual in the story caring for your children for a few hours?” (Link, Cullen, Frank, & Wozniak, 1987). While explicit methods of assessing stigma have yielded a large body of knowledge, they all share a common limitation: the social desirability bias (Levy 1981; Peltier &Walsh 1990; Robinette 1991; Simon & Simon 1974; Zerbe & Paulhus 1987).

There is a tendency in humans to desire being represented and perceived in the best way possible (Fisher, 1993). This need to be socially acceptable often interferes with the accuracy of self-reported answers by increasing the measurement error (Cote & Buckley, 1988) and attenuating, inflating, or moderating variable relationships (Zerbe & Paulhus, 1987). Self-report data collected from questionnaire, vignettes, and social distance measures may therefore underestimate stigma and are more likely to be measuring participants’ thoughts on what is socially acceptable (Fisher, 1993; Link et al., 2004). According to researchers, the social desirability bias can lead to misleading findings (Fisher, 1993) and in turn, unwarranted conclusions (Peltier & Walsh, 1990).

The social desirability bias can be addressed by assessing social desirability directly. One way of doing this is by administering the Marlowe-Crowne Social Desirability Scale (MCSDS; Crowne & Marlowe, 1960, 1964). The MCSDS consists of items attempting to measure how likely participants are to respond in a socially acceptable way on self-report measures. By including this scale, researchers can gauge how accurate the responses are on other self-report measures included in their experiment and present conclusions accordingly.

Additionally, researchers can introduce certain procedures like guaranteeing confidentiality (Baumeister, 1982) and using indirect questioning (Fisher, 1993) to allow participants to feel less judged and more comfortable being honest. Even with attempting to correct for the social desirability bias, results from commonly used self-report methods can still be inaccurate (Nederhof, 1985). In response, implicit methods of measuring attitude and biases have been developed.

Implicit measures. Implicit cognitions can be defined as knowledge, thoughts or feelings that in some way influence a person's behavior even if this person is unwilling to admit or is not consciously aware that he possesses this knowledge, thought or feeling (Greenwald & Banaji, 1995; Underwood, 1996). Implicit cognitions can be described as automatic and often conflict with more delayed, controlled cognitions or behaviors. These initial reactions, while differing from more controlled ones, have been shown to more accurately predict future behaviors (Perugini, Richetin, & Zogmaister, 2010).

Even when participants are motivated to be honest, it is difficult for them to self-report implicit, automatic cognitions (Nisbett & Wilson, 1977; Wilson, 2009). Researchers have become increasingly interested in understanding and measuring implicit cognitions. Implicit measures, such as the sequential priming task (Fazio, Jackson, Dunton, & Williams, 1995), the Extrinsic Affective Simon Task (EAST; De Houwer, 2003), the Go/No Go Task (GNAT; Nosek & Banaji, 2001), and the Implicit Association Task (IAT; Greenwald, McGhee, & Schwartz, 1998) aim to assess particular cognitions without participants reporting subjectively on this cognition (Brunel, Tietje, & Greenwald, 2004; Gawronski & De Houwer, 2011) or that participants may not consciously know they hold (Asendorpf, Banse, & Mücke, 2002).

These measures are generally all latency-based. In general, positive and negative stimuli are presented and participants are required to categorize stimuli in two ways: in a consistent (e.g., pairing the words flower with good and insect with bad) way and in an inconsistent (e.g., pairing the words flower with bad and insect with good) way. Each response is required to be made in a short amount of time. The assumption of these measures is that response latencies should be smaller when the association among paired stimuli is stronger in one's memory and larger when the association among paired stimuli is weaker in one's memory (De Houwer, 2003; Greenwald et al., 1998).

The IAT, one of the most popular implicit measures, has been shown to detect biases among participants that explicit measures did not find in regards to racial biases (Baron & Banaji, 2006), obesity (Teachman, Gapinski, Brownell, Rawlins, & Jeyaram, 2003), and mental illness (Teachman, Wilson, & Komarovskaya, 2006). Teachman and colleagues were the first researchers to use an implicit measure in a study involving mental health stigma. Their results showed that 58-78% of participants associated terms such as bad, blameworthy, and helpless with psychological diagnoses. Additionally, the IAT has been used to accurately predict participants' behavior towards a target group. Scores from the IAT regarding participants' anti-black biases successfully predicted how they later interacted with black versus white individuals (McConnell & Leibold, 2001; also see Greenwald & Farnham, 2000; Jordan, Spencer, & Zanna, 2002).

While the IAT and other implicit measures have yielded incredibly useful research, these methods also have limitations. The most common criticism of the IAT is that results from this test are relative (De Houwer, 2002). For example, if an IAT effect is found for the term slim over the term obese, this only means that relative to the term obese, this participant

prefers the word slim. This result does not necessarily mean that this participant has a negative attitude toward obese individuals. It could be the case that the participant has a neutral attitude toward obese individuals and favorable view of slim individuals or that the participant has a neutral view of slim individuals and negative view of obese individuals. The IAT cannot separate or determine the direction of the biases measured (Roddy, Stewart, & Barnes-Holmes, 2010).

The Implicit Relational Assessment Procedure

The Implicit Relational Assessment Procedure (IRAP, Barnes-Holmes et al., 2006) builds on the IAT, using RFT principles to assess implicit cognitions in terms of specific forms of AARR, rather than in terms of mental associations. The basic procedure involves asking participants to quickly respond to presented stimuli in opposite ways. In an IRAP trial, a label stimulus (e.g., pleasant) is presented with a target stimulus (e.g., love). The participant has two response options available on the screen that specify particular relations between the stimuli (e.g., similar and opposite). Different responses are reinforced during different trial blocks. Sometimes responses consistent with a participant's BIRR are reinforced, while at other times a participant is required to respond opposite of their BIRR. For example, during one trial block, the response of choosing similar given pleasant and love clears the screen and allows the participant to proceed to the next trial. If this response is not emitted, a red X appears on the screen. Participants must respond in the appropriate manner for the current trial to remove the X and proceed to the next screen. The same process occurs for the next block, however, differing responses (e.g., choosing opposite given pleasant and love) now allow participants to proceed in the program while any other response yields the red X (Barnes-Holmes et al., 2010).

The assumption is that participants will respond faster on trials requiring responses consistent with their BIRRs and slower on trials requiring responses inconsistent with their BIRRs. The difference in response times between trials consistent with a person's BIRR and trials inconsistent with a person's BIRR is called the IRAP effect, or the D_{IRAP} score. Latencies are interpreted as reflecting the degree of elaboration required to answer correctly. (Barnes-Holmes et al., 2010; Power, Barnes-Holmes, Barnes-Holmes & Stewart, 2009). By including relational terms the IRAP can assess not only if there are relations, but also which relations (e.g., similar or opposite) among presented stimuli are stronger (Barnes-Holmes et al., 2010). This is something that as previously discussed, other implicit measures such as the IAT cannot do.

Some (e.g., Drake & Wilson, 2007; Kellum et al., 2013) have also discussed the IRAP as being a measure of flexibility. If there is no difference in the latencies between opposing response types (i.e., the D_{IRAP} score is low), then the participant is able to move easily between different sets of contingencies that govern the trials. In other words, the participant has increased flexibility with relating the IRAP stimuli in various ways. Thus the IRAP can be used as not only a measure of strength and direction of a stigmatizing belief, but also how flexible or inflexible that belief is.

An IRAP effect has been demonstrated in several studies on a variety of topics such as work and leisure (Chan, Barnes-Holmes, Barnes-Holmes, & Stewart, 2009), implicit self-esteem (Vahey, Barnes-Holmes, Barnes-Holmes, & Stewart, 2009), body size bias (Roddy, Stewart, & Barnes-Holmes, 2010), and implicit ageism (Cullen, Barnes-Holmes, Barnes-Holmes, & Stewart, 2009). More closely related with stigma, the IRAP has been used to measure racial stereotyping (Barnes-Holmes, Murphy, Barnes-Holmes, & Stewart, 2010),

showing that in general, participants responded true more quickly than false to the White-Safe and Black-Dangerous trials, but did not show this pattern of responding on trials with the opposite configurations. IRAP results are also largely inconsistent with results on explicit measures administered, likely due to the IRAP scores not being as susceptible to the sensitive social context in which the IRAP is administered (Barnes-Holmes et al., 2010). While this inconsistency in results from implicit versus explicit measures may be seen as a weakness, research has shown that information collected via implicit measures can be better predictors of future behavior than what people self-report (McConnell & Leibold, 2001).

Summary

Mental health stigma, while common, leads to harmful consequences. There is some evidence to show that education reduces stigma. However, there are inconsistencies in the literature regarding education and stigma reduction. When an effect is found, the reduction is short term and only observed in those who are relatively open and flexible with their beliefs. Emerging research suggests that empathy and psychological flexibility may be key processes in stigma reduction. The continued development of stigma reduction interventions, however, has been limited by problems with current assessment methods. Additionally, both assessment and intervention methods have been constrained by the lack of a complete and coherent theory that describes processes by which stigma emerges and dissipates. RFT proposes AARR as central to the emergence of stigma, providing a framework for understanding the development, maintenance, and reduction of stigma. Applications of RFT have resulted in the development of the IRAP, a tool that can be applied for assessment of not only the presence of stigmatizing attitudes, but also the flexibility with which they are held. To date, the IRAP has only been used to assess mental health stigma in one study,

which assessed implicit attitudes toward individuals with autism (Kelly & Barnes-Holmes, 2013). Also, implicit measures of stigma have not been examined in the context of different degrees and types of education or different levels of psychological flexibility.

The Current Study

The current study examined the impact of divergent educational experiences on mental health stigma using college students with various levels of formal education relevant to psychological difficulties. This study examined the impact of amount (number of credit hours) and approach to education (on didactic – experiential continuum) on mental health stigma. Mental health stigma was assessed both in terms of self-reported beliefs, social distance (explicit stigma) and AARR in response to a person with and without a psychological diagnosis (implicit stigma). Empathy and psychological flexibility were examined as moderators of the relationship between education and stigma. It was hypothesized that:

Hypothesis 1: Amount of education will predict reduced levels of stigma such that increases in amount of education will predict decreases in stigma on all three measures of stigma. In other words, there will be a negative relationship between amount of education and stigma.

Hypothesis 2: Approach to education will predict reduced levels of stigma such that increases in experiential nature of education will predict decreases in stigma on all three measures of stigma. In other words, there will be a negative relationship between experiential education and stigma.

Hypothesis 3: The relationship between amount of education and stigma will be moderated by approach to education. In other words, increases in experiential training will predict increases in the education – stigma relationship for all three measures of stigma.

Hypothesis 4: Psychological inflexibility will predict increased mental health stigma such that increases in psychological inflexibility will predict increases in stigma on all three measures. In other words, there will be a positive relationship between psychological inflexibility and stigma.

Hypothesis 5: The relationships between education (amount and type) and stigma will be moderated by psychological flexibility. In other words, increases in flexibility will predict increases in the education – stigma relationship for all three measures of stigma.

Hypothesis 6: Consistent with previous research, self-reported mental health stigma and stigma as assessed by the IRAP will have little relationship.

Hypothesis 7: When there is a relationship between self-reported mental health stigma and stigma assessed by the IRAP, the relationship will be moderated by psychological flexibility. In other words, as psychological flexibility increases, the relationship between self-report scores and D_{IRAP} scores will increase.

Hypothesis 8: Empathy will predict reduced mental health stigma. In other words, there will be a negative relationship between empathy and on all three measures of stigma. Interactions between empathy and other independent variables will be examined in an exploratory fashion.

Chapter 2: Method

Participants

A total of 95 undergraduates and 18 graduate students at the University of Louisiana at Lafayette were recruited for participation. Participants reported various majors (psychology vs. non-psychology) and class status (freshman, sophomore, junior, senior, graduate). First year students, regardless of major, were recruited through the psychology department subject pool. Advanced students as well as graduate students were offered participation in exchange for course credit. Participants had a mean age of 21.1 years (SD = 4.13). The majority of participants were female (85.8%) and Caucasian (68.1% Caucasian, 21.2% African American, 6.2% Asian, 2.7% Hispanic and 1.8% other).

Vignettes

Vignettes were written specifically for this study to depict two people with similar psychological struggles, differing slightly only in their responses to these struggles (see Appendices F-I). One vignette described a person who sees a therapist and received a diagnosis while the other vignette describes a person who attempts to cope on his or her own. The two vignettes were given to each participant to read in order to answer additional self-report items based on the characters. The names of the characters in each vignette were gender-matched for participant gender and used as the category labels for the IRAP. These names were taken from the Social Security Administration's Top 10 Baby Names list from the decade 1990, the average decade that participants were likely to have been born. Names and symptoms were randomized across the therapy and non-therapy vignettes.

Measures

Demographic and Education Questionnaire. The Demographic and Education Questionnaire (see Appendix A) was designed for this study to assess self-report data on age, gender, ethnicity, degree program, academic status, the amount of completed coursework relevant to psychological difficulties along with ratings of this coursework on a continuum from all-didactic to all-experiential. Of 113 participants, only 39 had actually taken any of the classes in question, and so these were the only participants who were able to rate courses on the didactic-experiential continuum. The other 74 participants were removed from analyses including this variable.

Acceptance and Action Questionnaire–II (AAQ–II). The AAQ–II (Bond et al., 2011; see Appendix B) is a seven item questionnaire designed to measure overall psychological flexibility, which involves both the ability to accept difficult thoughts and feelings and to engage in valued activity in their presence. The AAQ–II is an improved version of the earlier AAQ (Hayes et al., 2004). Higher scores are indicative of greater psychological inflexibility. The AAQ–II is highly correlated with earlier versions of the measure and scores on the AAQ–II have been shown to have good reliability and construct validity (Bond et al., 2011). For this sample, Cronbach's alpha was .90, indicating excellent internal consistency.

Marlowe-Crowne Social Desirability Scale (MCSDS). The MCSDS (see Appendix C; Crowne & Marlowe, 1960, 1964) is a 33-item scale consisting of statements that are either socially desirable but untrue of almost everyone such as "No matter who I'm talking to, I'm always a good listener," or socially undesirable but true of nearly everybody such as "I sometimes feel resentful when I don't get my why." Respondents are required to circle

whether each statement is true or false as it pertains to them personally. Scores on the MCSDS assess the need for respondents to respond in culturally acceptable ways. Higher scores indicate high conformity and a high desire for social approval. The scale has an internal consistency of .88 and a test-retest correlation of .89 (Crowne & Marlowe, 1960). For this sample, Cronbach's alpha was .81, indicating excellent internal consistency.

Community Attitudes toward Mental Illness (CAMI). The CAMI (see Appendix D; Taylor & Dear, 1981) is a 40 item self-report questionnaire designed to assess participants' attitudes toward people with a mental illness. It is rated in terms of participants' agreement with the items on a 5-point Likert scale, rated from 1 (strongly disagree) to 5 (strongly agree). The CAMI consists of four subscales representing various dimensions of mental health attitudes: Authoritarianism, Benevolence, Social Restrictiveness and Community Mental Health Ideology (CMHI). Higher scores on the Benevolence (kindness and sympathy toward those with psychological diagnoses) and CMHI (recognizing the therapeutic value of the community and acceptance of de-institutionalized care) subscales indicate a more favorable attitude toward individuals with psychological struggles while higher scores on Authoritarianism (the view that those with psychological diagnoses require coercive handling) and Social Restrictiveness (the view that those with psychological diagnoses are a threat to society) subscales indicate a more negative attitude toward this population. Reliability ranges from alpha 0.68 to 0.88 on the subscales, and the CAMI has demonstrated sound construct validity (Taylor & Dear, 1981). For this sample, Cronbach's alphas ranged from .50 to .70, indicating adequate internal consistency for all subscales except Social Restrictiveness.

Interpersonal Reactivity Index (IRI). The IRI (see Appendix E; Davis, 1983) is a 28 item, self-report, multidimensional approach to measuring the global concept of empathy. It consists of the following four subscales: perspective taking (PT), Fantasy (FS), Empathetic Concern (EC), and Personal Distress (PD), each of which are thought to be an aspect of the larger concept empathy. Higher scores on the fantasy subscale, perspective taking subscale and empathic concern subscale indicate higher empathy levels. Higher scores on the personal distress subscale indicate higher levels of anxiety and distress when others are in distress, which can interfere with empathy. Each of the four subscales is correlated with scores on previous unidimensional measures of empathy as well as with each other (Davis, 1983). Additionally, the scale has excellent psychometric properties (Davis, 1983). For this sample, Cronbach's alphas ranged from .60 to .85, indicating adequate internal consistency.

Social Distance Scale. The SDS was designed for this study to assess social distance regarding the two people depicted in the vignettes (see Appendices J-M). General questions used (e.g., How would you feel having someone like Michael as a neighbor?) were adapted from those found in the original social distance scale (Bogardus, 1933). Additional questions that are geared toward the college population (e.g., How willing would you be to study with Ashley outside of class?) were developed among investigators and included in the scale as well. Participants responded on a 5-point scale, from -2 (strongly oppose) to +2 (strongly favor), such that higher scores indicated more of a willingness to interact and be near the individual depicted in the vignette. Within this sample, Cronbach's alpha for $SDS_{no\ dx}$ was .89 and for SDS_{dx} was .94, indicating excellent internal consistency.

Implicit Relational Assessment Procedure – Mental Health Stigma Version (IRAP–MHS). The mental health stigma IRAP was used to measure implicit attitudes

towards diagnosed and undiagnosed individuals. The IRAP task consisted of a minimum of two practice blocks. For participants to continue to the test blocks, they had to achieve 80% accuracy with a median response time of less than 2,000 ms on the practice blocks (Barnes-Holmes et al., 2006). If participants met these criteria on the first two practice blocks, they were allowed to proceed to the test blocks. If participants did not meet these criteria on the first two practice blocks, they were invited to try again on another two practice blocks. Twenty participants failed to achieve these criteria after all four attempts and were thanked, debriefed, and their IRAP data discarded. In these cases, participants' questionnaire data were still analyzed.

For each test trial, one of the two category labels (e.g., "Ashley" or "Sarah") appeared at the top of the screen. The twelve target stimuli consisted of six positive adjectives (e.g., predictable, gentle, harmless, strong, good and aware) and six negative adjectives (e.g., unpredictable, aggressive, dangerous, weak, bad and ignorant). Each trial involved one of these adjectives appearing just under the category. The two response options were "is" and "is not". These were located near each corner along the bottom of the screen. Participants were required to choose one of these options on each trial by pressing the "d" key (for is) or "k" key (for is not). When participants chose correctly according to the current trial type, all four stimuli were cleared from the screen for 400 ms before the next trial was presented. When answers were incorrect for a given block, a red "X" appeared in the middle of the screen until the participants gave a correct response (Barnes-Holmes et al., 2006).

The various combinations of category labels with positive and negative adjectives create four possible trial types. A-type trials displayed the category label of the undiagnosed individual from the vignette and any of the six consistent target stimuli (i.e. predictable,

gentle, harmless, strong, good or aware). B-type trials presented the same category label as A-type trials, only the target stimuli in these trial types were inconsistent with what was assumed to be associated with an undiagnosed individual (i.e., unpredictable, aggressive, dangerous, weak, bad or ignorant). The category label presented in C-type trials was the name of the diagnosed individual from the vignettes, along with any of the target stimuli assumed to be consistent with a diagnosed individual (i.e., unpredictable, aggressive, dangerous, weak, bad or ignorant). Finally, D-type trials consisted of the same category label as C-type trials, while target stimuli assumed to be inconsistent with this category term were displayed (i.e., predictable, gentle, harmless, strong, good or aware).

Procedure

Upon arrival, participants were greeted and provided with a copy of the informed consent form. Investigators reviewed this form with participants, emphasizing the voluntary nature of participation, cost and benefits, and the right to withdraw without penalty. Participants were given an opportunity to review the form independently and ask questions. Those volunteering to participate then provided written consent.

Participants volunteering to participate completed the Demographics and Education Questionnaire, AAQ–II, MCSDS, CAMI, and IRI, all in paper form. After the completion of these measures, participants read one of two vignettes. Names and symptoms in the vignettes were randomized (diagnosed status vs. non-diagnosed status) in an alternating fashion in order to control for possible confounds. Once participants read the vignette, they completed the Social Distance Scale specific to the first vignette. Next, the participants read the second vignette and completed the Social Distance Scale specific to second vignette. After all self-report measures were completed the participants began the mental health stigma IRAP. Upon

completion, participants received a debriefing form and the investigator briefly reviewed the implications of the study as well as references for obtaining more information and a referral to on-campus counseling. The participants were then thanked and dismissed.

Chapter 3: Results

Data Analysis Strategy

First, scores for all self-report measures were calculated using the published instructions for the measures and D_{IRAP} scores were calculated for the overall IRAP using the difference in response latency data according to the D_{IRAP} algorithm (Barnes-Holmes et al., 2010). Data analysis consisted of two phases. First, distributions of scores for all independent and dependent variables were examined in terms of central tendency and variability. Correlational analyses were performed to examine relationships amongst stigma (implicit and explicit), education, empathy and flexibility and to identify potential covariates to control for in later analyses. Means, standard deviations, and intercorrelations for all variables can be found in Table P1. Second, a series of multiple regression analyses were conducted predicting stigma from amount of education, approach to education, empathy and psychological flexibility.

Descriptive Statistics

Explicit stigma. Stigma was measured explicitly by two self-report measures: The Community Attitudes toward Mental Illness (CAMI) and the Social Distance Scales (SDS). The CAMI, consisting of four subscales, was scored by reverse scoring responses to reversed items and calculating the mean of responses to items in each subscale. Subscale scores can range from 1 to 5. Within this sample, scores on the Authoritarianism subscale ranged from 1.2 to 3.4 with a mean of 2.31. Benevolence subscale scores ranged from 2.9 to 4.9 with a mean of 3.82. Scores on the CMHI subscale ranged from 2.4 to 4.3 with a mean of 3.35. Finally, scores on the Social Restrictiveness subscale ranged from 1.4 to 3.5 with a mean of 2.32. Additionally, consistent with previous research (Hayes et al., 2004; Masuda et al.,

2007), an overall score was calculated by subtracting Benevolence and CMHI raw score totals from Authoritarianism and Social Restrictiveness raw score totals. Scores can range from -80 to 80, with higher scores indicating a more negative attitude toward individuals with psychological struggles. This distribution ranged from -54 to 10 with a mean of -25.41, showing that on average, participants held slightly favorable attitudes toward those with psychological diagnoses (see Table P1). Compared to Masuda et al.'s (2007) mean of -27.21, this population on average showed slightly more stigma toward individuals with psychological diagnoses.

The Social Distance Scales for each individual in the vignettes were scored by summing responses to each of the 10 questions. Scores can range from -20 to 20. Higher scores indicated a higher willingness to be near someone with psychological struggles. Scores on the SDS for the individual for the individual with no diagnosis (SDSno dx) ranged from -7 to 20 with a mean of 7.31. Scores on the SDS for the diagnosed individual (SDSdx) ranged from -20 to 20 with a mean of -.45 (see Table P1). Overall, participants were less willing to be near the diagnosed individual than the undiagnosed individual, $t(112) = -11.48$, $p < .0001$.

Implicit stigma. Stigma was measured implicitly by the IRAP. In order to calculate an overall D_{IRAP} score, four overall trial-type scores must be calculated first. The four overall trial-type scores are calculated by subtracting mean latencies on trials requiring stigma-consistent responding (e.g., A and C-type trials) from mean latencies on trials requiring stigma-inconsistent responding (e.g., B and D-type trials), dividing these by their corresponding standard deviations, and averaging the scores from each trial type over the three test blocks. After these calculations are complete, the overall D_{IRAP} score is calculated

as the mean of the four trial-type D_{IRAP} scores. D_{IRAP} scores can range from -1 to 1. Since the scores are calculated by subtracting consistent latencies from inconsistent latencies, a positive score indicates that the person had shorter latencies on the stigma-consistent trials, which is interpreted to indicate more implicit stigma. Conversely, a negative score indicates the participant had shorter latencies on the inconsistent with stigma trials, which is interpreted to mean less implicit stigma (Barnes-Holmes et al., 2010). An IRAP score that is close to zero means there was little difference between latencies of consistent versus inconsistent trial types, indicating high flexibility.

Consistent with hypotheses, implicit stigma measured by the IRAP showed little relationship with CAMI subscales. However, overall IRAP scores did correlate with the social distance explicit measure of stigma. A higher willingness to be near both the diagnosed and undiagnosed individual was significantly correlated with lower D_{IRAP} scores. Additionally, inconsistent with hypotheses, D_{IRAP} scores did not correlate with any education variables, empathy variables, or the psychological flexibility variable (see Table P1).

Independent variables.

Mental health education. Amount of formal education relating to mental health was assessed by averaging the number of courses taken in the area of mental health such as psychopathology or counseling. Higher scores on Education Quantity indicated more classes taken in an area relevant to mental health. Participants reported having taken between 0 and 4 courses with a mean of .44 (see Table P1). Thus, the participants had, on average, between zero and one courses relevant to mental health. Education Quantity had a significant negative relationship with CAMI Authoritarianism and Social Restrictiveness subscale scores, such that more education was correlated with a lower endorsement of authoritarian and restrictive

attitudes. Education Quantity had a significant positive relationship with the CAMI Total as well, such that more education was associated with less overall stigma. Also, Education Quantity yielded a significant positive relationship with both $SDS_{no\ dx}$ and SDS_{dx} scores, such that more education was correlated with a higher willingness to interact with individuals in the vignettes.

Type of education was also assessed by averaging the amount of experiential work included in each class. Higher scores on Experiential Quality indicated more experiential coursework. Scores ranged from 0 to 5 with a mean of 2.53, indicating a moderate degree of experiential coursework (see Table P1). Experiential quality had a significant positive relationship with CAMI Benevolence subscale scores, such that more experiential training was correlated with a higher endorsement of benevolent beliefs toward those with psychological diagnoses. Additionally, Experiential Quality had a significant negative relationship with CAMI Total sores, such that more education was associated with lower overall stigma. Experiential quality was also significantly positively correlated with $SDS_{no\ dx}$ scores, such that higher Experiential Quality was correlated with a higher willingness to interact with the undiagnosed individual from the vignette.

Psychological flexibility. Responses on the AAQ-II were summed to calculate psychological inflexibility. Scores can range from 7 to 45 with higher scores indicating higher psychological inflexibility. As seen in Table P1, scores from this sample ranged from 7 to 45 with a mean of 21.04. This is comparable to the means in the original psychometric study (Bond et al., 2011). It was hypothesized that psychological inflexibility would be positively correlated with implicit and explicit measures of stigma. As seen in Table P1,

AAQ–II scores were not significantly correlated with any explicit or implicit measures of stigma.

Empathy. The IRI is a multidimensional scale divided into four subscales, which measure various components of empathy. Responses to reversed items were reverse scored and subscale scores were summed. Scores on each subscale can range from 0 to 28. Scores on the Fantasy subscale ranged from 4 to 28 with a mean of 18.88. Scores on the Perspective Taking subscale ranged from 6 to 27 with a mean of 19.40. Scores on the Empathic Concern subscale ranged from 6 to 27 with a mean of 19.74. Lastly, scores on the Personal Distress subscale ranged from 0 to 28 with a mean of 12.40 (see Table P1). Compared to means reported by Davis (1980) in the original IRI article (FS: 17.19, PT: 17.35, EC: 20.31, PD: 10.82), scores on the Fantasy, Perspective Taking and Personal Distress subscales from this sample are slightly higher and scores on the Empathic Concern subscale are slightly lower.

It was hypothesized that empathy would be negatively correlated with stigma such that individuals with higher empathy levels would have lower stigma levels. As seen in Table 1, scores on the CAMI Authoritarianism, Benevolence, and Total were all correlated with the Fantasy subscale in the hypothesized directions. Empathic Concern scores significantly correlated with all CAMI scores in the hypothesized directions. Lastly, Personal Distress scores were significantly correlated with CAMI Social Restrictiveness and Total scores again, in the hypothesized directions. Perspective Taking scores were significantly correlated with CAMI Authoritarian, Benevolence, CMHI, and Total scores, all in the hypothesized directions. Perspective Taking and Empathic Concern scores were highly significantly correlated with both SDS_{dx} and $SDS_{no\ dx}$ scores in the hypothesized direction as well. No IRI scores correlated with IRAP scores.

Social Desirability. Responses on the MCSDS were summed to calculate social desirability and level of conformity. Social desirability was measured as a potential covariate due to the sensitive nature of explicit questions about stigma. Scores can range from 0 to 33. Within this sample, scores ranged from 1 to 29 with a mean of 14.84. MCSDS scores were not correlated with scores on any measures of stigma (see Table P1). The MCSDS was thus excluded from all further analyses.

Multiple Regression Analyses

Predicting stigma from education. A series of multiple regression analyses were conducted predicting stigma from education quantity and experiential quality of education in order to test the hypothesis that both would contribute to less mental health stigma. All variables were standardized prior to analysis and separate analyses were run for each measure of stigma with Education Quantity, Experiential Quality, and the interaction term as predictors. The unique contribution of each predictor was examined after controlling for all other predictors (i.e., after holding other predictor variables constant at the mean).

After controlling for Experiential Quality, Quantity of Education predicted CAMI Social Restrictiveness scores, but no longer predicted any other CAMI subscale scores (see Table Q1). Neither Quality of Education nor the Education Quantity × Experiential Quality interaction predicted any CAMI scores.

A similar pattern was observed in predicting SDS scores. After controlling for Experiential Quality, Quantity of Education predicted only SDS_{dx} scores. After controlling for Quantity of Education, neither Experiential Quality nor the Education Quantity × Experiential Quality interaction predicted SDS scores (See Table Q2).

After controlling for Experiential Quality, Education Quantity predicted implicit

stigma in the hypothesized direction (see Figure 1). Education quantity predicted the overall D_{IRAP} scores such that increased education was associated with decreased implicit stigma. Neither experiential quality nor the interaction term predicted D_{IRAP} scores (See Table Q3).

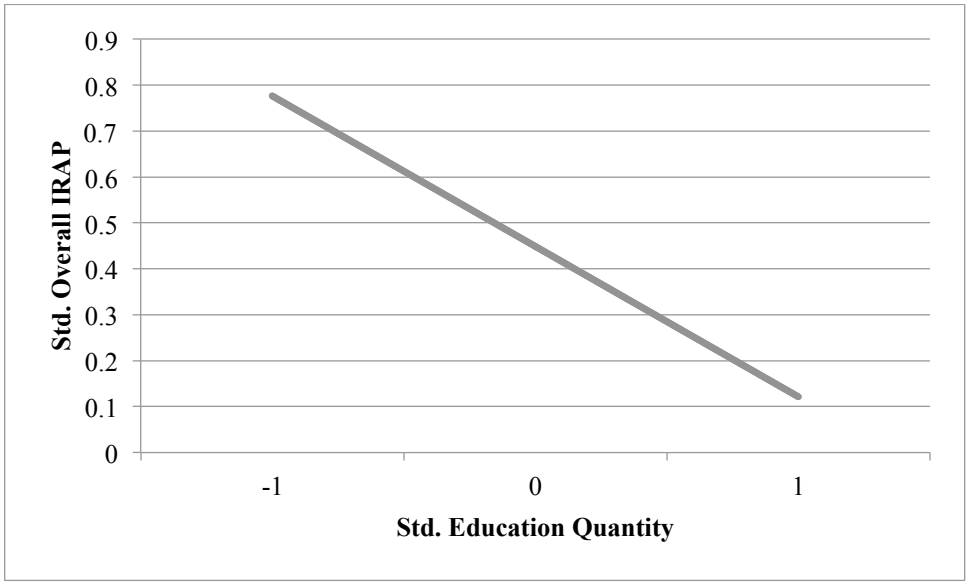

Figure 1. Education Quantity Predicting Overall IRAP Scores with Experiential Quality Held at the Mean

Predicting stigma from education and inflexibility. Initial regression analyses were repeated including inflexibility and all possible interaction terms in order to test the hypothesis that the relationship between education (quality and quantity) and stigma would be moderated by inflexibility. After controlling for inflexibility, only Education Quantity predicted CAMI Social Restrictiveness and SDSdx. More classes were associated with less endorsement of social restrictiveness (see Table Q4) and a higher willingness to interact with the diagnosed individual (see Table Q5). No analyses involving the IRAP yielded any significant predictions (see Table Q6). Also, no interaction terms were significant in predicting any stigma measures.

Predicting stigma from education and empathy. Initial regression analyses were repeated including each empathy term and all possible interaction terms in order to test the

hypothesis that the relationship between education (quality and quantity) and stigma would be moderated by empathy. Adding empathy to the two-term model (i.e., Education Quantity × Experiential quality) changed predictions only in the case of Authoritarianism and Social Restrictiveness scales on the CAMI and the IRAP.

Authoritarianism. As seen in Table Q11, after controlling for Empathic Concern, the Education Quantity × Experiential Quality interaction significantly predicted CAMI Authoritarianism scores. For individuals having high and mean levels of experiential training, as education quantity increased, participants reported less of an authoritarian attitude toward individuals with psychological diagnoses. In contrast, for individuals with low levels of experiential training, as education quantity increased, individuals reported higher levels of authoritarian attitudes toward individuals with psychological diagnoses. No other empathy subscales changed predictions from Education Quantity and Experiential Quality, and no three-way interaction terms were significant in predicting authoritarianism. Refer to Figure 2 for a graphical representation of the interaction.

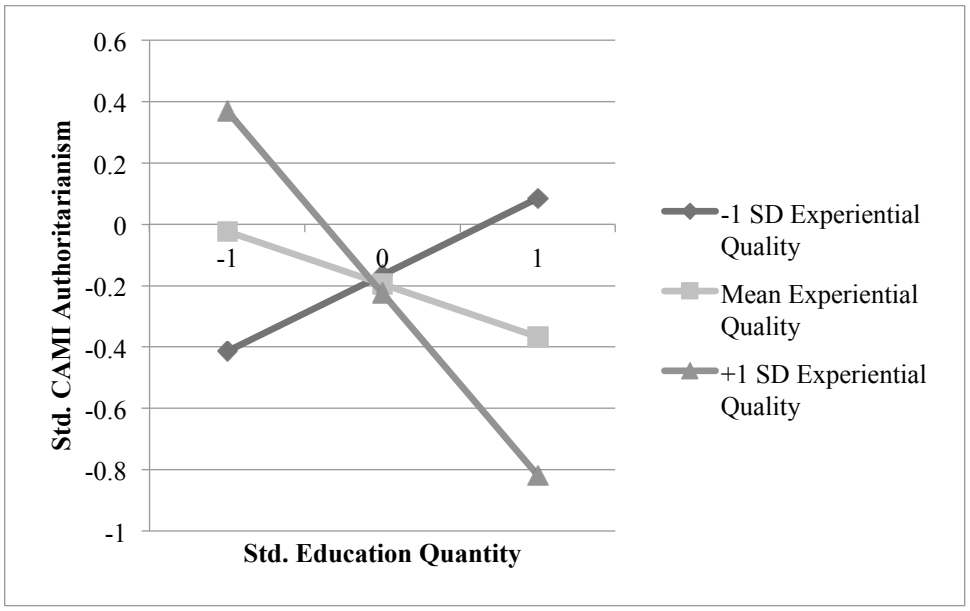

Figure 2: Education Quantity × Experiential Quality Interaction Effect on CAMI Authoritarianism with Empathic Concern Held at Mean

Social Restrictiveness. In two models, Education Quantity continued to predict Social Restrictiveness after the empathy factor and Experiential Quality were controlled for. As seen in Table Q12, when holding Fantasy and Experiential Quality constant at the mean, Education Quantity predicted CAMI Social Restrictiveness. As participants reported taking more mental health classes, they also reported less of a social restrictive attitude toward individuals with psychological diagnoses. Similarly, when holding Personal Distress and Experiential Quality constant at the mean, Education Quantity predicted CAMI Social Restrictiveness scores (see Table Q14). As participants reported taking more mental health classes, they also reported less of a social restrictive attitude.

Empathy moderated the impact of education on Social Restrictiveness only in the model including Personal Distress. Specifically, the Personal Distress × Experiential Quality interaction was significant in predicting social restrictiveness (see Figure 3). While holding Education Quantity at the mean, the Personal Distress × Experiential quality interaction

predicted scores on the Social Restrictiveness. For individuals low and at the mean in personal distress, as experiential quality increased, individuals endorsed a less social restrictive view toward individuals with psychological diagnoses. For individuals high in personal distress, the opposite relationship was found. As experiential quality increased, participants reported a more social restrictive view toward individuals with psychological diagnoses (see Table Q14).

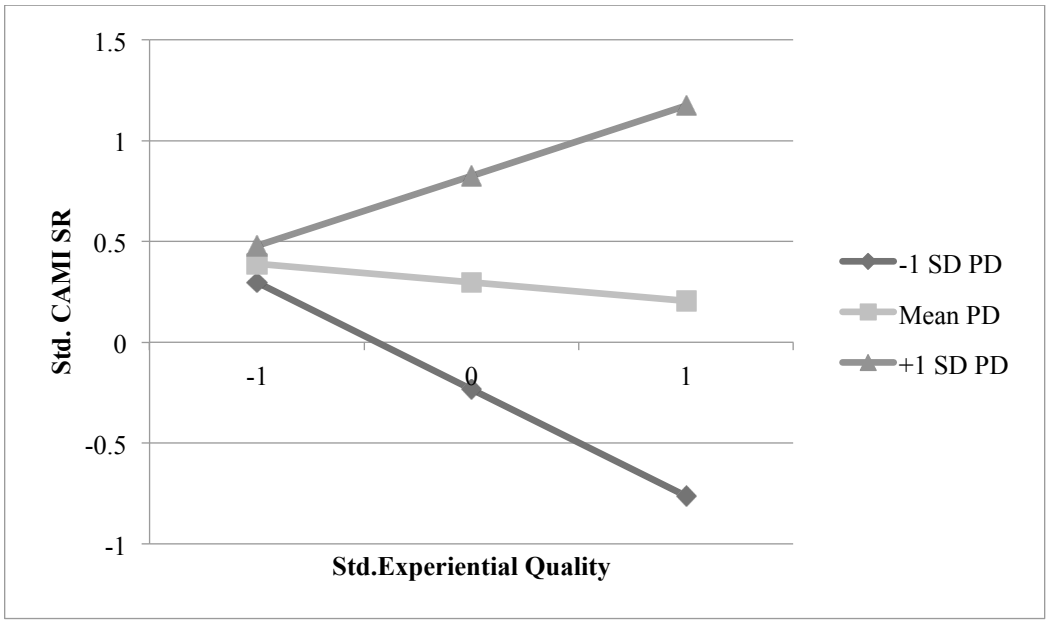

Figure 3: Personal Distress × Experiential Quality Interaction Effect on CAMI Social Restrictiveness with Education Quantity Held at Mean

The Personal Distress × Experiential quality × Education Quantity interaction was also significant. In other words, the pattern described above varied with education quantity. When an individual had low education quantity, the same pattern as above was seen. However, when an individual had high education quantity, as experiential quality increased, social restrictiveness decreased for all levels of personal distress (see Table Q14).

IRAP. All but the Fantasy subscale of the IRI (see Table Q15) moderated the impact of education on implicit stigma. As seen in Table Q16, when Empathic Concern was the

empathy term, while holding education quantity constant at the mean, the Empathic Concern × Experiential Quality interaction significantly predicted overall IRAP. For individuals low in Empathic Concern, as Experiential Quality increased, stigma measured by the IRAP decreased. However, for individuals with high levels of Empathic Concern, stigma measured by the IRAP increased with increased Experiential Quality. Refer to Figure 4 for a graphical representation of the interaction.

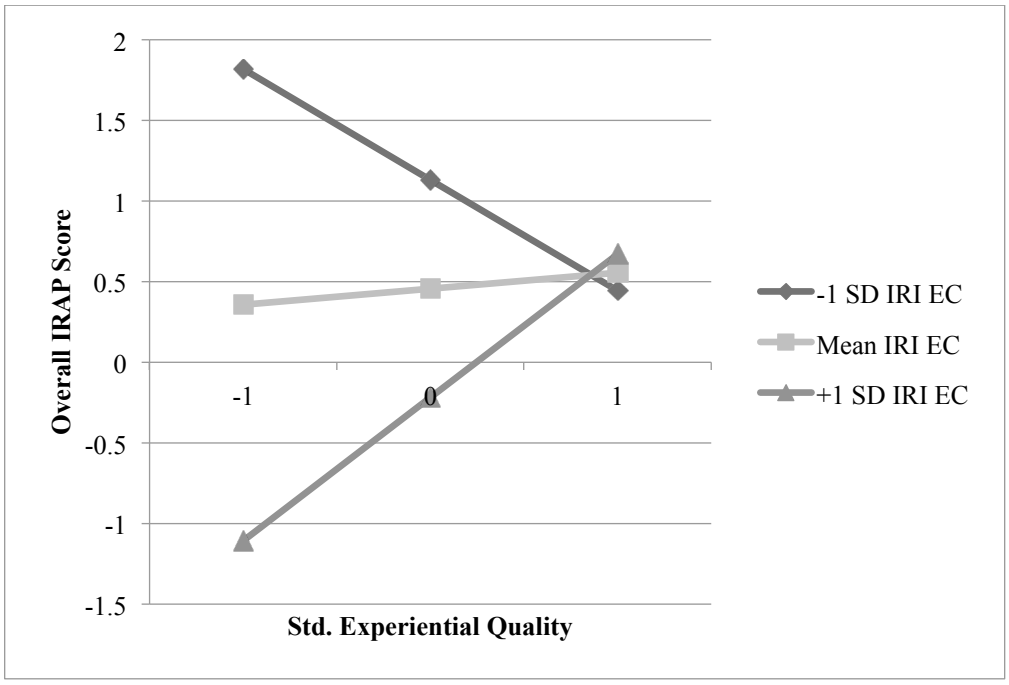

Figure 4: Empathic Concern × Experiential Quality Interaction Effect on Overall IRAP with Education Quantity Held at the Mean

When Perspective Taking was the empathy term, the same pattern as above occurred for the relationship between experiential quality and overall IRAP scores (see Table Q17). Finally, when Personal Distress was the empathy term, it also moderated the relationship between experiential quality and overall IRAP scores. For individuals high in Personal Distress, as Experiential Quality increased, stigma measured by the IRAP decreased.

However, for the individuals with mean and low levels of Personal Distress, as experiential quality increased, stigma measured by the IRAP increased (see Table Q18).

Predicting explicit stigma from interactions between implicit stigma and flexibility. In order to test the hypothesis that relationship between self-reported mental health stigma and stigma as assessed by the IRAP will be moderated by psychological flexibility, a series of regression analyses were conducted predicting CAMI scores from AAQ–II scores crossed with overall IRAP scores. As can be seen in Table Q19, no interactions yielded any significant predictions.

Chapter 4: Discussion

Mental health stigma leads to severe consequences in almost every aspect of a stigmatized person's life, including fostering treatment avoidance and underutilization (Demyttenaere et al., 2004). Existing research suggests that education reduces mental health stigma, however the reduction is short-lived (Corrigan, 2004). Newer, emerging research suggests that psychological flexibility (Masuda et al., 2009) and empathy (Mann & Himelein, 2008) may contribute to decreased stigma. The primary purposes of the current study were to 1) assess the relationship between varying amounts and qualities of education on mental health stigma, 2) to assess the impact of psychological flexibility and empathy on mental health stigma, and 3) to explore psychological flexibility and empathy as potential moderators of the relationship between education and mental health stigma. In order to yield the most complete findings, measures of stigma included self reported stigma, social distance, and implicit stigma using the IRAP.

Education and Stigma

The results of this study expanded upon the growing body of literature on the importance of education for mental health stigma reduction (e.g., Penn et al., 1994) by assessing the relationship between mental health stigma and education in the context of a university curriculum. It was hypothesized that participants reporting increased education quantity and increased experiential quality of education would report lower levels of stigma. In this study, participants who had taken more mental health courses in a university setting exhibited lower levels of social distance, and reported increased benevolence, less social restrictiveness and fewer authoritarian beliefs. Participants whose training was more experiential exhibited increased levels of benevolence and reductions in overall stigmatic

attitudes. Experiential Quality, however, did not moderate the impact of education quantity. This suggests that when quantity is necessarily limited, even a small amount of experiential education might serve to reduce explicit stigma. This adds to the research done by Masuda et al. (2007) who found that a very short, 2.5-hour experiential workshop reduced stigma among participants possessing varied levels of psychological flexibility, in contrast to the traditional education workshop, which only reduced stigma among people who were psychologically flexible to begin with.

Inconsistent with predictions, education alone did not predict implicit stigma. Many researchers discuss differing levels of stigma, and suggest that different processes are involved for stigma that can be measured explicitly versus deeper, implicit levels (Stier & Hinshaw, 2007). This finding could be due to factual education having only a superficial effect on stigma reduction and not affecting the deeper levels. It appears that education effects intentional behaviors that are under conscious awareness by bringing to attention how discrimination is no longer socially acceptable, however it does not seem to effect automatic behaviors controlled by implicit beliefs.

Empathy, Perspective Taking, Psychological Inflexibility, and Stigma

Results were largely consistent with previous research finding that increasing empathy and perspective taking leads to stigma reduction (Batson et al., 1997; Webster, 2010). Empathic Concern and Perspective Taking were associated with low levels of social distance, authoritarianism, and overall stigmatic attitudes, as well as higher levels of benevolence and acceptance of de-institutionalized care. Perspective Taking was also associated with low levels of social restrictiveness. Empathic Concern did not predict social restrictiveness.

Neither Empathic Concern nor Perspective Taking alone predicted implicit stigma, however they did moderate the relationship between education and implicit stigma. Similarly, Mann, and Himelein (2008) found that only education paired with perspective taking exercises reduced stigma. These results could indicate that it is not the empathy or perspective taking alone that leads to stigma reduction, but that these variables combined with experiential education is what is useful.

Despite Masuda et al.'s (2009) suggestion that psychological flexibility may be a key process in how empathy and perspective taking result in reductions in stigma, psychological inflexibility did not predict implicit or explicit stigma. This potentially could be due to the AAQ–II being self-report and not accurately assessing people's levels of flexibility. Since individuals who are relatively inflexible may not be aware of their avoidance, they may not answer precisely.

Empathy and Psychological Inflexibility as Moderators

This study also aimed to assess whether increases in flexibility and empathy would predict increases in the education – stigma relationship. With respect to inflexibility, this study found that, inconsistent with the hypothesis, higher levels of psychological flexibility did not moderate the relationship between education and stigma. Empathy subscales, however, did moderate the relationship between experiential quality and some measure of stigma, particularly scores on the IRAP. Empathic Concern, Perspective Taking, and Personal Distress all significantly moderated the relationship between Experiential Quality and overall IRAP performance. However, inconsistent with hypotheses, when empathy subscale scores were high, increases in Experiential Quality yielded higher implicit stigma.

It may be the case the experiential training is not fitting for everyone and can cause stigma to increase among certain individuals.

Limitations

The current study was limited by sample demographics. For one, the sample consisted of only 16 males (14.2%), and was 68.1% Caucasian. Additionally, the sample consisted of only college students, making results difficult to generalize to the general population. In future studies, it may be helpful to recruit from areas with more variation in demographics or offer additional incentives for males and ethnic minorities.

Another limitation is the restricted amount of responses to both education quantity and experiential quality questions. Of 113 participants, only 39 participants were able to respond to questions we asked to assess their level of mental health education. The other 74 participants had never taken any of the courses we asked about and therefore, were unable to respond to these questions. Future studies might ask more general questions about mental health education allowing for more participants to answer instead of only asking about a few specific courses. Additionally, it could be useful to stratify a sample in order to assess individuals at different points in their education, such as undergraduate students, doctoral students, and post-doctoral professionals.

A third limitation is that we did not include a vignette depicting a non-distressed person. Vignettes were written to depict two individuals both experiencing distressing symptoms and dealing with them in varying ways, allowing researchers to assess only how participants responded toward diagnosed versus undiagnosed individuals. It might benefit future studies to include a third vignette depicting an individual who is not experiencing any

distress. This would allow results to be compared for how participants respond to distressed versus non-distressed persons.

Also, internal consistency for the CAMI Social Restrictiveness subscale was limited, with Cronbach's Alpha being .50. Even though reliability estimates for this subscale in the original article (Taylor & Dear, 1981) were sound, this low estimate limits the validity of the findings associated with this variable.

Finally, there were limitations regarding the IRAP. First, the negative "is not" as a response choice in the IRAP-MHS may have complicated responding. Before choosing the correct response, participants must have processed the meaning of "is" versus "is not" in relation to the two stimuli and may have added more time to response latencies that may not have occurred if simpler choices were presented. In the future, it would be useful to change the response options to something similar, such as true-false, or similar-opposite in order to make processing time less.

Second, there was no way to indicate if participants were answering the IRAP based on the individuals they had previously read about in vignettes or if they were simply responding based on other information. It could have been the case that participants did not fully associate the names in the vignettes with the diagnosed or undiagnosed label, therefore making it difficult to interpret IRAP responses. In the future, it would be useful to incorporate a manipulation check to determine whether or not participants are actually responding based on their impressions of the characters described in vignettes.

Implications

Despite these limitations, the current study contributed to the growth of the stigma literature. We were able to replicate previous findings that increased education regarding

mental health as well as increases in empathy and perspective taking has a reducing effect on explicit stigma. Interestingly, while education and empathy variables alone correlated with explicit measures of stigma, none of these variables correlated with implicit stigma independently. It was only when empathy variables were crossed with education variables that significant predictions on implicit stigma were made. However, in these cases, higher empathy levels seemed to increase stigma. It could be the case that it is not the higher levels of empathy that lead to implicit stigma reduction, but that it is more of the process of participating in experiential exercises. Thus, experientially based education that emphasizes role-playing and active participation in humanizing exercises may be a useful addition to coursework relevant to mental health. For example, a very simple intervention, such as including small experiential exercises in courses that people are already taking may be warranted. Since research has shown that mental health professionals show stigma similar to that of the general population (Ahmedani, 2001; Tsao et al., 2008), it would be useful to introduce experiential work in the training of these processionals to combat stigma before they enter the workforce.

Future Directions

Research regarding the reduction of mental health stigma has been limited by inconsistent (e.g., Thornton & Wahl, 1996) and short-term results (e.g., Corrigan, 2004). Additionally, this area suffers from lack of a clear understanding of the development and maintenance of stigma. Relational Frame Theory offers one explanation for these areas and provides a framework for further research to understand and in turn reduce stigma. Primarily, research in the area of mental health stigma could benefit from utilizing RFT principles such as AARR. Since this study is one of the only ones done thus far using the IRAP to measure

mental health stigma, more should be conducted to further understand how people relate things arbitrarily and form evaluations based on these arbitrary relations. If these connections can be better known and the vital components of stigma determined, more effective reduction methods can be developed. Also, stigma reduction research could benefit from longitudinal studies to assess how reduction methods hold up over time. Particularly with newer methods such as empathy and perspective taking, no long-term follow-ups can be found in the literature. This study only asked about a limited amount of education exposure to individuals still enrolled in college. Future studies are needed to determine whether this education exposure reduces stigma long-term.

An important next step will include continuing to assess the effects of experiential exercises, empathy, and perspective taking on stigma reduction rather than focusing only on basic education of facts of psychological diagnoses. Existing research as well as results from the current study suggests that there is another variable moderating the relationship between education and stigma reduction. Future studies should aim to further understand this relationship and move beyond correlational studies to develop and assess actual interventions. It also could be useful to differentiate empathy from psychological flexibility in the future since the two variables yielded largely dissimilar results in this study.

Continued effort in understanding and reducing mental health stigma is greatly needed. The consequences of being stigmatized impact individuals' employment, social interactions, and treatment. In a one-year period, it was found that 85% of individuals with severe psychological diagnoses did not seek treatment (Demyttenaere et al., 2004). Failure to adhere to treatment as been linked to higher rehospitilization rates and exacerbate symptoms (Corrigan, 2004). Therefore, it is imperative for researchers to pursue successful stigma

reduction methods and implement them in education and training systems in attempts to combat and eventually eliminate stigma toward individuals with psychological diagnoses.

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Appendix A: Demographic and Education Questionnaire

The questions on this page request personal information used to compare different groups of people participating in this study. Please describe yourself honestly by filling in the blanks, or checking your response.

Gender (Please Check One)

Male_____ Female_____

Age_____

Ethnicity (Please Check One)

White_____ Asian_____
Black_____ Other_____ (Please Specify)
Hispanic_____

Class (Please Check One)

Freshman_____ Graduate Student_____
Sophomore_____ Other_____ (e.g. post-bac, non-degree seeking, etc.)
Junior_____
Senior_____

Major (Please Check One)

Psychology _____
Counselor Education _____
Other _____

Coursework (Please circle one for each question)

Have you taken an undergraduate course in abnormal psychology?
Yes No

If yes, to what extent did this course include experiential training that emphasizes flexibility? (E.g., role-playing, pretending to be a person with a psychological difficulty, feeling what a person with a psychological diagnosis feels, taking the perspective of a person with a psychological diagnosis, identifying your own psychological struggles, etc.)

Not At All					Extremely
0	1	2	3	4	5

If you are a graduate student, have you taken a graduate course in abnormal psychology?
Yes No N/A

Demographic and Education Questionnaire (continued)

If yes, to what extent did this course focus on experiential training that emphasizes flexibility? (E.g., role-playing, pretending to be a person with a psychological difficulty, feeling what a person with a psychological diagnosis feels, taking the perspective of a person with a psychological diagnosis, identifying your own psychological struggles, etc.)

Not At All					Extremely
0	1	2	3	4	5

Have you taken an undergraduate course in clinical or counseling psychology?

Yes No

If yes, to what extent did this course focus on experiential training that emphasizes flexibility? (E.g., role-playing, pretending to be a person with a psychological difficulty, feeling what a person with a psychological diagnosis feels, taking the perspective of a person with a psychological diagnosis, identifying your own psychological struggles, etc.)

Not At All					Extremely
0	1	2	3	4	5

If you are a graduate student, have you taken a graduate course in clinical or counseling psychology?

Yes No N/A

If yes, to what extent did this course focus on experiential training that emphasizes flexibility? (E.g., role-playing, pretending to be a person with a psychological difficulty, feeling what a person with a psychological diagnosis feels, taking the perspective of a person with a psychological diagnosis, identifying your own psychological struggles, etc.)

Not At All					Extremely
0	1	2	3	4	5

If you are a counselor education student (undergraduate or graduate), have you taken a course in specific methods of therapy?

Yes No N/A

If yes, to what extent did this course focus on experiential training that emphasizes flexibility? (E.g., role-playing, pretending to be a person with a psychological difficulty, feeling what a person with a psychological diagnosis feels, taking the perspective of a person with a psychological diagnosis, identifying your own psychological struggles, etc.)

Not At All					Extremely
0	1	2	3	4	5

Appendix B: Acceptance and Action Questionnaire – II

Below you will find a list of statements. Please rate how true each statement is for you by circling a number next to it. Use the scale below to make your choice.

1	2	3	4	5	6	7
never true	**very seldom true**	**seldom true**	**sometimes true**	**frequently true**	**almost always true**	**always true**

1.	My painful experiences and memories make it difficult for me to live a life that I would value.	1	2	3	4	5	6	7
2.	I'm afraid of my feelings.	1	2	3	4	5	6	7
3.	I worry about not being able to control my worries and feelings.	1	2	3	4	5	6	7
4.	My painful memories prevent me from having a fulfilling life.	1	2	3	4	5	6	7
5.	Emotions cause problems in my life.	1	2	3	4	5	6	7
6.	It seems like most people are handling their lives better than I am.	1	2	3	4	5	6	7
7.	Worries get in the way of my success.	1	2	3	4	5	6	7

Appendix C: The Marlowe-Crowne Social Desirability Scale (MCSDS)

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is *true* or *false* as it pertains to you personally. It is best to answer the following items with your first judgment without spending too much time thinking over any one question.

Please circle "True" if the statement is true, and circle "False" if the statement is false to you personally.

1. Before voting I thoroughly investigate the qualifications of all the candidates.

True **False**

2. I never hesitate to go out of my way to help someone in trouble.

True **False**

3. It is sometimes hard for me to go on with my work if I am not encouraged.

True **False**

4. I have never intensely disliked anyone.

True **False**

5. On occasions I have had doubts about my ability to succeed in life.

True **False**

6. I sometimes feel resentful when I don't get my way.

True **False**

7. I am always careful about my manner of dress.

True **False**

8. My table manners at home are as good as when I eat out in a restaurant.

True **False**

MCSDS (continued)

9. If I could get into a movie without paying and be sure I was not seen, I would probably do it.

True **False**

10. On a few occasions, I have given up something because I thought too little of my ability.

True **False**

11. I like to gossip at times.

True **False**

12. There have been times when I felt like rebelling against people in authority even though I knew they were right.

True **False**

13. No matter who I'm talking to, I'm always a good listener.

True **False**

14. I can remember "playing sick" to get out of something.

True **False**

15. There have been occasions when I have taken advantage of someone.

True **False**

16. I'm always willing to admit it when I make a mistake.

True **False**

17. I always try to practice what I preach.

True **False**

18. I don't find it particularly difficult to get along with loudmouthed, obnoxious people.

True **False**

MCSDS (continued)

19. I sometimes try to get even rather than forgive and forget.

True **False**

20. When I don't know something I don't mind at all admitting it.

True **False**

21. I am always courteous, even to people who are disagreeable.

True **False**

22. At times I have really insisted on having things my own way.

True **False**

23. There have been occasions when I felt like smashing things.

True **False**

24. I would never think of letting someone else be punished for my wrong-doings.

True **False**

25. I never resent being asked to return a favor.

True **False**

26. I have never been irked when people expressed ideas very different from my own.

True **False**

27. I never make a long trip without checking the safety of my car.

True **False**

28. There have been times when I was quite jealous of the good fortune of others.

True **False**

29. I have almost never felt the urge to tell someone off.

True **False**

MCSDS (continued)

30. I am sometimes irritated by people who ask favors of me.

True **False**

31. I have never felt that I was punished without cause.

True **False**

32. I sometimes think when people have a misfortune they only got what they deserved.

True **False**

33. I have never deliberately said something that hurt someone's feelings.

True **False**

Appendix D: Community Attitudes toward the Mentally Ill Scale (CAMI)

Read each statement carefully then decide to what extent you agree or disagree with the statement. Then, write the number that corresponds with the extent to which you agree or disagree with the statement in the blank preceding each statement.

There are 5 different levels of agreement/disagreement from which to choose, they are:

1= Strongly Disagree 2=Disagree 3=Neutral 4= Agree 5=Strongly Agree

1. One of the main causes of mental illness is a lack of self-discipline and will power._____
2. The mentally ill have for too long been the subject of ridicule._____
3. The mentally ill should not be given any responsibility._____
4. Residents should accept the location of mental health facilities in their neighborhood to serve the needs of the local community._____
5. The best way to handle the mentally ill is to keep them behind locked doors._____
6. More tax money should be spent on the care and treatment of the mentally ill._____
7. The mentally ill should be isolated from the rest of the community. _____
8. The best therapy for many mental patients is to be part of a normal community._____
9. There is something about the mentally ill that makes it easy to tell them from normal people._____
10. We need to adopt a more tolerant attitude toward the mentally ill in our society._____
11. A woman would be foolish to marry a man who has suffered from mental illness, even though he seems fully recovered. _____
12. As far as possible, mental health services should be provided through community based facilities._____
13. As soon as a person shows signs of mental disturbance, he should be hospitalized._____
14. Our mental hospitals seem more like prisons than like places where the mentally ill can be cared for._____
15. I would not want to live next door to someone who has been mentally ill. _____
16. Locating mental health services in residential neighborhoods does not endanger local residents._____
17. Mental patients need the same kind of control and discipline as a young child. _____
18. We have a responsibility to provide the best possible care for the mentally ill. _____
19. Anyone with a history of mental problems should be excluded from taking public office. _____
20. Residents have nothing to fear from people coming into their neighborhood to obtain mental health services. _____
21. Mental illness is an illness like any other. _____
22. The mentally ill don't deserve our sympathy. _____
23. The mentally ill should not be denied their individual rights. _____
24. Mental health facilities should be kept out of residential neighborhoods. _____
25. The mentally ill should not be treated as outcasts of society. _____
26. The mentally ill are a burden on society. _____

CAMI (continued)

27. Mental patients should be encouraged to assume the responsibilities of normal life. _____
28. Local residents have good reason to resist the location of mental health services in their neighborhood. _____
29. Less emphasis should be placed on protecting the public from the mentally ill. _____
30. Increased spending on mental health services is a waste of tax dollars. _____
31. No one has the right to exclude the mentally ill from his or her neighborhood. _____
32. Having mental patients living in residential neighborhoods might be good therapy, but the risks to residents are too great. _____
33. Mental hospitals are an outdated means of treating the mentally ill. _____
34. There are sufficient existing services for the mentally ill. _____
35. The mentally ill are far less of a danger than most people suppose. _____
36. It is frightening to think of people with mental health problems living in residential neighborhoods. _____
37. Virtually anyone can become mentally ill. _____
38. It is best to avoid anyone who has mental problems. _____
39. Most adults who were once patients in a mental hospital can be trusted as babysitters. _____
40. Locating mental health facilities in a residential area downgrades the neighborhood. _____

Appendix E: Interpersonal Reactivity Index (IRI)

The following statements inquire about your thoughts and feelings in a variety of situations. For each item, indicate how well it describes you by choosing the appropriate letter on the scale at the top of the page: A, B, C, D, or E. When you have decided on your answer, fill in the letter on the answer sheet next to the item number. READ EACH ITEM CAREFULLY BEFORE RESPONDING. Answer as honestly as you can.

ANSWER SCALE:

A	**B**	**C**	**D**	**E**
DOES NOT DESCRIBE ME WELL				DESCRIBES ME VERY WELL

_____ 1. I daydream and fantasize, with some regularity, about things that might happen to me.
_____ 2. I often have tender, concerned feelings for people less fortunate than me.
_____ 3. I sometimes find it difficult to see things from the "other guy's" point of view.
_____ 4. Sometimes I don't feel very sorry for other people when they are having problems.
_____ 5. I really get involved with the feelings of the characters in a novel.
_____ 6. In emergency situations, I feel apprehensive and ill-at-ease.
_____ 7. I am usually objective when I watch a movie or play, and I don't often get completely caught up in it.
_____ 8. I try to look at everybody's side of a disagreement before I make a decision.
_____ 9. When I see someone being taken advantage of, I feel kind of protective towards them.
_____ 10. I sometimes feel helpless when I am in the middle of a very emotional situation.
_____ 11. I sometimes try to understand my friends better by imagining how things look from their perspective.
_____ 12. Becoming extremely involved in a good book or movie is somewhat rare for me.
_____ 13. When I see someone get hurt, I tend to remain calm.
_____ 14. Other people's misfortunes do not usually disturb me a great deal.
_____ 15. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.
_____ 16. After seeing a play or movie, I have felt as though I were one of the characters.
_____ 17. Being in a tense emotional situation scares me.
_____ 18. When I see someone being treated unfairly, I sometimes don't feel very much pity for them.
_____ 19. I am usually pretty effective in dealing with emergencies.
_____ 20. I am often quite touched by things that I see happen.
_____ 21. I believe that there are two sides to every question and try to look at them both.
_____ 22. I would describe myself as a pretty soft-hearted person.
_____ 23. When I watch a good movie, I can very easily put myself in the place of a leading character.

IRI (continued)

_____ 24. I tend to lose control during emergencies.
_____ 25. When I'm upset at someone, I usually try to "put myself in his shoes" for a while.
_____ 26. When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me.
_____ 27. When I see someone who badly needs help in an emergency, I go to pieces.
_____ 28. Before criticizing somebody, I try to imagine how I would feel if I were in their place.

Appendix F: Female Vignette 1

(Ashley Version)

Please read the following description of this individual in order to answer additional self-report items based on the character.

Ashley is a 20-year-old female who is a junior at a local university. Up until recently, life was fine for Ashley. While nothing much has changed in Ashley's life, she sometimes feels down, a little upset, and finds herself tossing and turning at night. She wakes up in the morning unrested and with an agitated feeling that lingers throughout her day. Ashley feels that at times things affect her differently than they do other people and that when things go wrong, she sometimes breaks down. Over the last couple of weeks, Ashley has begun to wander the house and wakes roommate at 4 a.m. seeking support and reassurance. Ashley's roommate is concerned and tells Ashley she is probably just really stressed. Ashley has recently decided to try more than usual to seek out extra time with her family and friends and to push harder to focus on her studies.

Appendix G: Male Vignette 1

(Michael Version)

Please read the following description of this individual in order to answer additional self-report items based on the character.

Michael is a 20-year-old male who is a junior at a local university. Up until recently, life was fine for Michael. While nothing much has changed in Michael ‘s life, he sometimes feels down, a little upset, and finds himself tossing and turning at night. He wakes up in the morning unrested and with an agitated feeling that lingers throughout his day. Michael feels that at times things affect him differently than they do other people and that when things go wrong, he sometimes breaks down. Over the last couple of weeks, Michael has begun to wander the house and woke his roommate at 4 a.m. seeking support and reassurance. Michael’s roommate is concerned and tells Michael he is probably just really stressed. Michael has recently decided to try more than usual to seek out extra time with his family and friends and to push harder to focus on his studies.

Appendix H: Female Vignette 2

(Sarah Version)

Please read the following description of this individual in order to answer additional self-report items based on the character.

Sarah is a 20-year-old female who is a junior at a local university. Up until a year ago, life was going pretty well for Sarah. While nothing much is going wrong in Sarah's life, she sometimes feels worried, anxious, and has trouble sleeping at night. She wakes up in the morning with a flat, heavy feeling that sticks with her all day long. Sarah feels that little things tend to bother her more than they bother other people and that when things go wrong, she sometimes gets nervous and freaks out. She is not usually violent towards others, however, over the last couple of weeks, she has been a bit intimidating and her neighbors have been concerned. Close friends have told her that they are unsure how she will act from one moment to the next. Last week Sarah decided to go see a therapist at the university's student counseling center. The therapist gave her a psychological diagnosis and scheduled her for another 7 appointments. Sarah was also referred to a psychiatrist to be evaluated for medication.

Appendix I: Male Vignette 2

(Christopher Version)

Please read the following description of this individual in order to answer additional self-report items based on the character.

Christopher is a 20-year-old male who is a junior at a local university. Up until a year ago, life was going pretty well for Christopher. While nothing much is going wrong in Christopher ‘s life, he sometimes feels worried, anxious, and has trouble sleeping at night. He wakes up in the morning with a flat, heavy feeling that sticks with him all day long. Christopher feels that little things tend to bother him more than they bother other people and that when things go wrong, he sometimes gets nervous and freaks out. He is not usually violent towards others, however, over the last couple of weeks, he has been a bit intimidating and his neighbors have been concerned. Close friends have told him that they are unsure how he will act from one moment to the next. Last week Christopher decided to go see a therapist at the university’s student counseling center. The therapist gave him a psychological diagnosis and scheduled him for another 7 appointments. Christopher was also referred to a psychiatrist to be evaluated for medication.

Appendix J: Social Distance Scale–Female Version– Character 1

Strongly Oppose	Somewhat Oppose	Neutral	Somewhat Favor	Strongly Favor
-2	**-1**	**0**	**1**	**2**

The following questions ask about how willing you might be to interact with Ashley. Indicate your feelings toward each situation by circling the number that you feel best relates to you personally.

1. How would you feel about asking Ashley for her notes if you missed a class?

   -2 -1 0 1 2

2. How would you feel about sitting by Ashley in class?

   -2 -1 0 1 2

3. How would you feel about offering Ashley your notes if she missed class?

   -2 -1 0 1 2

4. How would you feel about inviting Ashley to do something social outside of class?

   -2 -1 0 1 2

5. How would you feel about studying with Ashley outside of class?

   -2 -1 0 1 2

6. How would you feel about having Ashley as your neighbor?

   -2 -1 0 1 2

7. How would you feel about having Ashley over for dinner at your house?

   -2 -1 0 1 2

8. How would you feel about being related to Ashley?

   -2 -1 0 1 2

9. How would you feel about Ashley babysitting children?

   -2 -1 0 1 2

10. How would you feel about having to work on a project with Ashley?

    -2 -1 0 1 2

Appendix K: Social Distance Scale–Male Version– Character 1

Strongly Oppose	Somewhat Oppose	Neutral	Somewhat Favor	Strongly Favor
-2	-1	0	1	2

The following questions ask about how willing you might be to interact with Christopher. Indicate your feelings toward each situation by circling the number that you feel best relates to you personally.

1. How would you feel about asking Christopher for his notes if you missed a class?

   -2 -1 0 1 2

2. How would you feel about sitting by Christopher in class?

   -2 -1 0 1 2

3. How would you feel about offering Christopher your notes if he missed class?

   -2 -1 0 1 2

4. How would you feel about inviting Christopher to do something social outside of class?

   -2 -1 0 1 2

5. How would you feel about studying with Christopher outside of class?

   -2 -1 0 1 2

6. How would you feel about having Christopher as your neighbor?

   -2 -1 0 1 2

7. How would you feel about having Christopher over for dinner at your house?

   -2 -1 0 1 2

8. How would you feel about being related to Christopher?

   -2 -1 0 1 2

9. How would you feel about Christopher babysitting children?

   -2 -1 0 1 2

10. How would you feel about having to work on a project with Christopher?

    -2 -1 0 1 2

Appendix L: Social Distance Scale–Female Version – Character 2

Strongly Oppose	Somewhat Oppose	Neutral	Somewhat Favor	Strongly Favor
-2	**-1**	**0**	**1**	**2**

The following questions ask about how willing you might be to interact with Sarah. Indicate your feelings toward each situation by circling the number that you feel best relates to you personally.

1. How would you feel about asking Sarah for her notes if you missed a class?

   -2 -1 0 1 2

2. How would you feel about sitting by Sarah in class?

   -2 -1 0 1 2

3. How would you feel about offering Sarah your notes if she missed class?

   -2 -1 0 1 2

4. How would you feel about inviting Sarah to do something social outside of class?

   -2 -1 0 1 2

5. How would you feel about studying with Sarah outside of class?

   -2 -1 0 1 2

6. How would you feel about having Sarah as your neighbor?

   -2 -1 0 1 2

7. How would you feel about having Sarah over for dinner at your house?

   -2 -1 0 1 2

8. How would you feel about being related to Sarah?

   -2 -1 0 1 2

9. How would you feel about Sarah babysitting children?

   -2 -1 0 1 2

10. How would you feel about having to work on a project with Sarah?

    -2 -1 0 1 2

Appendix M: Social Distance Scale–Male Version– Character 2

Strongly Oppose	Somewhat Oppose	Neutral	Somewhat Favor	Strongly Favor
-2	**-1**	**0**	**1**	**2**

The following questions ask about how willing you might be to interact with Michael. Indicate your feelings toward each situation by circling the number that you feel best relates to you personally.

1. How would you feel about asking Michael for his notes if you missed a class?

   -2 -1 0 1 2

2. How would you feel about sitting by Michael in class?

   -2 -1 0 1 2

3. How would you feel about offering Michael your notes if he missed class?

   -2 -1 0 1 2

4. How would you feel about inviting Michael to do something social outside of class?

   -2 -1 0 1 2

5. How would you feel about studying with Michael outside of class?

   -2 -1 0 1 2

6. How would you feel about having Michael as your neighbor?

   -2 -1 0 1 2

7. How would you feel about having Michael over for dinner at your house?

   -2 -1 0 1 2

8. How would you feel about being related to Michael?

   -2 -1 0 1 2

9. How would you feel about Michael babysitting children?

   -2 -1 0 1 2

10. How would you feel about having to work on a project with Michael?

    -2 -1 0 1 2

Appendix N: Consent to Participate in an Experimental Study

Title: Mental Health Stigma among College Students

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Description
People naturally have thoughts about other people. Some of those thoughts are good, while others are not. It is very common for individuals to have negative, or stigmatizing thoughts about individuals with mental health struggles, even if these thoughts are not based on facts. While the general concept of stigma is greatly researched, there is limited investigation on what works to reduce stigma. We are interested in exploring what other types of thoughts and feelings come with negative beliefs in attempts to identify things that make stigma levels higher or lower.

To help us explore this, we are inviting you to participate in a two-part study. If you decide to participate, you will complete seven questionnaires that have to do with a variety of topics related to mental health stigma such as how you feel toward other people and how you experience your thoughts. You will then complete a matching computer task. It should take about forty-five minutes to complete the study.

Risks and Benefits
You may feel uncomfortable answering questions about your personal beliefs or attitudes. We want you to know that the questionnaires will not have your name on them. You will receive a subject number to use for the study. You will turn everything in with your subject number. This way, all of your work can be tracked but they will not be any way connected to your name. We do not think that there are any other risks. Some people feel good about participating in a project that will help us to continue to develop new ways of helping people. Also, we will talk with you about our project at the end of the study, and we think you may learn more about how psychology research is conducted.

Consent (continued)

Cost and Payments
The questionnaires and computer task will take about 45 minutes to finish. There is no other cost for helping us with this study. You will be compensated for your time and participation by receiving extra credit in your course.

Confidentiality
We will not link your name to any of your questionnaire responses. Your instructor will be informed only of your participation at the end of the semester so that he or she can assign your credit. The only identifying information that will be on your questionnaires will be your gender, age, and ethnicity. Therefore, we do not believe that you can be identified from the information we collect.

Right to Withdraw
You do not have to take part in this study. If you start the study and decide that you do not want to finish, all you have to do is to tell Sunni Primeaux or Dr. Sandoz in person, by letter, by email, or by telephone (contact information above). Whether or not you choose to participate or to withdraw will not affect your standing with your professor, the Department of Psychology, or with the University, and it will not cause you to lose any benefits to which you are entitled. You will still receive the one percentage point in your course. The researchers may terminate your participation in the study without regard to your consent and for any reason, such as protecting your safety and protecting the integrity of the research data.

Institutional Review Board
The Institutional Review Board (UL Lafayette IRB) functions to assure that research involving human subjects is carried out in an ethical manner. If you have any questions, concerns, or reports regarding your rights as a participant of research, please contact the Chair of the UL Lafayette IRB, Dr. Nicole Müller, at (337) 482-6489 or irb@louisiana.edu.

Statement of Consent
I have read the above information and I have been given a copy of this form. I understand that I can also ask any questions and receive answers before I consent to participate in the study by contacting Dr. Sandoz or Sunni Primeaux. By signing below, I consent to participate in the study.

_____
Signature of Participant

_____
Signature of Investigator

Appendix O: Debriefing

Having thoughts about others and creating social categories can be a valuable part of social functioning. Unfortunately, negative thoughts and categorizing can also lead to stigma. Mental health stigma, while very common, often leads to harmful consequences. Research has shown that mental health professionals do not differ from the general population in their stigmatizing attitudes.

Each participant answered self-report questionnaires designed to gauge attitudes toward individuals with psychological diagnoses, empathetic tendencies, acceptance and flexibility. In addition, each participant engaged in a computerized task designed to measure implicit attitudes, or attitudes that participants may not be willing to admit they have. This will allow us to gain a more accurate measure of the levels of mental health stigma among college students relevant to the mental health field. In addition, this will allow us to determine where correlations exist between levels of mental health stigma, empathy and psychological flexibility in attempts to better understand what moderates stigma in order to potentially develop more effective stigma-reducing programs.

Sometimes peoples' relationships with their thoughts can be experienced in such a way that they would benefit from speaking to a therapist. If you are in need of assistance because of distress, you may receive free counseling by contacting the UL Lafayette Counseling and Testing center (337) 482-6480 or stopping by the Saucier Wellness Center in OK Allen Hall to schedule an appointment.

If you have any questions or concerns about this study, please feel free to express them now, or contact Dr. Emily K. Sandoz at (337) 371-5440.

Appendix P: Summary of Intercorrelations, Means, and Standard Deviations

Table P1

Summary of Intercorrelations, Means, and Standard Deviations for All Variables

Measure	AAQ-II	MCSDS	FANT	PT	EC	PD	EDQT	EXQL
AAQ-II	--							
MCSD	-0.16	--						
FANT	0.22*	-0.19*	--					
PT	-0.03	0.23*	0.00	--				
EC	-0.00	0.08	0.21*	0.31***	--			
PD	0.39***	-0.14	0.25**	-0.22*	0.05	--		
EDQT	-0.10	-0.18	0.04	0.29**	0.19*	-0.14	--	
EXQL	-0.04	-0.05	-0.08	0.31	0.26	-0.38*	0.31	--
AUTH	-0.00	0.10	-0.25**	-0.27**	-0.25**	0.15	-0.42***	-0.26
BENEV	-0.07	0.10	0.29**	0.30**	0.39***	-0.11	0.30**	0.39*
SORES	0.05	-0.03	-0.13	-0.16	-0.20*	0.23*	-0.36***	-0.27
CMHI	0.06	0.17	0.14	0.27**	0.21*	-0.17	0.13	0.24
TOTAL	0.02	-0.05	-0.24**	-0.30**	-0.31***	0.20*	-0.37***	-0.35*
SDS_{nodx}	-0.03	0.08	0.04	0.37***	0.41***	-0.04	0.22*	0.37*
SDS_{dx}	-0.08	0.16	0.09	0.31***	0.32***	-0.09	0.34***	0.15
IRAP	0.02	-0.02	-0.05	-0.02	-0.08	-0.03	-0.14	-0.15
M	21.04	14.84	18.88	19.40	19.74	12.40	0.44	2.53
SD	8.80	5.63	6.49	4.50	3.62	5.52	0.81	1.53

Measure	AAQ-II	MCSDS	FANT	PT	EC	PD	EDQT	EXQL
AUTH	--							
BENEV	-0.70***	--						
SORES	0.64***	-0.58***	--					
CMHI	-0.45***	0.60***	-0.58***	--				
TOTAL	0.85***	-0.86***	0.85***	-0.78***	--			
SDS_{nodx}	-0.33***	0.43***	-0.36***	0.45***	-0.46***	--		
SDS_{dx}	-0.47***	0.43***	-0.48***	0.44***	-0.55***	0.65***	--	
IRAP	-0.05	-0.09	0.04	-0.17	0.07	-0.24*	-0.31**	--
M	2.31	3.82	2.32	3.35	-25.41	7.31	-0.45	0.13
SD	0.48	0.40	0.47	0.42	14.77	7.12	9.35	0.38

Note: All variables standardized prior to analysis. AAQ-II= Acceptance and Action Questionnaire-II. MCSD= Marlow-Crowne Social Desirability Scale. FANT= IRI Fantasy subscale. PT= IRI Perspective Taking subscale. EC= IRI Empathic Concern subscale. PD= IRI Personal Distress Subscale. EDQT= Education Quantity. EXQL= Experiential Quality. AUTH= CAMI Authoritarianism. BENEV= CAMI Benevolence. SOCRES= CAMI Social Restrictiveness Subscale. CMHI= CAMI Community Mental Health Ideology. TOTAL= CAMI Total. SDSnodx= Social Distance Scale-Undiagnosed Person. SDSdx= Social Distance Scale-Diagnosed Person.

*p < .10. **p <.05. ***p < .01.

Appendix Q: Multiple Regression Analyses

Table Q1

Regression Models Predicting CAMI Scores from Education Quantity (ED QUANT) and Experiential Quality (EX QUAL)

Predictors	B	SE B	t	ΔR^2
CAMI Authoritarianism				
ED QUANT	-0.20	0.14	-1.42	0.06
EX QUAL	-0.07	0.19	-0.38	0.03
ED QUANT × EX QUAL	-0.21	0.16	-1.25	0.04
CAMI Benevolence				
ED QUANT	0.23	0.14	1.66	0.07
EX QUAL	0.26	0.18	1.42	0.09
ED QUANT × EX QUAL	0.10	0.16	0.64	0.01
CAMI Social Restrictiveness				
ED QUANT	-0.35	0.12	-2.94**	0.18
EX QUAL	-0.13	0.16	0.41	0.02
ED QUANT × EX QUAL	0.02	0.14	0.89	0.00
CAMI CMHI				
ED QUANT	0.03	0.15	0.82	0.00
EX QUAL	0.25	0.19	0.20	0.05
ED QUANT × EX QUAL	-0.03	0.17	0.84	0.00
CAMI Total				
ED QUANT	-0.25	0.14	-1.83	0.08
EX QUAL	-0.21	0.18	-1.15	0.06
ED QUANT × EX QUAL	-0.08	0.16	-0.50	0.01

Note: All variables standardized prior to analysis.
*$p < .10$. **$p < .05$. ***$p < .01$.

Multiple Regression Analyses (continued)

Table Q2

Regression Models Predicting Social Distance from Education Quantity (ED QUANT) and Experiential Quality (EX QUAL)

Predictors	B	SE B	t	ΔR^2
$SDS_{no\ dx}$				
ED QUANT	0.27	0.14	1.99	0.08
EX QUAL	0.31	0.18	1.73	0.07
ED QUANT × EX QUAL	-0.06	0.16	0.70	0.00
SDS_{dx}				
ED QUANT	0.39	0.14	2.84**	0.19
EX QUAL	-0.02	0.18	-0.10	0.00
ED QUANT × EX QUAL	0.05	0.16	0.32	0.00

Note: All variables standardized prior to analysis.
*$p < .10$. **$p < .05$. ***$p < .01$.

Multiple Regression Analyses (continued)

Table Q3

Regression Models Predicting IRAP Scores from Education Quantity (ED QUANT) and Experiential Quality (EX QUAL)

Predictors	B	SE B	t	ΔR^2
Overall IRAP				
ED QUANT	-0.33	0.15	-2.13*	0.15
EX QUAL	0.01	0.23	0.05	0.00
ED QUANT × EX QUAL	-0.11	0.19	-0.60	0.01

Note: All variables standardized prior to analysis.
*$p < .10$. **$p < .05$. ***$p < .01$.

Multiple Regression Analyses (continued)

Table Q4

Regression Models Predicting CAMI Scores from Education Quantity (ED QUANT), Experiential Quality (EX QUAL), and Psychological Inflexibility (AAQ)

Predictors	B	SE B	t	ΔR^2
CAMI Authoritarianism				
AAQ	-0.13	0.32	-0.40	0.01
ED QUANT	-0.25	0.18	-1.41	0.11
EX QUAL	-0.36	0.24	-1.46	0.03
AAQ × ED QUANT	0.16	0.27	0.58	0.07
AAQ × EX QUAL	0.41	0.28	1.46	0.07
ED QUANT × EX QUAL	0.03	0.20	0.15	0.00
AAQ × ED QUANT × EX QUAL	-0.10	0.36	-0.27	0.00
CAMI Benevolence				
AAQ	0.22	0.33	0.65	0.02
ED QUANT	0.26	0.19	1.39	0.15
EX QUAL	0.43	0.25	1.70	0.08
AAQ × ED QUANT	-0.19	0.29	-0.65	0.03
AAQ × EX QUAL	-0.13	0.29	-0.43	0.00
ED QUANT × EX QUAL	-0.03	0.21	-0.14	0.00
AAQ × ED QUANT × EX QUAL	0.12	0.38	0.31	0.00
CAMI Social Restrictiveness				
AAQ	0.31	0.27	1.17	0.01
ED QUANT	-0.45	0.15	-3.04**	0.21
EX QUAL	-0.40	0.20	-1.96	0.02
AAQ × ED QUANT	-0.06	0.23	-0.27	0.01
AAQ × EX QUAL	0.48	0.23	2.03	0.03
ED QUANT × EX QUAL	0.17	0.17	1.00	0.01
AAQ × ED QUANT × EX QUAL	-0.48	0.30	-1.57	0.05

Multiple Regression Analyses (continued)

Table Q4 continued.

Predictors	B	SE B	t	ΔR^2
CAMI CMHI				
AAQ	-0.33	0.35	-0.96	0.01
ED QUANT	0.09	0.19	0.47	0.01
EX QUAL	0.39	0.26	1.49	0.05
AAQ × ED QUANT	0.06	0.30	0.22	0.00
AAQ × EX QUAL	-0.26	0.31	-0.84	0.00
ED QUANT × EX QUAL	-0.07	0.22	-0.35	0.00
AAQ × ED QUANT × EX QUAL	0.42	0.40	1.06	0.03
CAMI Total				
AAQ	0.09	0.32	0.30	0.00
ED QUANT	-0.32	0.18	-1.83	0.14
EX QUAL	-0.47	0.24	-1.96	0.06
AAQ × ED QUANT	0.06	0.27	0.24	0.03
AAQ × EX QUAL	0.39	0.28	1.41	0.02
ED QUANT × EX QUAL	0.09	0.20	0.46	0.00
AAQ × ED QUANT × EX QUAL	-0.33	0.36	-0.93	0.02

Note: All variables standardized prior to analysis.

*$p < .10$. **$p < .05$. ***$p < .01$.

Multiple Regression Analyses (continued)

Table Q5

Regression Models Predicting Social Distance from Education Quantity (ED QUANT), Experiential Quality (EX QUAL), and Psychological Inflexibility (AAQ)

Predictors	B	SE B	t	ΔR^2
$SDS_{no\ dx}$				
AAQ	-0.29	0.32	-0.91	0.03
ED QUANT	0.26	0.18	1.44	0.11
EX QUAL	0.38	0.24	1.57	0.07
AAQ × ED QUANT	0.04	0.27	0.14	0.00
AAQ × EX QUAL	-0.23	0.28	-0.81	0.02
ED QUANT × EX QUAL	-0.08	0.20	-0.41	0.00
AAQ × ED QUANT × EX QUAL	0.03	0.36	0.08	0.00
SDS_{dx}				
AAQ	-0.43	0.31	-1.42	0.06
ED QUANT	0.36	0.17	2.08*	0.15
EX QUAL	0.03	0.23	0.13	0.00
AAQ × ED QUANT	0.09	0.26	0.36	0.00
AAQ × EX QUAL	-0.29	0.27	-1.09	0.06
ED QUANT × EX QUAL	0.05	0.19	0.24	0.00
AAQ × ED QUANT × EX QUAL	-0.07	0.35	-0.20	0.00

Note: All variables standardized prior to analysis.
*$p < .10$. **$p < .05$. ***$p < .01$.

Multiple Regression Analyses (continued)

Table Q6

Regression Models Predicting IRAP Scores from Education Quantity (ED QUANT), Experiential Quality (EX QUAL), and Psychological Inflexibility (AAQ)

Predictors	B	SE B	t	ΔR^2
Overall IRAP				
AAQ	0.31	0.36	0.85	0.02
ED QUANT	-0.31	0.21	-1.50	0.14
EX QUAL	-0.01	0.33	-0.05	0.01
AAQ × ED QUANT	-0.07	0.30	-0.24	0.00
AAQ × EX QUAL	0.11	0.34	0.33	0.01
ED QUANT × EX QUAL	-0.14	0.24	-0.57	0.01
AAQ × ED QUANT × EX QUAL	-0.06	0.42	-0.13	0.00

Note: All variables standardized prior to analysis.
*$p < .10$. **$p < .05$. ***$p < .01$.

Multiple Regression Analyses (continued)

Table Q7

Regression Models Predicting Social Distance from Education Quantity (ED QUANT), Experiential Quality (EX QUAL), and Empathic Concern (EC)

Predictors	B	SE B	t	ΔR^2
$SDS_{no\ dx}$				
EC	0.54	0.25	2.14*	0.20
ED QUANT	0.26	0.17	1.53	0.08
EX QUAL	0.17	0.14	0.88	0.03
EC × ED QUANT	-0.03	0.23	-0.13	0.00
EC × EX QUAL	0.06	0.22	0.28	0.00
ED QUANT × EX QUAL	0.11	0.18	0.60	0.00
EC × ED QUANT × EX QUAL	-0.24	0.21	-1.13	0.02
SDS_{dx}				
EC	0.12	0.28	0.43	0.03
ED QUANT	0.34	0.19	1.85	0.17
EX QUAL	-0.02	0.21	-0.12	0.00
EC × ED QUANT	0.17	0.25	0.68	0.01
EC × EX QUAL	0.08	0.24	0.35	0.00
ED QUANT × EX QUAL	0.17	0.20	0.84	0.00
EC × ED QUANT × EX QUAL	-0.32	0.23	-1.35	0.04

Note: All variables standardized prior to analysis.
*p < .10. **p <.05. ***p < .01.

Multiple Regression Analyses (continued)

Table Q8

Regression Models Predicting Social Distance from Education Quantity (ED QUANT), Experiential Quality (EX QUAL), and Fantasy

Predictors	B	SE B	t	ΔR^2
$SDS_{no\ dx}$				
Fantasy	0.05	0.25	0.19	0.00
ED QUANT	0.28	0.14	1.95	0.15
EX QUAL	0.33	0.19	1.79	0.07
Fantasy × ED QUANT	0.09	0.17	0.53	0.01
Fantasy × EX QUAL	0.13	0.20	0.68	0.00
Education quant × EX QUAL	-0.03	0.21	-0.13	0.01
Fantasy × ED QUANT × EX QUAL	-0.17	0.24	-0.70	0.01
SDS_{dx}				
Fantasy	0.07	0.25	0.29	0.00
ED QUANT	0.41	0.14	2.79**	0.21
EX QUAL	-0.00	0.19	-0.02	0.00
Fantasy × ED QUANT	0.05	0.17	0.30	0.02
Fantasy × EX QUAL	0.16	0.20	0.82	0.00
Education quant × EX QUAL	0.14	0.21	0.67	0.00
Fantasy × ED QUANT × EX QUAL	-0.27	0.24	-1.14	0.03

Note: All variables standardized prior to analysis.
*p < .10. **p <.05. ***p < .01.

Multiple Regression Analyses (continued)

Table Q9

Regression Models Predicting Social Distance from Education Quantity (ED QUANT), Experiential Quality (EX QUAL), and Perspective Taking (PT)

Predictors	B	SE B	t	ΔR^2
$SDS_{no\ dx}$				
PT	0.48	0.22	2.15	0.21
ED QUANT	0.18	0.29	0.62	0.02
EX QUAL	0.17	0.21	0.82	0.03
PT × ED QUANT	-0.05	0.21	-0.25	0.00
PT × EX QUAL	-0.05	0.2	-0.23	0.00
ED QUANT × EX QUAL	-0.01	0.23	-0.03	0.00
PT × ED QUANT × EX QUAL	-0.01	0.21	-0.07	0.00
$SDS_{d\times}$				
PT	0.25	0.24	1.04	0.06
ED QUANT	0.27	0.31	0.85	0.10
EX QUAL	-0.12	0.23	-0.54	0.00
PT × ED QUANT	0.00	0.23	0.01	0.00
PT × EX QUAL	-0.28	0.21	-1.30	0.04
ED QUANT × EX QUAL	0.10	0.24	0.43	0.01
PT × ED QUANT × EX QUAL	0.07	0.22	0.30	0.00

Note: All variables standardized prior to analysis.

*$p < .10$. **$p < .05$. ***$p < .01$.

Multiple Regression Analyses (continued)

Table Q10

Regression Models Predicting Social Distance from Education Quantity (ED QUANT), Experiential Quality (EX QUAL), and Personal Distress (PD)

Predictors	B	SE B	t	ΔR^2
$SDS_{no\ dx}$				
PD	-0.40	0.29	-1.40	0.09
ED QUANT	0.29	0.23	1.26	0.09
EX QUAL	0.14	0.23	0.61	0.03
PD × ED QUANT	0.19	0.28	0.67	0.01
PD × EX QUAL	-0.07	0.24	-0.29	0.00
ED QUANT × EX QUAL	0.06	0.21	0.27	0.00
PD × ED QUANT × EX QUAL	0.01	0.23	0.04	0.00
SDS_{dx}				
PD	-0.06	0.30	-0.20	0.01
ED QUANT	0.31	0.24	1.28	0.18
EX QUAL	-0.12	0.24	-0.51	0.00
PD × ED QUANT	-0.03	0.29	-0.11	0.00
PD × EX QUAL	0.14	0.25	0.56	0.00
ED QUANT × EX QUAL	0.12	0.22	0.55	0.01
PD × ED QUANT × EX QUAL	-0.11	0.25	-0.45	0.00

Note: All variables standardized prior to analysis.
*$p < .10$. **$p < .05$. ***$p < .01$.

Multiple Regression Analyses (continued)

Table Q11

Regression Models Predicting CAMI Scores from Education Quantity (ED QUANT), Experiential Quality (EX QUAL), and Empathic Concern (EC)

Predictors	B	SE B	t	ΔR^2
CAMI Authoritarianism				
EC	-0.10	0.28	-0.38	0.02
ED QUANT	-0.17	0.18	-0.93	0.08
EX QUAL	-0.03	0.21	-0.14	0.02
EC × ED QUANT	-0.11	0.25	-0.44	0.01
EC × EX QUAL	0.13	0.24	0.53	0.04
ED QUANT × EX QUAL	-0.42	0.20	-2.09*	0.05
EC × ED QUANT × EX QUAL	0.37	0.23	1.59	0.06
CAMI Benevolence				
EC	0.23	0.29	0.79	0.05
ED QUANT	0.20	0.19	1.03	0.10
EX QUAL	0.15	0.21	0.86	0.06
EC × ED QUANT	0.02	0.26	0.09	0.00
EC × EX QUAL	-0.15	0.24	-0.61	0.02
ED QUANT × EX QUAL	0.24	0.21	1.13	0.02
EC × ED QUANT × EX QUAL	-0.14	0.24	-0.57	0.01
CAMI Social Restrictiveness				
EC	-0.03	0.23	-0.12	0.03
ED QUANT	-0.23	0.15	-1.54	0.20
EX QUAL	-0.10	0.17	-0.61	0.01
EC × ED QUANT	-0.16	0.20	-0.77	0.00
EC × EX QUAL	0.37	0.19	1.92	0.12
ED QUANT × EX QUAL	-0.08	0.16	-0.51	0.00
EC × ED QUANT × EX QUAL	0.06	0.19	0.33	0.00

Table Q11 Continued

Predictors	B	SE B	t	ΔR^2
CAMI CMHI				
EC	0.06	0.29	0.22	0.10
ED QUANT	-0.15	0.19	-0.77	0.00
EX QUAL	0.26	0.22	1.19	0.03
EC × ED QUANT	0.31	0.26	1.21	0.02
EC × EX QUAL	-0.19	0.25	-0.78	0.04
ED QUANT × EX QUAL	0.00	0.21	0.02	0.00
EC × ED QUANT × EX QUAL	-0.08	0.24	-0.35	0.00
CAMI Total				
EC	-0.12	0.26	-0.46	0.06
ED QUANT	-0.14	0.17	-0.81	0.10
EX QUAL	-0.17	0.20	-0.84	0.04
EC × ED QUANT	-0.18	0.24	-0.76	0.01
EC × EX QUAL	0.26	0.23	1.13	0.07
ED QUANT × EX QUAL	-0.23	0.19	-1.20	0.02
EC × ED QUANT × EX QUAL	0.20	0.22	0.91	0.02

Note: All variables standardized prior to analysis.

*$p < .10$. **$p < .05$. ***$p < .01$.

Multiple Regression Analyses (continued)

Table Q12

Regression Models Predicting CAMI Scores from Education Quantity (ED QUANT), Experiential Quality (EX QUAL), and Fantasy

Predictors	B	SE B	t	ΔR^2
CAMI Authoritarianism				
Fantasy	-0.38	0.25	-1.52	0.04
ED QUANT	-0.18	0.14	-1.22	0.09
EX QUAL	-0.09	0.19	-0.50	0.04
Fantasy × ED QUANT	0.08	0.17	0.47	0.00
Fantasy × EX QUAL	-0.20	0.20	-1.03	0.02
ED QUANT × EX QUAL	-0.32	0.21	-1.48	0.03
Fantasy × ED QUANT × EX QUAL	0.26	0.24	1.10	0.03
CAMI Benevolence				
Fantasy	0.49	0.23	2.11*	0.10
ED QUANT	0.19	0.14	1.43	0.11
EX QUAL	0.30	0.18	1.71	0.11
Fantasy × ED QUANT	-0.07	0.16	-0.44	0.00
Fantasy × EX QUAL	0.23	0.18	1.22	0.02
ED QUANT × EX QUAL	0.18	0.20	0.88	0.00
Fantasy × ED QUANT × EX QUAL	-0.20	0.23	-0.89	0.01
CAMI Social Restrictiveness				
Fantasy	-0.10	0.22	-0.44	0.01
ED QUANT	-0.34	0.13	-2.71*	0.23
EX QUAL	-0.15	0.16	-0.90	0.02
Fantasy × ED QUANT	-0.05	0.15	-0.32	0.00
Fantasy × EX QUAL	-0.04	0.17	-0.23	0.00
ED QUANT × EX QUAL	-0.00	0.19	-0.01	0.00
Fantasy × ED QUANT × EX QUAL	0.07	0.21	0.35	0.00

Table Q12 Continued

Predictors	B	SE B	t	ΔR^2
CAMI CMHI				
Fantasy	-0.04	0.27	-0.17	0.00
ED QUANT	0.05	0.15	0.30	0.01
EX QUAL	0.28	0.20	1.38	0.05
Fantasy × ED QUANT	0.16	0.18	0.87	0.03
Fantasy × EX QUAL	0.11	0.21	0.54	0.00
ED QUANT × EX QUAL	-0.08	0.23	-0.37	0.01
Fantasy × ED QUANT × EX QUAL	-0.03	0.26	-0.12	0.00
CAMI Total				
Fantasy	-0.28	0.24	-1.14	0.04
ED QUANT	-0.23	0.14	-1.67	0.13
EX QUAL	-0.24	0.18	-1.31	0.07
Fantasy × ED QUANT	-0.01	0.17	-0.09	0.01
Fantasy × EX QUAL	-0.17	0.19	-0.91	0.01
ED QUANT × EX QUAL	-0.13	0.21	-0.62	0.00
Fantasy × ED QUANT × EX QUAL	0.17	0.23	0.74	0.01

Note: All variables standardized prior to analysis.

*p < .10. **p <.05. ***p < .01.

Multiple Regression Analyses (continued)

Table Q13

Regression Models Predicting CAMI Scores from Education Quantity (ED QUANT), Experiential Quality (EX QUAL), and Perspective Taking (PT)

Predictors	B	SE B	t	ΔR^2
CAMI Authoritarianism				
PT	-0.36	0.22	-1.60	0.22
ED QUANT	0.05	0.29	0.18	0.01
EX QUAL	-0.06	0.21	-0.29	0.01
PT × ED QUANT	-0.17	0.21	-0.78	0.05
PT × EX QUAL	-0.10	0.20	-0.50	0.00
ED QUANT × EX QUAL	-0.23	0.23	-1.00	0.01
PT × ED QUANT × EX QUAL	0.19	0.21	0.91	0.02
CAMI Benevolence				
PT	0.21	0.23	0.89	0.17
ED QUANT	-0.16	0.31	-0.53	0.02
EX QUAL	0.31	0.22	1.39	0.04
PT × ED QUANT	0.24	0.22	1.09	0.03
PT × EX QUAL	-0.07	0.21	-0.35	0.00
ED QUANT × EX QUAL	0.00	0.24	0.00	0.00
PT × ED QUANT × EX QUAL	0.02	0.22	0.09	0.00
CAMI Social Restrictiveness				
PT	-0.18	0.19	-0.97	0.17
ED QUANT	0.04	0.25	0.18	0.07
EX QUAL	-0.16	0.18	-0.92	0.00
PT × ED QUANT	-0.24	0.18	-1.37	0.01
PT × EX QUAL	0.16	0.17	0.98	0.03
ED QUANT × EX QUAL	0.09	0.19	0.49	0.00
PT × ED QUANT × EX QUAL	-0.02	0.17	-0.11	0.00

Table Q13 Continued

Predictors	B	SE B	t	ΔR^2
CAMI CMHI				
PT	0.41	0.24	1.73	0.26
ED QUANT	-0.25	0.31	-0.80	0.01
EX QUAL	0.18	0.22	0.79	0.01
PT × ED QUANT	0.10	0.22	0.47	0.00
PT × EX QUAL	-0.14	0.21	-0.66	0.02
ED QUANT × EX QUAL	0.03	0.24	-0.13	0.00
PT × ED QUANT × EX QUAL	0.00	0.22	-0.03	0.00
CAMI Total				
PT	-0.35	0.20	-1.69	0.28
ED QUANT	0.15	0.27	0.54	0.01
EX QUAL	-0.21	0.19	-1.06	0.02
PT × ED QUANT	-0.23	0.19	-1.17	0.03
PT × EX QUAL	0.08	0.18	0.43	0.01
ED QUANT × EX QUAL	-0.03	0.21	-0.17	0.00
PT × ED QUANT × EX QUAL	0.05	0.19	0.27	0.00

Note: All variables standardized prior to analysis.
*$p < .10$. **$p < .05$. ***$p < .01$.

Multiple Regression Analyses (continued)

Table Q14

Regression Models Predicting CAMI Scores Education Quantity (ED QUANT), Experiential Quality (EX QUAL), and Personal Distress (PD)

Predictors	B	SE B	t	ΔR^2
CAMI Authoritarianism				
PD	0.46	0.30	1.56	0.03
ED QUANT	-0.42	0.23	-1.78	0.07
EX QUAL	-0.06	0.24	-0.27	0.02
PD × ED QUANT	-0.31	0.29	-1.09	0.01
PD × EX QUAL	0.42	0.25	1.70	0.04
ED QUANT × EX QUAL	-0.20	0.21	-0.97	0.03
PD × ED QUANT × EX QUAL	-0.28	0.24	-1.17	0.03
CAMI Benevolence				
PD	-0.03	0.30	-0.10	0.00
ED QUANT	0.40	0.24	1.64	0.13
EX QUAL	0.25	0.24	1.01	0.10
PD × ED QUANT	0.20	0.29	0.67	0.00
PD × EX QUAL	-0.04	0.25	-0.15	0.01
ED QUANT × EX QUAL	0.13	0.22	0.58	0.01
PD × ED QUANT × EX QUAL	0.19	0.25	0.75	0.01
CAMI Social Restrictiveness				
PD	0.53	0.24	2.21*	0.02
ED QUANT	-0.67	0.19	-3.51**	0.19
EX QUAL	-0.09	0.19	-0.47	0.01
PD × ED QUANT	-0.45	0.23	-1.92	0.01
PD × EX QUAL	0.44	0.20	2.18*	0.02
ED QUANT × EX QUAL	0.00	0.17	-0.01	0.00
PD × ED QUANT × EX QUAL	-0.40	0.19	-2.07*	0.08

Table Q14 Continued

Predictors	B	SE B	t	ΔR^2
CAMI CMHI				
PD	-0.10	0.32	-0.32	0.00
ED QUANT	0.11	0.26	0.45	0.01
EX QUAL	0.16	0.26	0.61	0.05
PD × ED QUANT	0.19	0.31	0.60	0.01
PD × EX QUAL	0.02	0.27	0.08	0.00
ED QUANT × EX QUAL	0.05	0.23	0.23	0.00
PD × ED QUANT × EX QUAL	0.06	0.26	0.23	0.03
CAMI Total				
PD	0.36	0.29	1.22	0.01
ED QUANT	-0.49	0.23	-2.10*	0.11
EX QUAL	-0.16	0.24	-0.69	0.05
PD × ED QUANT	-0.35	0.28	-1.23	0.00
PD × EX QUAL	0.28	0.24	1.14	0.00
ED QUANT × EX QUAL	-0.12	0.21	-0.56	0.01
PD × ED QUANT × EX QUAL	-0.29	0.24	-1.20	0.03

Note: All variables standardized prior to analysis.

*$p < .10$. **$p < .05$. ***$p < .01$.

Multiple Regression Analyses (continued)

Table Q15

Regression Models Predicting IRAP Scores Education Quantity (ED QUANT), Experiential Quality (EX QUAL), and Fantasy

Predictors	B	SE B	t	ΔR^2
Overall IRAP				
Fantasy	0.46	0.26	1.75	0.07
ED QUANT	-0.29	0.15	-1.87	0.18
EX QUAL	0.29	0.28	1.06	0.00
Fantasy × ED QUANT	-0.14	0.17	-0.82	0.03
Fantasy × EX QUAL	-0.36	0.31	-1.14	0.01
Education quant × EX QUAL	-0.37	0.29	-1.28	0.01
Fantasy × ED QUANT × EX QUAL	0.34	0.33	1.05	0.03

Note: All variables standardized prior to analysis.
*$p < .10$. **$p < .05$. ***$p < .01$.

Multiple Regression Analyses (continued)

Table Q16

Regression Models Predicting IRAP Scores from Education Quantity (ED QUANT), Experiential Quality (EX QUAL), and Empathic Concern (EC)

Predictors	B	SE B	t	ΔR^2
Overall IRAP				
EC	-0.67	0.31	-2.17*	0.03
ED QUANT	-0.46	0.19	-2.42*	0.14
EX QUAL	0.10	0.23	0.43	0.00
EC × ED QUANT	0.49	0.28	1.75	0.03
EC × EX QUAL	0.79	0.33	2.39*	0.07
ED QUANT × EX QUAL	-0.03	0.24	-0.12	0.05
EC × ED QUANT × EX QUAL	-0.49	0.33	-1.48	0.05

Note: All variables standardized prior to analysis.
*$p < .10$. **$p < .05$. ***$p < .01$.

Multiple Regression Analyses (continued)

Table Q17

Regression Models Predicting IRAP Scores from Education Quantity (ED QUANT), Experiential Quality (EX QUAL), and Perspective Taking (PT)

Predictors	B	SE B	t	ΔR^2
Overall IRAP				
PT	-0.07	0.26	-0.26	0.01
ED QUANT	-0.42	0.30	-1.39	0.18
EX QUAL	0.25	0.26	0.99	0.01
PT × ED QUANT	0.16	0.23	0.71	0.00
PT × EX QUAL	0.72	0.30	2.41*	0.15
ED QUANT × EX QUAL	-0.26	0.26	-1.03	0.07
PT × ED QUANT × EX QUAL	-0.21	0.28	-0.75	0.01

Note: All variables standardized prior to analysis.
*$p < .10$. **$p < .05$. ***$p < .01$.

Multiple Regression Analyses (continued)

Table Q18

Regression Models Predicting IRAP Scores Education Quantity (ED QUANT), Experiential Quality (EX QUAL), and Personal Distress (PD)

Predictors	B	SE B	t	ΔR^2
Overall IRAP				
PD	-0.26	0.28	-0.92	0.00
ED QUANT	-0.09	0.23	-0.38	0.17
EX QUAL	0.35	0.29	1.20	0.01
PD × ED QUANT	0.20	0.26	0.76	0.00
PD × EX QUAL	-0.69	0.25	-2.69*	0.17
ED QUANT × EX QUAL	-0.29	0.23	-1.28	0.03
PD × ED QUANT × EX QUAL	0.26	0.23	1.10	0.03

Note: All variables standardized prior to analysis.
*$p < .10$. **$p < .05$. ***$p < .01$.

Multiple Regression Analyses (continued)

Table Q19

Regression Models Predicting CAMI Scores from Inflexibility (AAQ) and Overall IRAP

Predictors	B	SE B	t	ΔR^2
CAMI Authoritarianism				
AAQ	-0.01	0.11	-0.09	0.00
Overall IRAP	-0.05	0.11	-0.44	0.00
AAQ × Overall IRAP	-0.08	0.09	-0.96	0.01
CAMI Benevolence				
AAQ	-0.01	0.11	-0.08	0.00
Overall IRAP	-0.09	0.11	-0.88	0.01
AAQ × Overall IRAP	0.07	0.09	0.79	0.01
CAMI Social Restrictiveness				
AAQ	0.02	0.11	0.18	0.00
Overall IRAP	0.04	0.11	0.40	0.00
AAQ × Overall IRAP	-0.08	0.09	-0.96	0.01
CAMI CMHI				
AAQ	0.12	0.11	1.16	0.02
Overall IRAP	-0.19	0.11	-1.76	0.03
AAQ × Overall IRAP	0.13	0.09	1.57	0.03
CAMI Total				
AAQ	-0.03	0.11	-0.27	0.02
Overall IRAP	0.08	0.11	0.71	0.00
AAQ × Overall IRAP	-0.11	0.09	-1.24	0.01

Note: All variables standardized prior to analysis.
*p < .10. **p <.05. ***p < .01.

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ABSTRACT

Mental health stigma, while common, leads to harmful consequences. There is some evidence to show that education reduces stigma. The reduction, however, is short term and only observed in those who are relatively open and flexible with their beliefs. Emerging research suggests that variables such as empathy, perspective taking, and psychological flexibility may be key processes in stigma reduction. Relational Frame Theory (RFT) provides a framework for understanding the development of stigma, the role of inflexibility in maintenance of stigma, and how education that targets flexibility might facilitate reduction in stigma. Applications of RFT have resulted in the development of the Implicit Relational Assessment Procedure, a tool that can be applied for assessment of not only implicit stigmatizing attitudes, but also the flexibility with which they are held. The current study examined the impact of divergent educational experiences on mental health stigma using college students with various levels of formal education relevant to psychological difficulties both implicitly with self-report measures and explicitly with the IRAP. Also examined were empathy and psychological flexibility as moderators of the relationship between education and stigma. Data suggest that mental health bias is a function of education, but that didactic and experiential education may have differential effects. Increases in education and empathy factors were associated with reduced stigma measured explicitly; however, these variables did not correlate with the measure of implicit stigma. Additionally, when empathy moderated

the relationship between education and implicit stigma, high levels of empathy were associated with increases in implicit stigma. Inconsistencies in results from implicit and explicit measures indicate a clear need for continued research in this area to more fully understand mental health stigma and to develop reduction interventions.

Biographical Sketch

Sunni Primeaux grew up in south Louisiana with her family. She graduated with a Bachelor of Science from the University of Louisiana at Lafayette and is currently pursuing a Master of Science in Applied Psychology at the same university. She will soon be working toward a doctorate in Clinical Psychology at Southern Illinois University Carbondale, after which she hopes to continue her passion for research, teaching, and applied work in Psychology. In her spare time, Sunni enjoys spending time with her family and her two dogs.