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# Mental Illness Labeling in Justice-Involved People

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## Dedication

To my parents, Joe and Becky: I will never forget the support you have shown me during my graduate schooling. Making you proud is my biggest drive. To my siblings, Ryan, Angie, Maria and Ava, I win. Mostly kidding, you guys are the best and I credit you all for your help, open ears and uplifting talks to when I got overwhelmed. To Johnny, you've been wonderfully supportive throughout my stressful days, and I couldn't have asked for more. I love and appreciate you all!

# MENTAL ILLNESS LABELING IN JUSTICE-INVOLVED PEOPLE

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## Abstract

While it cannot be denied that there is a strong correlational relationship between justice-involvement and mental illness, research has demonstrated that severe mental illness is rarely the direct cause of criminal activity. However, stigmatizing attitudes towards people with mental illness are often rooted in incorrect generalizations regarding the link between mental illness and unpredictable, dangerous behavior, which can be magnified by labels (e.g., "schizophrenic" or "criminal"). This reduction of a person to a label results in a number of negative outcomes, ranging from the prejudice and inequitable treatment one may experience from groups such as justice workers, police, and employers or landlords, to internalized stigma against oneself. A total of 242 participants recruited from Amazon's CloudResearch platform were assigned to one of three information conditions (label of a disorder, symptom description and a combination) and shown a series of four vignettes reflecting Major Depressive Disorder, Bipolar 1, Schizophrenia and a control condition of a troubled person. Stigma was measured using the Social Distance Scale, the Perceived Dangerousness of Mental Patients Scale and a created measure of willingness to mandate treatment. Additionally, we added covariates to the model such as the level of contact participants have had with both people with severe mental illness or justice-involvement, the rating of those contacts and knowledge of mental illness. Findings indicate a difference in stigmatizing attitudes by disorder, with interactive effects of the type of information presented. Having positive prior contact with people in both groups tended to mitigate stigma ratings, as did a greater knowledge of mental illness.

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## Chapter 1: Introduction

Stigmatizing attitudes are often applied to people who we deem different. Two groups that are particularly vulnerable to being on the receiving end of stigma are people with severe mental illness and those who are justice-involved (Chaimowitz et al., 2021; Link et al., 1987; Link & Phelan, 2001; Penn et al., 1994). A disproportionate prevalence of mental illness in the justice system has been documented for decades and has contributed to a number of misconceptions and myths becoming widely accepted by the public (Kim et al., 2015; Office of Justice Programs 2010). Some have considered this disproportionate presence of mental illness in correctional facilities to be so striking that they have now dubbed the justice system as the "nation's largest mental health institution" (Al-Rousan et al., 2017). While it cannot be denied that there is a strong correlational relationship between justice-involvement and mental illness (Scanlon et al., 2021; Teplin,1984), research has demonstrated that severe mental illness is rarely the direct cause of criminal activity, especially violent crime (Fazel et al., 2006; Peterson et al., 2014; Wehring & Carpenter, 2011). However, stigmatizing attitudes towards people with mental illness are often rooted in incorrect generalizations regarding the link between mental illness and unpredictable, dangerous behavior (Link et al., 1999; Oliveira et al., 2015), which can be magnified by labels (e.g., "schizophrenic" or "criminal") (Thorsell & Klemke, 1972). This reduction of a person to a singular label results in a number of negative outcomes, ranging from the prejudice and inequitable treatment one may experience from others (Socall & Holtgraves, 1992) to internalized stigma against oneself (West et al., 2015).

Stigma derived from a label, also known as the labeling effect, can impact both justice-involved people and those with mental illness in several domains. The negative impacts of labeling include inequitable treatment by legal decisionmakers (Davidson & Rosky, 2014; Hall

et al., 2019; Stroud, 2018), difficulty finding jobs and housing (Batastini et al., 2014; Norman et al., 2008), straining of social relationships, and worsening of self-esteem and symptomology (Corrigan & Rao, 2012; Moore et al., 2018). While research on labeling has been influential in combatting stigma of justice-involvement and mental illness, few studies have considered the compounded impact of having both labels, although it has been proposed that having multiple stigmatized identities intersect may lead to a unique experience of stigma (Benbow et al., 2011; Oexle & Corrigan, 2018).

The current study seeks to measure the effect of various presentations of mental illness information on eliciting stigmatizing attitudes from the public. While research on labeling theory has demonstrated a powerful, primarily harmful effect of labels on stigmatizing attitudes in populations with mental illness regardless of justice-involvement, little research has been done to discern whether there is a better way to discuss severe mental illness without evoking such negative reactions (Angermeyer & Matschinger, 2003; Penn et al., 1994). To do so, we compared different ways to discuss information regarding the three severe mental illnesses to the public. The first is to only provide a label of the disorder. The second method is to describe the symptomology being experienced to a clinical level, without offering a label of the disorder. The third is to provide both symptom information as well as its associated diagnostic label. Examining participants' stigmatizing attitudes in response to these different types of information may help shed light on how we may limit the negative effects that our words may have on justice-involved people with mental illness.

Additionally, we sought to identify factors that may mitigate the stigma of these groups. Specifically, the effect of familiarity with individuals with mental illness or a criminal history and mental illness knowledge. Before we detail the methodology of the current study, we first

discuss labeling theories, describe the disorders of severe mental illness, consider the application of mental illness labeling to the criminal justice system, and lastly, review ways in which stigma may be reduced in justice-involved people with mental illness.

## Labeling Theories

### *Labeling Theory*

Labeling theory first became prominent in the 1960's when sociologist Howard Becker published his novel, 'The Outsiders'. In this novel he proposed that labeling someone as deviant can in itself produce deviant behavior (Fine, 1977). When one's behavior is perceived to be noncompliant with group rules, that group is likely to apply the label of "deviant". However, such deviancy may not be a quality of the person, but only a quality of the person's behavior. For example, one who uses elicit substances is not a bad person simply for using them. But, because the act is seen as deviant, and because they have done that act, they are labelled as being deviant.

Since its inception, labeling theory has been applied to any number of labels that produce stereotyping effects, which can be either constructive or detrimental (Schrag, 1978). Just as the label of 'doctor' may elicit a sense of trust or respect, the label of 'criminal' or 'schizophrenic' may lead to fear and avoidance. The effect of labeling has even been proposed to be so severe that it can cause mental illness (Scheff, 1974). However, the tendency of labeling theorists to downplay the effect that stigma (feelings of disapproval about certain traits, qualities, or people) and stereotyping (overgeneralized and possibly incorrect assumptions about groups) have on future behavior of labelled individuals led to the development of the modified labeling theory (Link et al., 1989).

### *Modified Labeling Theory*

Modified labeling theory proposes that while the label itself carries a significant amount of power, it is the stereotype that is associated with the label that actually produces the emotion that leads to differential treatment and internalization of the label (Link et al., 1989). The modified labeling theory (MLT) as it applies to mental illness follows a five-step model (Link et al., 1989). The first step is society holding misconceptions and negative stereotypes about labels of various mental illnesses, which leads to step two, a label becoming part of the self-concept of a labelled person. Third is the reaction by the labelled individual, which may include behaviors such as hiding the label and its related experiences or isolating to avoid social interaction. Fourth is the effect that the label has on the labelled person, such as a decrease in their self-esteem or experiences of discrimination. Lastly, the labelled individual becomes vulnerable to negative outcomes such as worsening symptomology or susceptibility to new mental illnesses due to the negative experiences that came from the label. Overall, this process involves the application of society's preconceived notions and beliefs upon people in an out-group (in this case people with mental illness), which then results in devaluation and marginalization of those individuals (Link et al., 1989). This prejudicial treatment is what leads to the internalization of one's label as their identity, rather than a single trait that does not define them (Link et al., 1989; Livingston & Boyd, 2010).

Some groups have begun to advocate for alternative ways to discuss people who have various diagnoses, disabilities, or conditions. One of the more popular movements has been the use of person-first language (Vivanti, 2019). When discussing people using such language, one would simply place the person before the label, rather than the label before the person (Crocker & Smith, 2019). For example, rather than saying "that is a schizophrenic person", the order

would be adjusted to “that is a person with schizophrenia”. The intention behind this is to indicate that a person has a diagnosis, but that the diagnosis is not their entire identity (Crocker &Smith, 2019; Vivanti, 2019). Although this speech has been advocated for across many domains insofar that the American Psychological Association promotes the use of such language in their publication manuals (2010), some research has found that person-first language may attenuate the stigmatizing effect of a label (Gernsbacher, 2017). Using person-first language has been proposed to indicate shame rather than equality (Jernigan, 2009) and reinforce ideas that it is bad to be disabled (La Forge, 1991). This response is consistent with that of the autism community, where autistic respondents feel othered by the use of person-first language and prefer the use of “identity first language” (Organization for Autism Research, 2020). An example of identity first language in this context would be “autistic person”, rather than “a person with autism”. Another promoted term is “consumers of mental health services”, which was found to reduce emotional reactions (Penn & Nowlin-Drummond, 2001). However, the authors note that while it elicits fewer negative attitudes, it may come at the price of assigning greater responsibility of the mental illness onto the person, as well as leaving out information about specific disorders that may be important.

There has also been a small body of work examining how information about behavior compares to label information in terms of stigmatization. One study found that when offering participants a vignette describing various levels of “bad behavior” during an angry outburst, stigma was not increased when the vignette alluded to the individual having previously received mental health services (Link et al., 1987). Rather, the increase in objectionable behavior itself (e.g., throwing things and making threats to coworkers) was the only factor leading to significant differences in ratings of social distance. Penn and colleagues found that when provided with

behaviors associated with the acute phase of schizophrenia, participants tended to rate vignettes as more dangerous and that they would prefer to keep a greater distance as compared to vignettes explicitly labeled as having schizophrenia (Penn et al., 1994). A similar pattern has been shown for bipolar disorder (Wolkenstein & Meyer, 2010). Yet, more recent studies have demonstrated that when unlabeled behaviors are thought to be due to mental illness, participants tend to rate vignettes as more dangerous (Angermeyer et al., 2003; Angermeyer & Matschinger, 2003; Martin et al., 2000). Although these studies are helpful in guiding research regarding stigma, the body of literature regarding labeling mental illness as compared to providing information about behaviors and symptomology has been limited in more recent years. This is especially important as we consider the changes in accessibility to mental health information and discussion across media platforms in the 21st century (Martini et al., 2018; Reavley & Jorm, 2011)

## Characteristics and Myths of Severe Mental Illness

To fully appreciate the link between mental illness and stigma, it is important to first understand the symptomology and presentations of specific disorders. The following discussion of psychiatric disorders and their symptoms is based upon the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5), which is a guide used by practitioners and researchers in the United States (American Psychiatric Association, 2013).

### *Characteristics*

While many disorders of mental health hold negative associations, the Big 3 disorders of severe mental illness are typically given the most attention by both researchers and the public (Hinshaw & Stier, 2008). The National Institute of Mental Health (NIMH) categorizes schizophrenia, severe major depression, severe bipolar disorder as the Big 3 Disorders of severe mental illness (SMI) (Substance Abuse and Mental Health Services Administration, 2009).

Disorders of severe mental illness result in serious impairment, which significantly interfere with one or more areas of life, such as work or relationships. In the research context, these three disorders are given a great deal of attention due to how much they can impact daily functioning and safety, and in the public, they are some of the most misunderstood and feared diagnoses (Oliveira et al., 2015). However, with fear also comes interest, which makes these disorders appealing to discuss in settings such as film, which can create the illusion of knowledge to consumers of such media (Perciful & Meyer, 2017).

Considering these three disorders individually is important to understand the different attitudes each elicits. For example, media content analyses find that schizophrenia and bipolar disorder are most prevalent in film and television due to their severity, and they are often presented in a violent context (Diefenbach & West, 2007). The different ways that these disorders are presented can influence the stigma members of the public adopt, therefore measuring attitudes towards each disorder individually can help us gain more precise understanding as to where stigma may be most prevalent.

**Major Depressive Disorder.** Major depressive disorder (MDD) is a mood disorder that is characterized by either a depressed mood or a loss of interest or pleasure in activities that one usually finds joy in (American Psychiatric Association, 2013). Beyond these two core symptoms, at least four secondary symptoms are required. Secondary symptoms include difficulties with concentration, feelings of guilt or worthlessness, weight loss or gain, excessive sleep or difficulty falling or staying asleep and recurrent thoughts of death or suicide. These symptoms must be present most of the day, nearly every day for a two-week period to reach clinical threshold. Additionally, the experience must be severe enough to cause clinically significant distress, impairment in social and/or occupational settings or warrant hospitalization

due to being a danger to oneself or others. Individuals who experience MDD to an extreme level may have difficulty managing basic daily activities such as getting out of bed, washing oneself or preparing and eating meals. The inability to bring oneself to do these things can result in a loss of employment due to failure to attend or lack of productivity at work. Additionally, those experiencing MDD may have urges to self-harm or attempt suicide when symptomatic.

**Bipolar 1 Disorder.** Bipolar 1 Disorder (referred to as bipolar disorder hereafter) is in the Bipolar family of disorders, which are characterized by the experience of mania (American Psychiatric Association, 2013). Mania, or manic episodes, is defined by weeklong periods of an abnormally elevated, excited, or irritable mood. To reach the clinical threshold for bipolar disorder, three or more symptoms of mania must be present, which include inflated self-esteem, decreased need for sleep, pressured speech (talking significantly faster than usual and a pervasive need to share thoughts), racing thoughts, and the involvement in activities that are likely to have negative consequences. As is the case with MDD, individuals must be experiencing manic symptoms to a clinically significant degree, show marked impairment in various domains of life, or be a danger to themselves or others leading to hospitalization to reach a clinical threshold of bipolar disorder. It is common for those experiencing bipolar disorder to find themselves in financial predicaments due to excessive spending urges during manic episodes, have conflict with friends, family, or employers due to their behavior while manic, and exhibit impulsive self-harming behaviors (Weintraub et al., 2017). Although the label bipolar disorder infers the experience of both sides of the mood spectrum, episodes of depression are not required to diagnose. However, the experience of a depressive episode following a manic episode is common, affecting around 30-50% of people with bipolar disorder (Tondo & Baldessarini, 2016).

**Schizophrenia.** Schizophrenia is a disorder of psychosis, which is defined by perceptual abnormalities and a loss of touch with reality (American Psychiatric Association, 2013). There are three core symptoms defining schizophrenia, and at least one must be present to reach clinical threshold. The first is the presence of hallucinations, which are defined as perceptual disturbances to the five senses (visual, auditory, tactile, olfactory, and gustatory). The second core symptom in schizophrenia is the experience of delusions, or beliefs that one maintains even when presented with contradictory evidence. The third core symptom of schizophrenia is disorganized speech. There are multiple presentations of disorganized speech, including a pattern that is difficult for others to follow, confusion while talking or the use of words that are not real (Kuperberg, 2010). Each of these three core symptoms are "positive" symptoms, which are pathological due to their presence. In contrast, there are "negative" secondary symptoms, which are pathological due to the absence of normative experiences. This includes catatonic behavior (lack of movement, responsiveness, or muscle rigidity), avolition (lack of motivation) and blunt affect (lack of emotional experience or displays). To reach clinical criteria for schizophrenia, one must experience one or more secondary symptoms in addition to their core symptom(s) to a clinically significant level (American Psychiatric Association, 2013). Psychosis is a term closely related to schizophrenia, and is the experience of hallucinations, delusions, or disorganized speech, but may not be full blown schizophrenia. Some researchers use psychosis rather than schizophrenia in research as it encapsulates more participants who are experiencing these symptoms (National Collaborating Centre for Mental Health (UK), 2014).

### *Myths*

Although there are numerous resources available to the public to learn more about these disorders, myths remain widespread and continue to perpetuate stigma (Benbow et al., 2011;

Corrigan et al., 2005; Klin & Lemish, 2008). There is no single avenue on which we can place all the blame on, however the media and works of fiction seem to be top contenders in spreading misleading information that may worsen stigma. Entertainment writers often exclude the more "common" mental illnesses, such as depression and anxiety, as they can be seen as less dramatic in comparison (Klin & Lemish, 2008). Overrepresentation of extreme cases of SMI in media can skew the viewers' perceptions of how the disorder may most commonly present by depicting people with SMI as violent or childlike (Klin & Lemish, 2008; Signorielli, 1989; Wahl, 1992), as well as associating such disorders with words like "crazy" and "psycho" (Wahl, 2003).

In the case of MDD, one of the biggest downfalls of the public perception is the underestimation of who the disorder affects and the consequences that it has on people's lives (Gieselman & Curtis, 2017; UnityPoint Health- Des Moines, 2018). This includes beliefs that the disorder is all in one's head, that by simply changing your thoughts you can fix any symptoms, that the experience of depression is normal and those that pursue treatment are being dramatic or attention-seeking, or that depression is just an excuse for someone to be lazy for extended periods of time. Many believe that depression only affects women, that it must stem from a negative or traumatic event, or that it can only be fixed through medication. Feeling misunderstood or judged can result in the person with MDD becoming uncomfortable disclosing their struggles to others in fear of being met with rejection or further judgement. Eventually this may lead to lower self-esteem and social avoidance, including help seeking, which can in turn worsen the progression of the disorder (Franck & Raedt, 2007; Roeloffs et al., 2003).

Bipolar disorder is at high risk for being misunderstood. One misconception about bipolar disorder is that it is a consistent shifting from mania to depression with no baseline experience in between (Ghaemi & Dalley, 2014). Research has also found that the public tends

to confuse bipolar disorder with borderline personality disorder, which is characterized by a lack of self-identify leading to an extreme reliance on others for a sense of self-worth (American Psychiatric Association, 2013; Kuiper et al., 2012). Although the two disorders have emotional and behavioral dysregulation in common, personality disorders are inherently stable and more difficult to treat, so confusing these two disorders can worsen people's perceptions of bipolar disorder's prognosis (Kuiper et al., 2012). Other stigmatizing myths include the minimizing idea that bipolar disorder is a label for mood swings rather than a pathology, that mania is a positive experience due to the common experience of goal-directed behaviors and increased energy, that people experiencing mania should be hospitalized as they are at risk for destructive behaviors, or that people with bipolar disorder are very often violent, aggressive and unpredictable (Robinson, 2019; Wolkenstein & Meyer, 2010).

Schizophrenia could be argued to be the most stigmatized of the three severe mental illnesses. Misconceptions regarding schizophrenia are plentiful, primarily driven by media representations of the disorder that are often unable to be corrected by real life experience with the disorder due to its relatively low prevalence (American Psychiatric Association, 2013; Owen, 2007; Perciful & Meyer, 2016). Researchers have found that in both content analyses and qualitative studies asking participants to describe schizophrenia, delusions, hallucinations, and bizarre or disorganized behavior were the most common themes despite negative symptoms and basic auditory hallucinations being most common experiences in reality (Akram et al., 2009; American Psychiatric Association, 2013; Quintero Johnson & Riles, 2018). Additionally, those who recall characters with stereotypical mental illness presentations were significantly more likely to hold clichéd perceptions of mental illness (e.g., "crazy", "violent", "emotional outbursts") as well as report being more uncomfortable interacting with those who have mental

illness (Quintero Johnson & Riles, 2018). Further contributing to confusion, media has promoted ideas that are incorrect regarding the development and treatment of disorders, such as the need for traumatic events or negative childhoods to develop disorders (Hyler, 1988), or presenting extreme forms of therapy such as electroconvulsive therapy as common and widely used (Greenberg, 2009).

Outside of studies conducted on the effects of media, there are similar patterns of misconceptions and negative associations of mental illness. Some researchers have documented that a large proportion of participants believe that schizophrenia and dissociative identify disorder (DID; previously known as multiple personality disorder) are the same thing (Brand et al., 2016). DID is another disorder that has been popularized in media but often depicted in a dangerous light, which may further contribute to stigma of schizophrenia if one does not know the difference. Others have found that participants presume that those with schizophrenia are of low intelligence, are unable to function on their own, and that they require hospitalization as they will never be fully treated (Casarella, 2014). These beliefs can result in greater support of mandating treatment for people with schizophrenia, as many think that it is in the diagnosed persons best interest as they 'cannot live independently', or that they are 'too dangerous to be in society'.

Similarly, research on the etiology of disorders (e.g., genetic/medical vs environmental) have found that when told that the development of schizophrenia or bipolar disorder is due to genetics, participants rate them as more dangerous and desire greater social distance than people with other disorders such as MDD (Lee et al., 2014; Rüsch et al., 2010). These ratings have been traced to beliefs that if a disorder is medically based, it is more serious, more stable, and less likely to be cured (Dar-Nimrod & Heine, 2011; Haslam, 2011; Phelan, 2005). This often

correlates with belief that those diagnosed are more likely to be violent (Jorm & Griffiths, 2008; Lee et al., 2014) Such findings of participants believing that schizophrenia leads to increased rates of violence remain relatively consistent (Angermeyer & Matschinger, 2003; Link et al., 1999; Marie & Miles, 2008), and while this link between psychosis and violence exists, it is smaller than what the public believes it to be (Douglas et al., 2009). In fact, people with schizophrenia are at a much greater risk to be victims of violence rather than perpetrators (Wehring & Carpenter, 2011).

A final widespread misconception about mental illness is that it increases the risk to commit crimes. There have been contradictory research findings on this topic, which may be due to the type of analyses used in each study (e.g., qualitative vs. quantitative), the way in which disorders are grouped and defined, and how recidivism outcomes are measured. There are studies on each disorder alone that show that MDD (Fazel et al., 2015; Posick et al., 2013), bipolar disorder (Baillargeon, 2009; Modestin & Wuermle, 2005; Soloman & Draine, 1999; Quanbeck et al., 2004; Theriot & Segal, 2005) and schizophrenia (Douglas et al., 2009; Lamberti & Weisman, 2020) are all associated with an increase in criminal activity or violence. Conversely, there are studies on each disorder alone that show that MDD (Graz et al., 2009; Elbogen & Johnson, 2009), bipolar disorder (Erickson, 2008; Lamberti et al., 2020; Swartz & Lurigio, 2007), and schizophrenia (Abracen et al., 2014; Bonta et al., 2014; Olver & Kingston, 2019) have no effect or even reduce the likelihood of engaging in criminal activity or violence. Because of these inconsistent findings, it is difficult to draw a strong conclusion on whether these disorders consistently contribute to crime. Additionally, it is important to determine whether mental illness symptomology is causing the increased risk in criminal behavior, or if crime and mental illness simply share similar risk factors. For example, substance abuse (Ghiasi et al., 2022) and

antisocial personality pattern (Skeem et al., 2014) serve as risk factors of engaging in crime but are also strongly correlated with experiences of severe mental illness. This suggests that mental illness may not be the sole contributor to criminal activity, but rather the culmination of social and contextual experiences may be increasing risk (Rozel & Mulvey, 2017). Similarly, qualitative studies suggest that many justice-involved people don't attribute their criminal behavior to their symptomology, further complicating our understanding of the relationship (Juginger et al., 2006; Peterson et al., 2014).

While these results regarding the influence of mental illness on criminal activity may seem unrelated to issues of labeling, there is a body of research suggesting that being diagnostically labelled can influence justice-involvement. One major concern is self-stigma or internalized stigma, which occurs when one applies the stigma of their label and society's misconceptions to themselves, leading to negative self-image (Moore et al., 2018). Having such internalized stigma is correlated with antisocial personality patterns, criminogenic cognitions, and failure to accept responsibility for their actions (Moore et al., 2018). Self-stigma can also lead to feelings of helplessness in areas such as finding work and housing, which may impact their ability to meet conditions of probation (Corrigan & Kleinlein, 2005; Link, 1982). Separate from mental illness labeling, research has found that internalizing a label of "felon" has led to self-fulfilling prophecies regarding one's lifestyle leading to increased likelihood of reoffending as the label becomes part of their identity (Barrick, 2007; Chiricos et al., 2007). In a comparison of justice-involved people, those who were labelled as felon had significantly higher rates of reoffending than those who were never assigned the label as their adjudication was withheld (Chiricos et al., 2007).

## Application of Mental Illness and Labeling

Now that descriptions of the three disorders of SMI have been introduced, along with their common misconceptions, it is now important to discuss the real-world application through labeling theory. The current section intends to synthesize research regarding labels of the three disorders of severe mental illness to discuss their implications to both the criminal justice system and societal experiences. Understanding how such labels can impact people's lives is important on many levels. Regardless of intention, adherence to stigmatizing beliefs can perpetuate negativity in the lives of those with certain labels by making them feel judged and more hopeless for their recovery (West et al., 2014). Stigmatizing attitudes can also affect how we act around such groups, ranging from having less patience or preferring to avoid them (Batastini et al., 2014; Bourassa, 2018) to being more fearful during interactions and actively showing differential treatment (Prenzler et al., 2013; Ruiz & Miller, 2004).

Labels related to mental illness and prior justice involvement may impact decisions made by legal actors in a variety of areas, including how police may interact differently with such groups, and how they may be perceived by judges, juries, and probation/parole officers (Diaz, 2021; Eno Louden et al., 2018; Hall et al., 2019; Ruiz & Miller, 2004; Stroud, 2018). Additionally, one's own internalized stigma may directly influence future antisocial behaviors or willingness to seek treatment (Moore et al., 2018). Labeling stigma can also be experienced after reintegration to the community, as affected individuals are often disadvantaged in finding work or housing due to fears held by community members, and experiencing judgement, avoidance or negative interactions from groups ranging from professionals to friends and family (de Jacq et al., 2020; Saunders, 2003). The differential treatment that justice-involved people with mental illness may experience can be detrimental in both settings in unique ways.

### *Criminal Justice System*

**Police Interactions.** Interaction between those with mental illness and police can differ widely in context as police officers act as both law enforcers and first responders. When called as first responders, officers may be sent to de-escalate emergent situations that are not always related to any criminal behavior. For example, psychiatric crises such as suicidal gestures may require professional help, yet mental health specialists may not always be available. However, using officers to respond to psychiatric emergencies can be harmful to both the officer and the individual in crisis due to officers not often being equipped with the tools and training needed to optimally assist in such situations (Prenzler et al., 2013). Research has found that people with untreated mental illness are up to 16 times more likely than people who are not symptomatic to be killed by law enforcement, and the chances of injury or death of officers is also increased (Fuller et al., 2015; Treatment Advocacy Center, 2005).

When taking on the enforcer role, officers may be called to a scene for illegal activity, and they may be unaware that mental illness is involved. Not being aware that a call includes a person with mental illness can again be harmful for both the officer and the person called for. Often due to behavior that is exhibited when confronted by police, those with SMI have been shown to have a greater likelihood of being arrested during such interactions, with some researchers finding arrest rates up to twice that of the general population (Cueller et al., 2007; Teplin ,1984), especially if they are experiencing comorbid substance use issues (Swartz & Lurigio, 2007; White et al., 2006). Yet, findings remained mixed as some researchers have found that there is no effect of SMI on arrest rates (Fisher et al., 2014; Skeem et al, 2014), or that there was a decrease in arrest rates for such groups (Prin et al., 2015). As discussed in the prior section regarding myths of SMI, these varied results may be due to several factors including comorbid

disorders, the shared risk factors between criminal behavior and severe mental illness, or the way in which research was conducted.

Police awareness of mental illness labels can be helpful or harmful. On one hand, research finds that police officers hold beliefs of mental illness similar to those of the public, such as the perception that those with mental illness are dangerous and unpredictable, which can lead to an increased sense of anxiety and hypervigilance with interaction with these groups (Ruiz & Miller, 2004). Although police officers report that they approach interactions with people with mental illness the same as they would someone without it, this may not be as positive as it appears (Cordner, 2006). It can be appreciated that officers don't always explicitly report apprehension, but sometimes differential treatment may benefit both parties. Approaching someone who is actively psychotic may require different tactics than someone who is not, and providing tools for officers to effectively work with potential perpetrators with mental illness would be the best preventative measure of negative outcomes. Officers in some states are also provided with statistics regarding police injuries and death during dealings with people with mental illness, which can compound anxieties (Treatment Advocacy Center, 2005). In addition, research has found that lack of psychiatric training and knowledge can lead to escalations of violence and increased risk for injury and death for both parties (Prenzler et al., 2013; Ruiz & Miller, 2004). Therefore, if called to a scene with no knowledge of mental illness being involved, officers may be less fearful and guarded when interacting with the person in question. However, they may also be unprepared to manage the situation in the most effective and safe way.

**Sentencing and Probation.** The processes of sentencing and supervising people on probation or parole can also be affected by whether the individual is experiencing mental illness. Many jails assess for mental health problems upon arrival, and a mental illness flag can follow

people and influence decisions made by jail staff and other legal actors (Earley, 2006; Lurigio & Swartz, 2006). One such way this label can impact a person upon entry to the justice-system is in sentencing (Barnett et al., 2007; Hall et al., 2019; Sandys et al., 2018; Stroud, 2018). This starts at the bail process, where judges may determine if someone is eligible for bail, an option allowing their return to the community while awaiting court proceedings. Judges may also serve as the sole decider in criminal cases if a defendant foregoes a jury (Diaz, 2021). If a defendant does choose to have a jury trial, members of the community are then the ones to determine guilt or innocence. Giving the power of verdict determination and sentencing recommendations to members of the public has been a staple value of the country since its birth, but when we consider the lack of knowledge regarding mental illness that seems evident amongst the public, it is imperative that we further investigate the effect attitudes may have on their decision making in a court setting (Armani, 2017; Sabbagh, 2011).

Some research has found that in terms of sentencing outcomes by judges, there seems to be an effect of offense severity. Those who have been labelled with a mental illness who commit low-level misdemeanor offenses tend to be sentenced more harshly than those without a label, with odds up to 50% greater than those without a mental illness to receive jail time (Hall et al., 2019; Stroud, 2018). However, the no such effect has been found for felony offenses (Hall et al. 2019). Some jury research has found that the presence of mental illness results in more lenient sentencing in mock-jurors (Barnett et al., 2007; Barnett et al., 2004; Sabbagh, 2011). However, other research finds that the provision of mental health information can serve as an aggravating factor (Sandys et al., 2018). Sandys and colleagues found that in a sample of actual capital jurors, those who had mental health information in their case were more likely to sentence more harshly (2018). Reasons included that the mental illness seemed to overtake attention of the heinousness

of the crime, that the mental illness led them to believe that the defendant was dangerous, or that they thought that the evidence of mental illness was presented to confuse or manipulate their decisions. Other researchers have found a tendency for juries to recommend longer sentences in violent cases involving defendants with SMI (Davidson & Rosky, 2014) or to be less likely to propose the option of parole (Sabbagh, 2011).

In the context of probation, research has found that officers tend to rate their clients with mental illness labels as higher risk for future criminal behavior than those without mental illness, which can lead to increased surveillance and more punitive responses when terms of probation are broken (Eno Louden et al., 2018; Eno Louden et al., 2008; Eno Louden & Skeem 2013; Gottfredson et al., 1982; Soloman et al., 2002). However, it seems as though providing officers with education of mental illness can reduce such stigmatizing effects, lead to more problem-solving strategies rather than punishment, which ultimately improves outcomes of their clients with mental illnesses (Eno Louden et al., 2008; Link & Phelan, 2001; Pinfold et al., 2003).

***General Public***

While both mental illness and justice-labels can change trajectories during involvement in the justice system, the labels may continue to effect them through the reintegration process upon leaving the justice system, such as in during attempts to find work or housing and in social relationships (Bastastini et al., 2014; Bourassa, 2018; Norman et al., 2008; Saunders, 2003; Shankar et al., 2014). The reintegration process can already be extremely difficult, as stays in correctional facilities can be traumatic, emotionally draining to the point of needing to find treatment, may cause rifts in relationships, and can add financial strain (Bellamy et al., 2019). Not only can negative experiences be exacerbated by the presence of severe mental illness, but having labels of both justice involved and having a mental illness may also lead to greater

prejudice from members of the public. Even if members of the public do not think that they know someone who has been justice-involved or diagnosed with a SMI, it is extremely likely that they will interact someone with at least one of those labels, at which point their attitudes and actions may impact the self-esteem and course of treatment of that person. Research has shown that better experiences while reintegrating may reduce the likelihood of recidivism, indicating that the differential treatment that those with both labels may experience can further disadvantage them by increasing their chances to return to jail or prison (Ganapathy, 2018; Bellamy et al., 2019).

**Reintegration.** An integral part of the process of both reintegration from incarceration and rehabilitation of mental illness is holding a job (Bonta & Andrews, 2007; Roddy & Morash, 2020; Sheppard & Ricciardelli. 2020). Being hired by employers can be particularly difficult for individuals after they have been incarcerated, and this can become especially challenging when adding the component of mental illness. Those who have been convicted of crimes often need to disclose that information when applying for jobs, resulting in the label being applied to them by potential employers. Not only are those who are justice-involved less likely to have ideal educational and employment backgrounds (Rakis, 2005), they also must combat stigma against them. Individuals with such labels are significantly less likely to be hired due to beliefs that they are not hard workers, they would not have skills conducive with employability, that they are sneaky and may be dishonest about their work, and they are generally given little pity or slack from both employers and coworkers (Batastini et al., 2014; Bourassa, 2018; Graffam et al., 2007). Even if applicants have needed vocational skills, having a felony conviction has been shown to reduce others' views of their employability (Varghese et al., 2009). Not only do these

perceptions make candidates with criminal histories less likely to be hired, but they are also more likely to be fired.

When it comes to mental illness, it is common for employers to view potential hires as needing extra monitoring or help, a drain of resources such as HR, and that they would impede the productivity of the company (Shankar et al., 2014). Additionally, those with this label are likely to be treated unfairly, such as being paid less at their job (Overton & Medina, 2008). The mere experience of expecting such differential treatment and negative reactions can lead individuals with mental illness to avoid finding and attending work (Alexander & Link, 2003). Applicants who have labels related to both justice involvement and mental illness are often perceived as the worst candidates for hire (Batastini et al., 2014; Graffam et al., 2007). Thankfully, studies have also demonstrated that providing employers with information about how work can benefit individuals with justice-involvement and history of mental illness can increase likelihood of hire (Batastini et al., 2014).

Justice-involved people and those with mental illness are also likely to experience similar barriers when looking for housing (Norman et al., 2008). One study found that 22% of housing managers contacted for a study denied vacancies falsely or refused to rent to a stable, nonviolent, and medicated individual who had recently had a stay in a psychiatric hospital (Alisky & Ickowski, 1990). Further compounding this issue is the fact that many people with severe mental illness rely on Social Security Income (McApline & Warner, 2000), and lower incomes can result in people with SMI only being able to afford housing that is inadequate, loud and overcrowded (Kirby & Keon, 2006; Kyle & Dunn, 2008). Those with justice-involvement have also been shown to be less likely to find housing (Berry & Wiener, 2020; Bradley et al., 200; Geller & Curtis, 2011; Herbert et al., 2015), which can leave them unable to shed their “criminal

identity" and make it harder for them to move forward pro-socially upon reintegration (Keene et al., 2018).

## What Factors May Mitigate the Labeling Effect?

Stereotyping is a natural process—our brains want to understand the world around us, and we can save mental energy by applying assumptions to wide groups (Macrae et al., 1994). The downside to the use of stereotypes, purposeful or not, is the misapplication of information that can lead to negative attitudes and stigma towards people we don't understand (Corrigan & Watson, 2002; Link et al., 1987). Because this misapplication can often result in stigmatizing attitudes, researchers have sought to understand ways in which we can either prevent such stigma before it develops, as well as how we can correct stigmatizing attitudes once they've been discovered.

### *Familiarity*

A number of factors are thought to lessen the stigma associated with mental illness and justice-involvement. The first is familiarity, or having been exposed to a member of a stigmatized group. Having prior experiences with individuals with mental illness has been associated with lower ratings in perceptions of dangerousness and preferences of social distance in many cases (Corrigan & Niewegloski, 2019; Eno Louden et al., 2018; Link et al., 1987; Penn et al., 1994). One review of the literature regarding SMI and social distance stigma found that 19 of 26 studies concluded that greater familiarity of mental illness led to less stigmatizing attitudes (Corrigan & Niewegloski, 2019; Flood-Grady & Koenig Kellas, 2019). Yet, some have found that extremely intimate relationships with individuals with mental illness, such as family members, may elicit more stigma resulting in a U-shaped pattern between stigmatizing attitudes

and familiarity (Batastini et al., 2014; Broussard et al., 2012; Corrigan & Niewegloski, 2019; Phelan & Basow, 2007).

Findings like this suggest that by exposing members of the public to interactions involving people with mental illness we may have success in reducing stigmatizing attitudes of such groups, and burgeoning research on that notion have already shown some success in both justice-involved populations and those with SMI (Axer et al., 2010; Corrigan et al., 2001; Corrigan et al., 2001; Couture & Penn, 2003; Link & Cullen, 1986). However, the reason for the previously noted contradictory findings may be due to the quality of such interactions. That is, positive experiences with these groups may lessen stigma, while negative interactions may increase stigma. Therefore, it is imperative to question the quality of such relationships when conducting familiarity research.

***Knowledge***

Another notable stigma reduction technique is the provision of education about each group. Stigma grows from misconceptions, and education may be the best way to combat this. Education can be about presentations of mental illness, which may help in cases where people are likely to conflate disorders (i.e., connecting schizophrenia to dissociative identity disorder), or about etiologies of disorders (Boysen & Vogel, 2008; Corrigan & Watson, 2007). People who believe that mental illness is the result of poor character or decisions one made about their own life are more likely to hold negative beliefs. Numerous studies have found that educational materials have reduced stigma, increased empathy, and lessened blame for others' situation (Cassidy & Erdal, 2020; Corrigan & Watson, 2007; Corrigan et al., 2003; Corrigan & Penn, 1999; Couture & Penn, 2003; Holmes et al., 1999; Penn et al., 1994). Yet, others still find that

education may have no effect on stigma regarding mental illness (Batastini et al., 2014), or that it may increase stigma in jury-contexts (Yamamoto et al., 2017).

Similar trends have been found for stigma against those who are justice-involved, however research is scarce. However, one study found that education, especially about how various life experiences can help in the reintegration process, can help reduce stigma in areas such as employment (Batastini et al., 2014). While this body of research is much more limited, considering the benefits that education has shown in other areas suggests it may also apply to justice involvement.

***Demographic Variables***

Finally, individual differences may increase the likelihood that one succumbs to stigmatizing attitudes and labeling. In the case of gender, some studies find that for stigma of mental illness (Corrigan & Watson, 2007; Schroeder et al., 2020; Davidson & Rosky, 2014) and justice-involvement (Kjelsberg et al., 2007; Davidson & Rosky, 2014), being female leads to less endorsement of stigmatizing attitudes. However, this is not always the case (Applegate et al., 2002; Lotar et al., 2010; Rogers et al., 2011; Kjelsberg et al., 2007). Additionally, those who reported having higher education or identified as nonwhite tended to show less stigmatizing attitudes (Arboleda-Florez, 2002; Corrigan & Watson, 2007; Rao et al., 2007). One of the most consistent findings of stigma prediction is political orientation. Studies often find that people with more conservative beliefs are more susceptible to stigmatizing attitudes against those involved in crime or diagnosed with mental illness (Dawson Edwards, 2007; Hirschfield & Piquero, 2010; Leverentz, 2011; Rade et al., 2016).

**The Present Study**

The purpose of this study is to examine the influence of presenting mental illness information in three different ways on participant ratings of perceptions of dangerousness, stigma and their recommended treatment for a non-violent offender. The current body of literature has studied the labeling effect quite extensively, but a gap remains in identifying alternative ways to discuss mental illness outside of the label in an attempt to ameliorate stigma. Findings of the research will help us to better understand how the ways in which we speak about mental illnesses, in both social and justice contexts, may elicit stigmatizing responses. Not only can these results influence movements of speech, such as the promotion of person-first language, but significant results may have implications for the way in which we discuss mental illness in a variety of settings that may significantly impact the course people's lives. This includes court proceedings, where the improper discussions of mental illness may create bias in decision makers, in treatment centers to reduce bias by medical workers and empower family members and diagnosed individuals to work towards the common goal of symptom management, and in social contexts such as schools, where education programs may allow us to take an early-intervention approach to stigma reduction.

- **Research Question 1**: Are there differences in ratings of social distance, perceived dangerousness, and mandated treatment across the three disorders (MDD, bipolar disorder and schizophrenia) and a control condition, the information conditions (label, symptoms or combination), or the interaction of these two factors?
    - We hypothesize that there will not only be significant differences in the stigma ratings between the control and disorder groups, but that schizophrenia and bipolar disorder will elicit more stigma than MDD. We hypothesize that in each condition,

the label only presentation will elicit the most stigma, while the combination label-description presentation will elicit the least stigma. Additionally, we hypothesize that we will see a significant interaction between disorder and information presentation where the label of more stigmatized disorders (schizophrenia and bipolar disorder) will elicit more negative attitudes as compared to the other disorders and other information conditions.

- **Research Question 2a:** Does having prior experience with individuals with mental illness or justice-involvement change ratings in of perceived dangerousness, stigma, and coerced treatment?
    - We hypothesize that prior experience with mental illness or justice-involvement will significantly influence perceptions of stigma.
- **Research Question 2b:** Does this differ by report of the prior experience being positive or negative?
    - We hypothesize that the direction of the effect of experience on stigma will be moderated by how positive the prior experience was.
- **Research Question 3:** Does having greater knowledge of recognizing mental illness change ratings in of perceived dangerousness, stigma, and coerced treatment?
    - We hypothesize that greater knowledge of mental illness will reduce perceptions of stigma in each condition.

## Chapter 2: Method

### Participants

Participants were recruited from Amazon's CloudResearch, which is a research platform that allows researchers to access participants from across the world and remains one of the

largest crowdsourcing platforms available to researchers (Litman et al., 2017). CloudResearch is a viable method to gather data on a large scale all while working to utilize the best research practices (Litman et al., 2017). Previous research has demonstrated CloudResearch's ability to provide researchers with data with similar reliability to studies conducted in controlled settings. While limitations are associated with using online data collection tools (see Cheung et al., 2017; Wessling et al., 2017), CloudResearch offers several recommendations to reduce the chances of gathering subpar data that implemented. This included the integration of attention checks and a "Captcha" into the survey, limiting the participant pool to only individuals with a Human Intelligence Tasks (HIT) rate approval at 90% or above, and designing the measures in such a way to reduce attrition (Chandler & Shapiro, 2016).

The sample size for this study was determined by conducting an *a priori* power analysis using G*Power software. Using an $\alpha$= .05, a targeted power of .90, and planning for 3 groups of participants, with 4 measures in each group with intercorrelations of $r$=.5, 222 participants were needed to identify a small effect ($f$= 0.10) in a mixed between-within subjects design. Prior research has suggested that approximately 20% of participants could be excluded due to missing data or failed attention checks, increasing the target sample size to 280; however, after gathering data from 250 people we stopped collection due to having an adequate number of valid responses.

Eligibility requirements for this study included a minimum age of 18 years, a resident of the United States, and a HIT approval rate of 90% or above. Additionally, we sampled from a group of people who were not in the top 10% of productivity, meaning that they are less accustomed to taking such surveys, which may make them more attentive (https://go.cloudresearch.com/knowledge/what-is-the-naivete-feature). After removing

participants who failed one or more attention checks or who were missing significant amounts of data, the final sample consisted of 242 participants who were primarily female, white, and politically moderate, with the average age being 37 years old. More detail regarding the participants can be found in Table 1.1.

**Table 1.1**

*Demographic Information of Participants*

| Variable | *M* | *SD* | *Range* |
|---|---|---|---|
| Age in years | 37.38 | 11.42 | (18-73) |
| | *n* | *%* of *P*s | |
| Gender | | | |
| Male | 73 | 30.2 | |
| Female | 166 | 68.6 | |
| Other | 3 | 1.2 | |
| Race | | | |
| White | 188 | 77.7 | |
| Black | 26 | 10.7 | |
| Other | 27 | 11.2 | |
| Ethnicity | | | |
| Not Hispanic/Latinx | 217 | 91.6 | |
| Hispanic/Latinx | 20 | 8.4 | |
| Education | | | |
| Middle School | 4 | 1.7 | |
| High School Diploma | 29 | 12.0 | |
| Some College | 75 | 31.0 | |
| College Graduate | 94 | 38.8 | |
| Graduate Degree | 40 | 16.5 | |
| Political Orientation | | | |
| Extremely Liberal | 42 | 17.4 | |
| Somewhat Liberal | 54 | 22.3 | |
| Lean Liberal | 23 | 9.5 | |

| | | |
|---|---|---|
| In the Middle | 66 | 27.3 |
| Lean Conservative | 16 | 6.6 |
| Somewhat Conservative | 28 | 11.6 |
| Extremely Conservative | 13 | 5.4 |
| Political Party | | |
| Democrat | 102 | 42.1 |
| Republican | 52 | 21.5 |
| Independent | 73 | 30.2 |
| Not Political | 15 | 6.2 |
| Household Income | | |
| Under $29,999 | 50 | 20.7 |
| $30,000 - $49,999 | 60 | 24.8 |
| $50,000 - $74,999 | 54 | 22.3 |
| $75,000 - $99,999 | 41 | 16.9 |
| $100,000 - $149,999 | 28 | 11.6 |
| $150,000 or More | 9 | 3.7 |
| Employed in Mental Health Field | | |
| Psychology/Psychiatry | 3 | 1.2 |
| Social Work | 4 | 1.7 |
| Nurse | 7 | 2.9 |
| Researcher | 1 | 0.4 |
| Correctional Worker | 1 | 0.4 |
| Other | 21 | 8.7 |
| Not Employed in Mental Health | 205 | 84.7 |

## Measures

### *Vignettes*

The current study manipulated the presentation of mental health information to the public using twelve vignettes regarding a man who was recently arrested for theft (see Appendix A). The study is a 4 (Disorder) x 3 (Information Style) design. Participants were randomly assigned to one information condition, in which they saw vignettes of all four disorder conditions.

Therefore, disorder grouping was the within-subjects component, and information condition was the between-subjects. The first information category provided a description of a clinically significant experience of one of three major mental illnesses (Major Depressive Disorder, Bipolar 1 Disorder or Schizophrenia) or a control condition describing a person experiencing typical daily stress. The second category provided a DSM-5 label of one of the three major mental illnesses, or a control which stated that there is no mental health history. The third condition combined these two, providing participants both a symptom description along with its corresponding DMS-5 diagnosis. Vignettes describing symptoms were designed to meet clinical threshold as measured by DSM-5 criteria and are based upon vignettes used in similar studies (American Psychiatric Association, 2012; Link et al., 1999; Martin et al., 2000). Although the DSM-5-TR was released in March 2022, there were no significant changes to the three disorders in the current study.

***Social Distance***

Each of the outcome variables of interest sought to understand perceived stigma of the individual depicted in each vignette, with the first measured by the Social Distance Scale (Link et al., 1987; Link & Phelan, 1999). This measure consists of seven questions to be rated on a scale of 0 (Definitely Unwilling) to 3 (Definitely Willing), therefore lower scores indicate a greater preference for social distancing. An example of an item is "How would you feel about having someone like ___ as your neighbor?". We then reverse coded the responses for analysis, so that higher ratings indicated a greater preference to remain distanced from the individual in question, which will be used as a proxy for stigma (see Appendix B1). The Cronbach's alpha value for this measure in across the four disorder conditions ranged from $\alpha$=.908 to $\alpha$=.942.

***Perceived Dangerousness***

The second outcome variable of interest was the perceived dangerousness of the individual depicted in each vignette, as measured by Perceived Dangerousness of Mental Patients scale (Link et al., 1987; Penn et al., 1994; Sowislo et al., 2017). This measure was adapted to more neutral and modern wordings (changing the term "mental patient" to "a person who has been hospitalized for their mental health") as well as being specific to each vignette. An example of an item in this scale is "The main purpose of mental hospitals should be to protect the public from people similar to the person in the vignette". Participants were asked to rate their opinion on a scale of 0 (Strongly agree) to 5 (Strongly disagree). Additionally, participants were asked to indicate on the same scale how much they agree that the person in the vignette is likely to be violent towards themselves, and how likely they believe the person in the vignette is to be violent towards others. These questions are again designed to measure the stigma of violence applied to the individual in the vignette (see Appendix B2). The Cronbach's alpha value for this measure in across the four disorders ranged from $\alpha$=.840 to $\alpha$=.857.

***Treatment Coercion***

The final dependent variable was treatment coercion, which allowed the participants to indicate if they recommend that the person in the vignette should engage in a number of treatment options (Appendix B3). The options ranged from talking to friends, family, or a psychologist to being forced to take psychiatric medication or check into a hospital. After, participants were alerted to the fact that many cities and states have laws that can force or mandate people struggling with mental illness into treatment. After providing this information, participants were again asked if they believe that the individual in the vignette should be forced into a clinic, into medication, or into hospitalization, which measured support of mandated

treatment. Finally, they were asked to indicate on a scale of 0 (Not very) to 3 (Very) how serious they consider the problem of the individual depicted in the vignette to be. Those who have more stigmatizing beliefs regarding mental illness are likely to enforce more serious treatment, such as hospitalization or forced medication (Pescosolido et al., 2007; Smith et al., 2011; Watson et al., 2005). To note, the questions used for this section are not of a published scale. The Cronbach's alpha value for this measure in across the four disorders ranged from $\alpha$=.827 to $\alpha$=.884.

***Familiarity***

As experience with individuals of a stigmatized group has been shown to alter attitudes towards that group (Corrigan & Nieweglowski, 2019; Eksteen et al., 2017; Mancini et al., 2015), we assessed for participants' exposure to individuals with mental illness and criminal justice involvement. To do so, we used a modified version of the Level of Contact Report, which asked participants to check yes (1) or no (0) to a series of twelve potential contacts with severe mental illness ranging from most intimate ("I have a severe mental illness") to least intimate ("I have never observed a person that I was aware had a severe mental illness") (Holmes et al., 1999) (see Appendix C1). This measure was designed to assess for familiarity of schizophrenia, so each statement was modified to say "severe mental illness" rather than "schizophrenia" for the current study. Each of the twelve situations had been ranked in terms of intimacy by a panel of experts, and the weighted sum of the twelve items is used to indicate familiarity with severe mental illness, with higher scores indicating greater familiarity and contact. Weighting was done by taking the intimacy rating score multiplied by one if the participant had indicated "yes", or zero if the participant had indicated "no". Higher scores indicated more contact with people with SMI. Additionally, participants were asked to rate the following question on a scale of 1 (Extremely negative) to 5 (Extremely positive): "Overall, how would you rate your prior experiences

interacting with those with a severe mental illness?". For this question, participants had the option to indicate 0 (I have not had contact with this group), which then was coded to count as missing for the analyses. Participants were also asked to fill out the same measure, substituting mental illness with justice-involvement (see Appendix C2). We did not run a Cronbach's alpha analysis for this measure, as people have diverse experiences with people with mental illness or justice-involvement that does not need to follow a specific pattern. More information regarding this measure and the other independent variables can be found in Table 2.1.

**Table 2.1**

*Psychometric Properties of the Independent Variables*

| Variable | *M* | *SD* | *Range* | *Cronbach's α* |
|---|---|---|---|---|
| Level of Contact with People | | | | |
| With Diagnoses of SMI[a] | 30.92 | 18.80 | (0-78) | - |
| With Justice-Involvement | 19.50 | 14.811 | (0-78) | - |
| Attitudes Towards Mental Illness | 27.71 | 7.17 | (12-60) | .830 |
| Attitudes Towards Justice-Involved People | 93.58 | 21.53 | (36-180) | .954 |
| MAKS Knowledge | 45.45 | 7.29 | (12-60) | .599 |
| Self-Report Knowledge of SMI | 3.75 | 1.17 | (1-5) | - |
| #Accurately Identified Disorders | 2.71 | .94 | (0-4) | - |

***Attitudes Towards Mental Illness***

To control for the spectrum of attitudes that participants may hold of those with mental illnesses, they were asked to fill out a shortened version of the Community Attitudes Toward the Mentally Ill (CAMI) scale (Sampogna et al., 2017; Taylor et al., 1979). The CAMI assesses four components of attitudes: authoritarianism, benevolence, social restrictiveness, and community

mental health ideology. Items are scored on a 5-point Likert Scale ranging from 1 “Strongly disagree” to 5 “Strongly agree”. The scale used in the study consisted of twelve items, with an example being “People with mental illness don’t deserve our sympathy” (Appendix D1). The Cronbach’s alpha value for this measure was $\alpha$=.830.

***Attitudes Towards People who Offend***

Like the previous measure, controlling for attitudes towards individuals who criminally offend is also necessary. To do this, an adapted version of the Attitudes Towards Prisoners Scale (Melvin et al., 1985) was used (Example: “Trying to rehabilitate prisoners is a waste of time and money”). To modify for the current context, rather than asking about “prisoners” we will ask about “offenders”. This scale consists of 36 items scored from a scale of 1 (Strongly Disagree) to 5 (Strongly Agree) (see Appendix D2). The Cronbach’s alpha value for this measure was $\alpha$=.954.

***Mental Illness Knowledge***

Mental illness knowledge was assessed in two ways. First, participants were asked to self-report their knowledge, by answering on a Likert Scale of 1 (Strongly disagree) to 5 (Strongly agree) “I have very little knowledge about mental illness”. Participants also answered the Mental Health Knowledge Schedule (MAKS), a 12-item measure that assesses two facets of knowledge on a Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree), with the option to indicate “Don’t Know” (Evans-Lacko et al., 2010). The first facet assessed in the MAKS is treatment and treatment seeking behaviors, containing items such as “Medication can be an effective treatment for people with mental health problems”. The second facet is disorder recognition, which asks participants how much they agree five ‘issues’ are mental illnesses (e.g.,

schizophrenia, bipolar disorder, grief) (Appendix E). The Cronbach's alpha value for this measure was $\alpha$=.599.

### *Demographic Information*

Each participant was asked to provide general demographic information about themselves. This included the participant's self-identified gender, age, race, level of education and political orientation. Political orientation was measured in two ways. First, they were asked to indicate their political leaning, on a Likert Scale ranging from 1 (Extremely liberal) to 7 (Extremely Conservative). They were also asked to identify their political party affiliation, with options including Democrat, Republican, Independent or Not Political (Appendix F).

## Procedure and Design

Prior to beginning the study, we obtained ethical approval by the University Institutional Review Board (IRB) for use of human subjects. Recruitment was done using CloudResearch, limiting the sample to participants who have a HIT (human intelligence task) of .90 or above and those who are not in the top 10% of workers. Participants who consented to this study were provided an online information sheet briefly outlining the aims of the study and essentials of informed consent. Participants were informed that if they move forward with the study, they can skip any question that they may feel uncomfortable answering or that they may end the survey prematurely if they feel the need to do so. After reading this information, participants were asked to indicate whether they wish to move forward with the study. If they indicated that they did not wish to move forward, they were directed to a screen thanking them for their time. If they indicated that they did wish to move forward, they were then randomly assigned into one of the three information conditions, in which they see four disorder vignettes containing the same information pattern.

After reading one vignette, they were asked to complete the dependent variable measures (Social Distancing, Perceived Dangerousness and Treatment Coercion) specific to that vignette before being shown the next vignette. Therefore, each participant filled out the dependent variable measures four times, one for each disorder condition. By presenting the vignettes and dependent variables before the independent variables, we lessen the chances of the independent variable measures (e.g., attitudinal surveys) influencing their perceptions and ultimately their ratings of the person in the vignettes. Following the completion of the measures associated with the vignette, they were presented the remaining measures in random order. Prior to filling out any measure explicitly asking about severe mental illness, participants were reminded that severe mental illness includes Major Depressive Disorder, Bipolar 1 Disorder and Schizophrenia. Three attention checks were spread throughout the survey, embedded into the Likert scales of some measures (e.g., "To ensure that you are paying attention, please mark 'Somewhat disagree'"). Additionally, a Captcha was be placed in the beginning of the survey to prevent any robot responses (Oppenheimer et al., 2009). Participants who failed the Captcha or one or more of these checks were excluded from analyses. Each participant was compensated $1.75 following completion of the study.

**Analytic Strategy**

Several steps were taken prior to analyses to ensure that each variable was appropriate to use. To do so, we first ensured that the independent and dependent variable scales have acceptable reliability using the Cronbach's Alpha statistic. Previous research has recommended a minimum value of $\alpha$=.70 (Nunnally, 1978), however, to be conservative we used a value of $\alpha$=.80. We assessed whether the two additional questions regarding violence of self or others significantly decreased the alpha value of perceived dangerousness measure, and as there were

no issues they were then collapsed. While the knowledge scale failed to reach an adequate level of reliability, we decided to still investigate the effect of knowledge as measured by the MAKS but interpreted with care. Additionally, we ran a principal components analysis on the two measures of treatment recommendations to identify which items target attitudes about coercive treatment. Results were consistent with the prior arrangement of items; those items that had previously been identified as coercive factored onto one group, which highly correlated with the recommended treatment. However, coerced treatment was of more interest for the study, so only the sum of those items was used. Next, we computed bivariate correlations on the independent and dependent variables. Although it was expected for the dependent variables to correlate highly as they did, they were considered separately for analyses. Demographic variables that did not correlate significantly with any dependent variables were not used in the following analyses.

To address the aims of the current study we used two analytic strategies. To examine basic differences between groups (Research Question 1), we ran a series of repeated measures ANOVAs. Research Question 1a sought to identify whether there are differences in ratings of the three dependent variables by the disorder or information shown in the vignettes. Research Question 1b sought to understand if there is a significant interaction between those two conditions. Scores of the participants rating of the outcome measures were used as the within subjects variable (one score for each of the four disorders), and a coded variable indicating the information shown to the participant (0=Symptom, 1=Label, 2=Combination) served as the between-subjects factor. Additionally, we created an interaction term of information and disorder to assess in the ANOVA. We ran ANOVAs on each of the three dependent variables. In each ANOVA we ran a Tukey-Kramer test to identify where the differences lie, which were analyzed if the initial ANOVA results in significance. The Tukey test was chosen as it allows for pairwise

post-hoc testing on every possible pair of groups. The Tukey-Kramer method is a modified version of the Tukey test to apply to unbalanced data (Lee & Lee, 2018). If we did obtain a significant value of *F*, which indicates that there are significant differences by diagnostic label, this post-hoc test determined how many of the categories differ from each other to a statistically significant degree. These analyses allowed us to answer three things: 1) if those with disorder labels are stigmatized more than those without disorder labels in the sample, 2) if certain information conditions elicit more stigma in general and 3) if there is an interaction between the type of information presented to people regarding specific disorders and how that effects stigma. Ultimately, this helps to answer if certain disorders of severe mental illness are stigmatized significantly more than others, and if the way in which discuss that disorder impacts how stigmatizing it is viewed.

To address Research Question 2a and 2b, we ran repeated measure ANCOVAs for each aim. Research Question 2a sought to understand whether prior experiences with severe mental illness influences ratings on the three measures of stigma. The mental illness familiarity score was transformed into a z-score, and then used as a covariate. To address Research Question 2b, a standardized score was created of the rating of their prior experiences as well, which was then again added to the original model as a covariate. Each stigma measure was rotated as being the outcome variable. The same process was repeated, only using familiarity of justice-involved people and their rating of that previous interaction. Due to issues with power that were discovered during the analytic process, we also ran multiple regression analyses to understand the effect of familiarity and positive experiences on the outcomes. To do so, we simply coded out information conditions, and added them as independent variables in the regression models along with familiarity scores and ratings of prior contact. To investigate the effect of the familiarity

variables, we looked to the semi-partial correlation value to identify the effect of each variable alone.

Finally, to address Research Question 3 we used the results of the mental illness knowledge scale to assess if participants who know more about symptomology of mental illness have lower stigmatizing attitudes of the vignette. Knowledge was used as a covariate in another repeated measures ANCOVA to see if the addition of knowledge impacts the effect of disorder and information conditions. Similar to Research Questions 2, we ran a series of regression analyses with knowledge as a predictor to report on adequately powered analyses.

## Chapter 3: Results

We first ran bivariate correlations on the dependent variables and independent variables. Correlations between the three dependent variables (perceived dangerousness, social distancing, and support of mandated treatment) were positive and mostly significant. The exception to significance was only regarding mandated treatment; mandated treatment in the control group did not significantly correlate with social distancing of all four disorder groups, and mandated treatment in the schizophrenia condition did not correlate with social distancing of the control group or major depression. Having more prior contact with a person with severe mental illness negatively and significantly correlated with all disorder conditions of social distancing (ranging $r$=-.166, $p$=.010 to $r$=-.291, $p$<.001) and with perceived dangerousness of the control ($r$=-.130, $p$=.046), major depression ($r$=-.145, $p$=.026) and schizophrenia ($r$=-.139, $p$=.034) conditions. Prior contact with justice-involved people only significantly correlated with social distance ratings of control ($r$=-.156, $p$=.017), major depression ($r$=-.186, $p$=.004) and bipolar disorder ($r$=-.130, $p$=.046) conditions. Prior contact of those with mental illness or those who have been justice involved did not significantly correlate with any mandated treatment outcomes.

Knowledge of mental illness, as measured by both the MAKS and self-report significantly but negatively correlated all disorder conditions of perceived dangerousness and social distancing, with significance ranging $r$=-.128, $p$=.047 to $r$=-.321, $p$<.001, but did not significantly correlate with mandated treatment.

Finally, we conducted some exploratory correlations, such as how serious the participant viewed the problem of the person described was, how likely they are to call the police, as well as how negative their attitudes are towards those who have severe mental illness or have been justice-involved. Participants who viewed the vignette as more dangerous or preferred to remain a greater distance from the person in the vignette were significantly more likely to state that they would call the police if they were to have witnessed the crime occur. Additionally, apart from seriousness of the control condition, participants were more likely to mandate treatment if they viewed the vignette as having a more serious issue or if they were more likely to call the police. They were more likely to rate the issues stated in the vignette as more serious, except for the major depression condition ($r$=.103, $p$=.110). Finally, participants who held more negative attitudes towards both those with mental illnesses and those with prior justice-involvement rated the vignettes as significantly more dangerous and that they would prefer to stay distanced from the person depicted, however such attitudes did not correlate with support of mandated treatment. For more specific information regarding the correlations, see Tables 3.1-3.5.

**Table 3.1**

*Correlation of all Dependent Variables*

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Sum for Control: Social Distance | - | | | | | | | | | | | |
| 2. Sum for MDD: Social Distance | .630** | - | | | | | | | | | | |
| 3. Sum for Bipolar: Social Distance | .576** | .676** | - | | | | | | | | | |
| 4. Sum for Schizophrenia: Social Distance | .450** | .570** | .695** | - | | | | | | | | |
| 5.Sum for Control: Perceived Dangerousness | .601** | .449** | .410** | .356** | - | | | | | | | |
| 6. Sum for MDD: Perceived Dangerousness | .398** | .581** | .473** | .471** | .670** | - | | | | | | |
| 7. Sum for Bipolar: Perceived Dangerousness | .323** | .419** | .558** | .510** | .625** | .745** | - | | | | | |
| 8. Sum for Schizophrenia: Perceived Dangerousness | .158* | .346** | .448** | .644** | .447** | .667** | .700** | - | | | | |
| 9. Sum for Control: Mandated Treatment | .126 | .032 | .062 | .089 | .411** | .185** | .175** | .178** | - | | | |
| 10. Sum for MDD: Mandated Treatment | .162* | .221* | .244** | .261** | .340** | .493** | .440** | .383** | .447** | - | | |
| 11. Sum for Bipolar Disorder: Mandated Treatment | .146* | .174** | .224** | .241** | .290** | .341** | .486** | .387** | .409** | .757** | - | |
| 12. Sum for Schizophrenia: Mandated Treatment | .050 | .091 | .145* | .301** | .171** | .325** | .369** | .509** | .339** | .708** | .717** | - |

**Table 3.2**

*Correlation of Control Condition Variables*

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| 1.Sum for Control: Social Distance | - | | | | | | | | |
| 2. Sum for Control: Perceived Dangerousness | .601** | - | | | | | | | |
| 3. Sum for Control: Mandated Treatment | .126 | .411* | - | | | | | | |
| 4. Sum of Weighted Contact with SMI | -.166* | -.130* | .047 | - | | | | | |
| 5. Overall Rating of Experience with SMI | -.143* | -.165* | -.042 | .153* | - | | | | |
| 6. Sum of weighted contact with people with justice-involvement | -.156* | 0.017 | -.085 | .472** | .048 | - | | | |
| 7. Overall rating of experience with people with justice-involvement | -.200** | -.183** | -.006 | .125 | .418** | .240* | - | | |
| 8. Sum of Knowledge Score | -.195** | -.142* | .088 | .103 | .177* | -.037 | .136 | - | |
| 9. Self-report Knowledge | -.118 | -.253** | -.087 | .495** | .173* | .168** | .054 | .261** | - |

**Table 3.3**

*Correlation of MDD Condition Variables*

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| 1.Sum for MDD: Social Distance | - | | | | | | | | |
| 2. Sum for MDD: Perceived Dangerousness | .581** | - | | | | | | | |
| 3. Sum for MDD: Mandated Treatment | .221** | .493** | - | | | | | | |
| 4. Sum of Weighted Contact with SMI | -.291** | -.145* | .050 | - | | | | | |
| 5. Overall Rating of Experience with SMI | -.324** | -.288** | -.109 | .177* | - | | | | |
| 6. Sum of weighted contact with people with justice-involvement | -.186** | .001 | .089 | -.037 | .472** | - | | | |
| 7. Overall rating of experience with people with justice-involvement | -.285** | -.223** | -.098 | .125 | .418** | .240* | - | | |
| 8. Sum of Knowledge Score | -.239** | -.176** | -.057 | .103 | .153* | .048 | .139 | - | |
| 9. Self-report Knowledge | -.248** | -.321** | -.100 | .495** | .173* | .168** | .054 | .261** | - |

**Table 3.4**

*Correlation of Bipolar Disorder Condition Variables*

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| 1.Sum for Bipolar: Social Distance | - | | | | | | | | |
| 2. Sum for Bipolar: Perceived Dangerousness | .558* | - | | | | | | | |
| 3. Sum for Bipolar: Mandated Treatment | .224* | .486** | - | | | | | | |
| 4. Sum of Weighted Contact with SMI | -.228** | -.076 | -.003 | - | | | | | |
| 5. Overall Rating of Experience with SMI | -.412** | -.331** | -.091 | .153* | - | | | | |
| 6. Sum of weighted contact with people with justice-involvement | -.130* | .009 | .047 | .472** | 0.048 | - | | | |
| 7. Overall rating of experience with people with justice-involvement | -.365** | -.320** | -.092 | .125 | .418** | .240** | - | | |
| 8. Sum of Knowledge Score | -.248** | -.150* | -.052 | .103 | .177* | -.037 | .139 | - | |
| 9. Self-report Knowledge | -.142* | -.228** | -.041 | .261** | .495** | .173* | .168** | .054 | - |

**Table 3.5**

*Correlation of Schizophrenia Condition Variables*

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| 1.Sum for Schizophrenia: Social Distance | - | | | | | | | | |
| 2. Sum for Schizophrenia: Perceived Dangerousness | .644** | - | | | | | | | |
| 3. Sum for Schizophrenia: Mandated Treatment | -.093 | -.154* | - | | | | | | |
| 4. Sum of Weighted Contact with SMI | -.139* | -.177** | .103 | - | | | | | |
| 5. Overall Rating of Experience with SMI | -.386** | -.451** | .177* | .153* | - | | | | |
| 6. Sum of weighted contact with people with justice-involvement | .035 | -.107 | -.037 | .472** | .048 | - | | | |
| 7. Overall rating of experience with people with justice-involvement | -.376** | -.375** | .139 | .125 | .418** | .240** | - | | |
| 8. Sum of Knowledge Score | .509** | .301** | .002 | -.001 | -.136 | .095 | -.139* | - | |
| 9. Self-report Knowledge | -.173** | -.128* | .261** | .495** | .173** | .168** | .054 | -.027 | - |

**Aim 1**

***Social Distance***

Aim 1 sought to identify differences in stigma ratings by disorder, information presentation, and the interaction of those two factors. The first measure of stigma was social distance, or how willing participants are to associate with the people described in each vignette. Upon entering the variables into the model, we examined whether the assumption of sphericity was violated. Mauchly's test of sphericity indicated that the assumption had been violated ($\chi^2(5) = 29.491$, $p<.001$), therefore we applied the Greenhouse-Geisser correction to the results (Abdi, 2010). The test of within-subjects effects indicates significant differences between disorders ($F(2.768, 639.380) = 64.884$, $p<.001$), as well as a significant interaction between disorders and information condition ($F(5.536, 639.380) = 10.691$, $p<.001$). Schizophrenia elicited the greatest preference for distance ($M=10.267$, $SE=.242$), followed by bipolar disorder ($M=8.742$, $SE=.236$), the control condition ($M=7.829$, $SE=.250$), and major depression ($M=7.491$,

*SE*=.245). The test of between-subjects effects was also significant ($F(2, 231) = 7.920$, $p<.001$), with the label condition eliciting the greatest preference for distance (*M*=9.569, *SE*=.347), followed by the combination condition (*M*=8.603, *SE*=.347), and then the symptom condition (*M*=7.574, *SE*=.361). See Table 4.1 for more detail regarding the means and standard deviations for the three dependent variables in Aim 1, and Table 5.1 for results of the ANOVA for the Social Distance Scale.

**Table 4.1**

*Descriptive Statistics for Vignette Conditions*

| Predictor | Social Distance | | Dangerousness | | Mandated Treatment | |
|---|---|---|---|---|---|---|
| | *M* | *SE* | *M* | *SE* | *M* | *SE* |
| Information Condition | | | | | | |
| Label | 9.569 | .347 | 25.542 | .922 | 17.924 | .390 |
| Symptom | 7.574 | .361 | 23.306 | .966 | 18.468 | .395 |
| Combination | 8.603 | .347 | 25.000 | .940 | 18.747 | .388 |
| Disorder Condition | | | | | | |
| Control | 7.829 | .250 | 20.125 | .620 | 15.080 | .335 |
| MDD | 7.491 | .245 | 22.879 | .634 | 18.740 | .261 |
| Bipolar | 8.742 | .236 | 25.198 | .629 | 18.973 | .261 |
| Schizophrenia | 10.267 | .242 | 30.262 | .641 | 20.725 | .256 |

**Table 5.1**

*ANOVA Results for the Social Distance Scale*

| *Predictor* | *df* | *F* | *p* | $\eta^2$ |
|---|---|---|---|---|
| Between-subjects Effects | | | | |
| Information | 2 | 7.920 | <.001 | .064 |
| Error (Information) | 231 | | | |
| Within-subjects Effects | | | | |
| Disorder | 2.768 | 64.884 | <.001 | .219 |
| Disorder*Information | 5.360 | 10.691 | <.001 | .085 |
| Error (Disorder) | 639.380 | | | |

Because both tests of main effects were significant, we looked to the Tukey post-hoc comparisons to identify where exactly the differences lie. Results of the post-hoc tests are

presented in Table 5.2. Regarding the disorders, we found that there were significant differences between every disorder, apart from major depression and the control condition ($p$=.132). Schizophrenia was significantly more stigmatized than all three other disorder conditions ($p$<.001), and bipolar disorder was significantly more stigmatized than major depression and the control condition ($p$<.001). For the information conditions, we found that the label condition was significantly more stigmatized than the symptom condition ($p$<.001), however there was not a significant difference between the label and combination conditions ($p$=.051). Additionally, the combination condition was significantly more stigmatized than the symptom condition ($p$=.041).

**Table 5.2**

*ANOVA Results for the Post-Hoc Comparisons of the Social Distance Scale*

| Predictor | *Mean Difference* | *SE* | *p* | *95% CI* |
|---|---|---|---|---|
| Information Condition | | | | |
| Label – Symptom | 1.994 | .501 | <.001 | [1.007, 2.982] |
| Label – Combination | .966 | .491 | .051 | [-.002, 1.934] |
| Symptom – Combination | -1.029 | .501 | .041 | [-2.016, -.041] |
| Disorder Condition | | | | |
| Control – MDD | .338 | .223 | .132 | [-.102, .777] |
| Control – Bipolar | -.913 | .224 | <.001 | [-1.355, -.472] |
| Control – Schizophrenia | -2.438 | .249 | <.001 | [-2.930, -1.946] |
| MDD – Bipolar | -1.251 | .196 | <.001 | [-1.637, -.864] |
| MDD – Schizophrenia | -2.775 | .223 | <.001 | [-3.214, -2.337] |
| Bipolar – Schizophrenia | -1.525 | .186 | <.001 | [-1.891, -1.158] |

Finally, the pairwise comparisons of the interaction between disorder and information condition show varying results and are shown in Table 5.3. For the control condition, the information condition follows the same pattern as previously reported. The label condition was led to a significantly greater preference for social distance as compared to the combination ($p$<.001) and symptom ($p$<.001) conditions, and the combination condition also led to greater preference for distance than the symptom condition ($p$=.002). While the same pattern was found

in the major depression condition, the difference between the combination condition and symptom condition was not significant ($p$=.076). Regarding bipolar disorder, while the pattern again remained the same, there was only a significant difference when contrasting the label condition and the symptom condition ($p$=.033), with the label condition eliciting a greater preference for distance. Finally, in the schizophrenia condition we did not find any significant differences.

**Table 5.3**

*ANOVA Results for the Interaction Effects of the Social Distance Scale*

| | Predictor | *Mean Difference* | *SE* | *p* | *95% CI* |
|---|---|---|---|---|---|
| Control | | | | | |
| | Label – Symptom | 4.152 | .616 | <.001 | [2.937, 5.366] |
| | Label – Combination | 2.250 | .604 | <.001 | [1.060, 3.440] |
| | Symptom – Combination | -1.902 | .616 | .002 | [-3.116, -.687] |
| MDD | | | | | |
| | Label – Symptom | 2.464 | .604 | <.001 | [1.275, 3.653] |
| | Label – Combination | 1.387 | .592 | .020 | [.222, 2.553] |
| | Symptom – Combination | -1.077 | .604 | .076 | [-2.266, .112] |
| Bipolar | | | | | |
| | Label – Symptom | 1.249 | .581 | .033 | [.105, 2.393] |
| | Label – Combination | .312 | .569 | .584 | [-.809, 1.434] |
| | Symptom – Combination | -.936 | .581 | .108 | [-2.081, .208] |
| Schizophrenia | | | | | |
| | Label – Symptom | .113 | .597 | .850 | [-1.063, 1.289] |
| | Label – Combination | -.088 | .585 | .881 | [-1.240, 1.065] |
| | Symptom – Combination | -.200 | .597 | .737 | [-1.376, .975] |

***Perceived Dangerousness***

The second measure of stigma was the perception of dangerousness of each vignette. Following the same procedure as analyzing the Social Distance Scale, we first examined whether the assumption of sphericity was violated. Again, Mauchly's test of sphericity indicated that the assumption had been violated ($\chi^2(5) = 42.705$ $p$<.001), therefore we again applied the

Greenhouse-Geisser correction to the results (Abdi, 2010). The test of within-subjects effects indicates significant differences between disorders ($F(2.624, 579.888) = 135.353$, $p<.001$), as well as a significant interaction between disorders and information condition ($F(5.248, 579.888) = 6.201$, $p<.001$). Additional results are shown in Table 6.1. Schizophrenia was rated to be the most dangerous ($M=30.262$, $SE=.641$), followed by bipolar disorder ($M=25.198$, $SE=.629$), the major depression ($M=22.879$ $SE=.634$), and the control condition ($M=20.125$, $SE=.620$). The test of between-subjects effects was not significant in this context ($F(2, 221) = 1.505$, $p=.224$), however the label condition was again the most stigmatized ($M=25.542$, $SE=.922$), followed by the combination condition ($M=25.00$, $SE=.940$), and then the symptom condition ($M=23.306$, $SE=.966$).

**Table 6.1**

*ANOVA Results for the Perceived Dangerousness Scale*

| Predictor | *df* | *F* | *p* | $\eta^2$ |
|---|---|---|---|---|
| Between-subjects Effects | | | | |
| Information | 2 | 1.505 | 0.224 | 0.013 |
| Error (Information) | 221 | | | |
| Within-subjects Effects | | | | |
| Disorder | 2.624 | 135.353 | <.001 | 0.38 |
| Disorder*Information | 5.248 | 6.201 | <.001 | 0.053 |
| Error (Disorder) | 579.888 | | | |

We again looked to the Tukey post-hoc comparisons to identify where exactly the differences lie where we found significant main effects. For more detail of the post-hoc test results, including the non-significant information contrasts, please see Table 6.2. When contrasting the disorder conditions, we found a very similar pattern to the social distance results. However, regarding dangerousness, we found that there were significant differences amongst every disorder condition. Schizophrenia was perceived as significantly more dangerous than

bipolar disorder ($p$<.001), major depression ($p$<.001), and the control condition ($p$<.001). Bipolar disorder was perceived as significantly more dangerous than major depression ($p$<.001), and the control condition ($p$<.001). Finally, major depression was perceived as significantly more dangerous than the control condition ($p$<.001). Because there was not a significant main effect in information condition, the results of the contrasts will not be reported here as there was no significance.

**Table 6.2**

*ANOVA Results for the Post-Hoc Comparisons of the Perceived Dangerousness Scale*

| Predictor | *Mean Difference* | *SE* | *p* | *95% CI* |
|---|---|---|---|---|
| Information Condition | | | | |
| Label – Symptom | 2.235 | 1.335 | 0.095 | [-.396, 4.886] |
| Label – Combination | 0.542 | 1.316 | 0.681 | [-2.052, 3.136] |
| Symptom – Combination | -1.694 | 1.348 | 0.210 | [-4.350, .962] |
| Disorder Condition | | | | |
| Control – MDD | -2.754 | 0.509 | <.001 | [-3.756, -1.751] |
| Control – Bipolar | -5.073 | 0.54 | <.001 | [-6.137, -4.008] |
| Control – Schizophrenia | -10.136 | 0.641 | <.001 | [-11.400, -8.872 |
| MDD – Bipolar | -2.319 | 0.45 | <.001 | [-3.205, -1.433] |
| MDD – Schizophrenia | -7.382 | 0.498 | <.001 | [-8.364, -6.401] |
| Bipolar – Schizophrenia | -5.063 | 0.474 | <.001 | [-5.997, -4.130] |

When examining the interaction between disorder and information condition, we only find significant differences in the control and major depression conditions, which can be found in Table 6.3. In the control condition, the symptom condition elicits significantly less perceptions of danger than the label condition ($p$=.002). There are no significant differences between the label and combination conditions ($p$=.090), nor the combination and symptom conditions ($p$=.137). For major depression, we find the same pattern; the symptom condition elicits significantly less perceptions of danger than the label condition ($p$=.016), but no significant differences between

the label and combination conditions ($p$=.152), nor the combination and symptom conditions ($p$=.319).

**Table 6.3**

*ANOVA Results for the Interaction Effects of the Perceived Dangerousness Scale*

| | Predictor | *Mean Difference* | *SE* | *p* | *95% CI* |
|---|---|---|---|---|---|
| Control | | | | | |
| | Label – Symptom | 4.843 | 1.521 | 0.002 | [-7.841, -1. 846] |
| | Label – Combination | 2.55 | 1.500 | 0.090 | [-.406, 5.505] |
| | Symptom – Combination | -2.294 | 1.535 | 0.137 | [-5.320, .732] |
| MDD | | | | | |
| | Label – Symptom | 3.773 | 1.556 | 0.016 | [.707, 6.839] |
| | Label – Combination | 2.205 | 1.534 | 0.152 | [-.818, 5.228] |
| | Symptom – Combination | -1.568 | 1.571 | 0.319 | [-4.633, 1.527] |
| Bipolar | | | | | |
| | Label – Symptom | 2.111 | 1.544 | 0.173 | [-5.154, 5.154 |
| | Label – Combination | 0.333 | 1.522 | 0.827 | [-2.667, 3.332] |
| | Symptom – Combination | -1.779 | 1.558 | 0.255 | [-4.850, 1.293] |
| Schizophrenia | | | | | |
| | Label – Symptom | -1.787 | 1.573 | 0.257 | [-4.887, 1.134] |
| | Label – Combination | -2.921 | 1.551 | 0.061 | [-.136, .136] |
| | Symptom – Combination | -1.134 | 1.588 | 0.476 | [-4.264, 1.995] |

***Mandated Treatment***

The final measure of stigma was the endorsement of mandated treatment for each of the vignettes. We again looked to see whether the assumption of sphericity was violated. Mauchly's test of sphericity indicated that the assumption had been violated ($\chi^2(5) = 155.032$ $p$<.001), therefore we will again apply the Greenhouse-Geisser correction to the results. The test of within-subjects effects indicates significant differences between disorders ($F$(2.027, 472.186) = 153.415, $p$<.001), as well as a significant interaction between disorders and information condition ($F$(4.053, 472.186) = 5.151, $p$<.001) (Table 7.1). Schizophrenia had the greatest rate of mandated treatment endorsement ($M$=20.725, $SE$=.256), followed by bipolar disorder

(*M*=18.973, *SE*=.261), the major depression (*M*=18.740 *SE*=.261), and the control condition (*M*=15.080, *SE*=.335). The test of between-subjects effects was again nonsignificant ($F(2, 233) = 1.156$, $p=.317$), however in this case the combination condition led to the greatest endorsement for mandated treatment (*M*=18.747, *SE*=.388), followed by the symptom condition (*M*=18.468, *SE*=.395), and then the label condition (*M*=17.924, *SE*=.390).

**Table 7.1**

*ANOVA Results for the Mandated Treatment Scale*

| Predictor | *df* | *F* | *p* | $\eta^2$ |
|---|---|---|---|---|
| Between-subjects Effects | | | | |
| Information | 2 | 0.206 | 0.814 | 0.002 |
| Error (Information) | 222 | | | |
| Within-subjects Effects | | | | |
| Disorder | 2.099 | 92.552 | <.001 | 0.294 |
| Disorder*Information | 2.139 | 8.16 | <.001 | 0.068 |
| Error (Disorder) | 466.049 | | | |

We again looked to the Tukey post-hoc comparisons to identify where exactly the differences lie where we found significant main effects. Details of the post-hoc test results, including the non-significant information contrasts, can be found in Table 7.2. Regarding the disorders, we again see significant differences in all but one contrast. There was not a significant difference in rates of mandated treatment endorsement for vignettes depicting bipolar disorder and major depression ($p=.211$). However, schizophrenia was significantly more likely to have mandated treatment recommended as compared to bipolar disorder ($p<.001$), major depression ($p<.001$), and the control condition ($p<.001$), and bipolar disorder and major depression were thought to deserve mandated treatment significantly more than the control condition ($p<.001$).

**Table 7.2**

*ANOVA Results for the Post-Hoc Comparisons of the Mandated Treatment Scale*

| Predictor | *Mean Difference* | *SE* | *p* | *95% CI* |
|---|---|---|---|---|
| Information Condition | | | | |
| Label – Symptom | -0.543 | 0.555 | 0.329 | [-1.637, .550] |
| Label – Combination | -0.823 | 0.550 | 0.136 | [-1.906, .261] |
| Symptom – Combination | -0.279 | 0.553 | 0.614 | [-1.370, .811] |
| Disorder Condition | | | | |
| Control – MDD | -3.66 | 0.314 | <.001 | [-4.279, -3.042] |
| Control – Bipolar | -3.893 | 0.327 | <.001 | [-4.358, -3.249] |
| Control – Schizophrenia | -5.645 | 0.346 | <.001 | [-6.327, -4.962] |
| MDD – Bipolar | -0.233 | 0.186 | 0.211 | [-.599, .133] |
| MDD – Schizophrenia | -1.984 | 0.200 | <.001 | [-2.379, -1,590] |
| Bipolar – Schizophrenia | -1.751 | 0.199 | <.001 | [-2.144, -1.358] |

When examining the contrasts of the interaction effect we find little significance, all of which occurs in the control condition. In the control condition, those who received symptom information only were the most likely to endorse mandated treatment and did so significantly more than the label condition ($p$=.002). Additionally, the seeing combination of symptoms and label led to great endorsement for mandated treatment than the label condition ($p$=.002). More detail regarding the interaction results can be found in Table 7.3.

***Table 7.3***

*ANOVA Results for the Interaction Effects of the Mandated Treatment Scale*

| Predictor | | *Mean Difference* | *SE* | *p* | *95% CI* |
|---|---|---|---|---|---|
| Control | | | | | |
| | Label – Symptom | -2.517 | 0.823 | 0.002 | [-4.139, -.895] |
| | Label – Combination | -2.507 | 0.815 | 0.002 | [-4.114, -.901] |
| | Symptom – Combination | 0.01 | 0.821 | 0.991 | [-1.608, 1.627] |
| MDD | | | | | |
| | Label – Symptom | 0.365 | 0.642 | 0.570 | [-.899, 1.630] |
| | Label – Combination | 0.224 | 0.636 | 0.725 | [-1.028, 1.477] |
| | Symptom – Combination | -0.141 | 0.640 | 0.826 | [-1.630, 1.120] |
| Bipolar | | | | | |
| | Label – Symptom | 0.366 | 0.642 | 0.570 | [-.900, 1.631] |

| | | | | | |
|---|---|---|---|---|---|
| Schizophrenia | Label – Combination | -0.513 | 0.636 | 0.420 | [-1.767, .740] |
| | Symptom – Combination | -0.879 | 0.640 | 0.171 | [-2.141, .382] |
| | Label – Symptom | -0.388 | 0.629 | 0.538 | [-1.627, .852] |
| | Label – Combination | -0.495 | 0.623 | 0.428 | [-1.722, .733] |
| | Symptom – Combination | -0.107 | 0.627 | 0.865 | [-1.343, 1.129] |

**Aim 2**

***Contact with People with Severe Mental Illness***

Aim 2 sought to explore how covariates, specifically interactions with the two populations in question and how positive those experiences were may impact stigma ratings. Beginning with contact with people with severe mental illness, and following the same method as Aim 1, we simply added the participant's standardized intimacy of contact score as a covariate to the ANCOVAs and rotated the outcomes. In each ANCOVA, Mauchly's test of sphericity indicated that the assumption had been violated therefore we applied the Greenhouse-Geisser correction to all the results. To note, the power of the analyses drastically drops when adding a covariate; we will present the analyses as planned, but the lack of significant effects may be more related to a small sample size and may not accurately represent true population differences. We will discuss the major results in the current section but will also present regression analyses that were adequately powered and deemed more fitting for the data and variables. Means of each condition will be presented in Table 8.1.

**Table 8.1**

*Descriptive Statistics for Vignette Conditions adding Intimacy and Rating of Contact Covariates*

| Predictor | Social Distance | | Dangerousness | | Mandated Treatment | |
|---|---|---|---|---|---|---|
| | *M* | *SE* | *M* | *SE* | *M* | *SE* |
| Contact With Mental Illness | | | | | | |
| Information Condition | | | | | | |
| Label | 8.602 | .206 | 24.571 | .546 | 18.378 | .231 |
| Symptom | 8.591 | .207 | 24.609 | .549 | 18.378 | .231 |
| Combination | 8.592 | .205 | 24.603 | .551 | 18.378 | .231 |
| Disorder Condition | | | | | | |
| Control | 7.888 | .275 | 20.132 | .637 | 15.069 | .350 |
| MDD | 7.514 | .247 | 22.935 | .645 | 18.718 | .264 |
| Bipolar | 8.750 | .234 | 25.193 | .635 | 18.989 | .266 |
| Schizophrenia | 10.228 | .239 | 30.118 | .645 | 20.736 | .260 |
| Contact with MI + Rating | | | | | | |
| Information Condition | | | | | | |
| Label | 8.536 | .211 | 24.487 | .545 | 18.393 | .227 |
| Symptom | 8.536 | .211 | 24.487 | .545 | 18.393 | .227 |
| Combination | 8.536 | .211 | 24.487 | .545 | 18.393 | .227 |
| Disorder Condition | | | | | | |
| Control | 7.858 | .279 | 20.090 | .639 | 15.100 | .348 |
| MDD | 7.425 | .254 | 22.728 | .641 | 18.726 | .261 |
| Bipolar | 8.665 | .237 | 25.053 | .628 | 18.991 | .262 |
| Schizophrenia | 10.197 | .242 | 30.078 | .645 | 20.257 | .257 |
| Contact With Justice-Involvement | | | | | | |
| Information Condition | | | | | | |
| Label | 8.703 | .204 | 24.931 | .543 | 18.399 | .228 |
| Symptom | 8.703 | .204 | 24.943 | .543 | 18.381 | .228 |
| Combination | 8.704 | .204 | 24.898 | .542 | 18.385 | .227 |
| Disorder Condition | | | | | | |
| Control | 7.944 | .273 | 20.452 | .637 | 15.099 | .347 |
| MDD | 7.577 | .250 | 23.214 | .644 | 18.767 | .261 |
| Bipolar | 8.862 | .234 | 25.508 | .625 | 18.958 | .262 |
| Schizophrenia | 10.432 | .228 | 30.522 | .640 | 20.731 | .257 |
| Contact With JI + Rating | | | | | | |
| Information Condition | | | | | | |
| Label | 9.569 | .347 | 23.306 | 0.966 | 18.468 | 0.395 |
| Symptom | 7.574 | .361 | 25.542 | 0.922 | 17.924 | 0.390 |
| Combination | 8.603 | .347 | 25.000 | 0.940 | 18.747 | 0.388 |
| Disorder Condition | | | | | | |
| Control | 7.829 | .250 | 20.125 | 0.620 | 15.080 | 0.335 |
| MDD | 7.491 | .245 | 22.879 | 0.634 | 18.740 | 0.261 |
| Bipolar | 8.742 | .236 | 25.198 | 0.629 | 18.973 | 0.261 |
| Schizophrenia | 10.267 | .242 | 30.262 | 0.641 | 20.725 | 0.256 |

**Social Distance.** When examining the added impact of contact with people with severe mental illness in each ANCOVA, Mauchly's test of sphericity indicated that the assumption had been violated therefore we applied the Greenhouse-Geisser correction to all the results. In the within-subjects design, the effect of the disorder is significant ($F(2.639, 601.720) = 55.472$, $p<.001$), but the added variable of contact with mental illness was not ($F(7.917, 601.720) = 1.371$, $p=.207$; Power=.627). When examining the mean scores of social distancing, we find only slight reductions in the average for each disorder. The between-subjects results show that the interaction of information condition and contact with people with SMI was significant $F(3, 228) = 5.878$, $p<.001$). We see a relatively large decrease in the average rate of social distance for the labeling condition ($M=8.602$, $SE=.206$), however the combination condition remains about the same ($M=8.592$, $SE=.205$) and the symptom condition actually increases ($M=8.591$, $SE=.205$). Interestingly, we do not find any significant interactions between the disorder and information conditions with the addition of the covariate, likely due to the lack of power. To address Aim 2b, we added the rating of how positive prior interacts with people with SMI to the model. For the social distance dependent variable, we again found a significant effect of the disorder alone ($F(2.644, 602.851) = 56.269$, $p<.001$), but the added interaction of the standardized rating of experience and standardized amount of contact was not ($F(7.932, 602.851) = 1.324$, $p=.229$; Power=.609).

Because of the power issues we encountered with ANCOVA, we decided to explore the impact of interacting with people with SMI using multiple regression. In this analysis, we combined aims 2a and 2b, by analyzing the impact of both how much contact people have had with those with SMI or justice-involvement, along with how positive they considered that contact to be. To do so, we simply coded the information condition, and entered those three

variables into the regression model, then added the variable of level of contact and the rating of those prior interactions while rotating out the 3 dependent variables for the four disorders, running a total of 12 regressions for each of the covariates (contact with SMI and contact with justice-involved people). Detailed results for the regression analyses for social distance can be found in Table 9.1

**Table 9.1**

*Regression Results for the Social Distance Scale by Disorder with Contact with People with Mental Illness and Rating of the Experience as Covariates*

| Variable | *B* | *SE* | *t* | *95% CI of B* | *p* | *sr* |
|---|---|---|---|---|---|---|
| Control Condition | | | | | | |
| Constant | 10.764 | .886 | 12.152 | [9.018, 12.510] | <.001 | - |
| Simple Coded Symptom | -4.409 | .618 | -7.139 | [-5.627, -3.192] | <.001 | -.442 |
| Simple Coded Combination | -2.910 | .626 | -4.650 | [-4.144, -1.677] | <.001 | -306 |
| Sum of Weighted Contact | -.025 | .014 | -1.773 | [-.053, .003] | .078 | -.121 |
| Overall Rated Experience | -.653 | .238 | -2.740 | [-1.123, -.183] | .007 | -.186 |
| MDD Condition | | | | | | |
| Constant | 12.502 | .827 | 15.123 | [10.872, 14.131] | <.001 | - |
| Simple Coded Symptom | -2.554 | .584 | -4.373 | [-3.706, -1.403] | <.001 | -.288 |
| Simple Coded Combination | -2.162 | .585 | -3.694 | [-3.315, -1.008] | <.001 | -.246 |
| Sum of Weighted Contact | -.043 | .013 | -3.249 | [-.069. -.017] | .001 | -.218 |
| Overall Rated Experience | -1.174 | .225 | -5.222 | [1.617, -.731] | <.001 | -.338 |
| Bipolar Condition | | | | | | |
| Constant | 13.975 | .786 | 17.777 | [12.426, 15.525] | <.001 | - |
| Simple Coded Symptom | -1.268 | .553 | -2.293 | [-2.358, -.178] | .023 | -.155 |
| Simple Coded Combination | -1.060 | .555 | -1.908 | [-2.155, .035] | .058 | -.130 |
| Sum of Weighted Contact | -.029 | .012 | -2.363 | [-.054, -.005] | .019 | -.160 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Overall Rated Experience | -1.357 | .213 | -6.374 | [-1.777, -.938] | <.001 | -.400 |
| Schizophrenia Condition | | | | | | |
| Constant | 15.267 | .789 | 19.353 | [13.712, 16.822] | <.001 | - |
| Simple Coded Symptom | -.267 | .555 | -.481 | [-1.362, .828] | .631 | -.033 |
| Simple Coded Combination | -.395 | .558 | -.708 | [-1.496, .705] | .480 | -.048 |
| Sum of Weighted Contact | -.012 | .012 | -.954 | [-.037, .013] | .341 | -.065 |
| Overall Rated Experience | -1.500 | .214 | -7.005 | [-1.922, -1.078] | <.001 | -.433 |

While in the ANCOVA we found that the addition of contact was not significant, there were significant findings in the regressions. In the control condition ($F(4, 214) = 15.752$, $p<.001$, $R^2=.231$), the variable measuring how positive one's prior experiences with people with SMI have been proved to explain variance in responses of social distancing above and beyond other variables ($sr=-.186$, $p=.007$). The coded information conditions also were significant alone, however the actual level of contact that a person has had with people with SMI was not ($sr=-.121$, $p=.078$). In the MDD condition, we found that the model ($F(4, 216) = 15.802$, $p<.001$, $R^2=.230$), and all four variables entered into the model were significant. Both of the covariates of interest, the intimacy of contact ($sr=-.218$, $p=.001$) and the rating of that contact ($sr=-.186$, $p<.001$), offered significant predictive ability beyond the information condition assigned to each participant. The bipolar disorder condition had similar results ($F(4, 217) = 14.064$, $p<.001$, $R^2=.209$), where both intimacy of contact ($sr=-.160$, $p=.019$) and the rating of that contact ($sr=-.400$, $p<.001$) where significant alone, however only one of the coded information conditions showed to be significant alone. Finally, in the schizophrenia condition ($F(4, 217) = 13.326$, $p<.001$, $R^2=.200$), we found that only the variable measuring how positive prior contact with

people with SMI was, was significant ($sr$=-.433, $p$<.001). In all conditions, the trend was that participants who had more positive experience with people with SMI were less likely to want to distance from the vignette.

**Perceived Dangerousness.** The pattern for the initial ANCOVA followed for perceptions of dangerousness, where again, the ANCOVA did not find a significant within-subjects effect with the covariates, likely due to the lack of power (Disorder: $F$(2.566, 561.886) = 121.695, $p$<.001), Interaction of Covariates: ($F$(7.697, 561.886)) = 1.084, $p$=.373; Power=.497). Each of the means for the disorders decreased by a very small amount. The between-subjects test was also non-significant ($F$(3, 219)) = 2.353, $p$=.073; Power=.585), indicating no differences across the information conditions with the addition of the interaction with the covariate, which may also be due to power. While the means for the symptom and combination condition were marginally decreased, the mean dangerousness score for the label condition actually increased. To address Aim 2b, we again added the rating of how positive prior interacts with people with SMI to the model. Following the results of the social distance variable, we again found a significant effect of the within-subjects disorder alone ($F$(2.572, 563.329) = 122.873, $p$<.001), but the added interaction of the standardized rating of experience and standardized amount of contact was not ($F$(7.717, 563.329) = 1.016, $p$=.421; Power=.468). However, we did find a significant effect of the interaction with the two covariates in the between-subjects analysis ($F$(3, 219) = 3.179, $p$=.025; Power=.730). While the means seemed to decrease in the model only containing the amount of contact only slightly, with the exception of the label condition which became slightly larger, in the interaction ANCOVA with both amount and rating of contact, we see that the combination condition and symptom conditions have reductions in their dangerousness scores.

Those who had more and positive contact with people with SMI tended to stigmatize the vignette less.

Following the method described in Aim 2 of social distance, to address the power issues, we ran a series of multiple regressions. Detailed results can be found in Table 9.2. For the control condition ($F(4, 213) = 5.279$, $p<.001$, $R^2=.092$), both of the coded information conditions, as well as the rating of prior experience with SMI, was significant alone ($sr=-.186$, $p=.007$). In the MDD condition ($F(4, 213) = 6.482$, $p<.001$, $R^2=.110$), the symptom information was significant, along with the rating of prior experience with people with SMI ($sr=-.294$, $p<.001$). However, in the bipolar disorder ($F(4, 215) = 7.429$, $p<.001$, $R^2=.123$) and schizophrenia ($F(4, 214) = 9.432$, $p<.001$, $R^2=.152$) conditions, we see that only the rating of prior experience with people with SMI is significant alone (Bipolar disorder: $sr=-.343$, $p<.001$, Schizophrenia: $sr=-.351$, $p<.001$). Following the pattern of in social distance, participants who had more contact, or any positive contact with people with SMI were less likely to rate the vignettes as dangerous.

**Table 9.2**

*Regression Results for the Perceived Dangerousness Scale by Disorder with Contact with People with Mental Illness and Rating of the Experience as Covariates*

| Variable | *B* | *SE* | *t* | *95% CI of B* | *p* | *sr* |
|---|---|---|---|---|---|---|
| Control Condition | | | | | | |
| Constant | 26.172 | 2.176 | 12.027 | [21.882, 30.462] | <.001 | - |
| Simple Coded Symptom | -5.265 | 1.520 | -3.464 | [-8.261, -2.269] | .001 | -.233 |
| Simple Coded Combination | -3.480 | 1.549 | -2.247 | [-6.534, -.426] | .026 | -.154 |
| Sum of Weighted Contact | -.035 | .034 | -1.013 | [-.103, .033] | .312 | -.070 |
| Overall Rated Experience | -1.613 | .588 | -2.741 | [-2.773, -.453] | .007 | -.186 |
| MDD Condition | | | | | | |
| Constant | 31.949 | 2.157 | 14.813 | [27.697, 36.201] | <.001 | - |

| | | | | | | |
|---|---|---|---|---|---|---|
| Simple Coded Symptom | -3.416 | 1.533 | -2.228 | [-6.438, -.394] | .027 | -.152 |
| Simple Coded Combination | -2.937 | 1.540 | -1.907 | [-5.973, .099] | .058 | -.131 |
| Sum of Weighted Contact | -.024 | .034 | -.708 | [-.092, .043] | .480 | -.049 |
| Overall Rated Experience | -2.615 | .588 | -4.448 | [-3.774, -1.456] | <.001 | -.294 |
| Bipolar Condition | | | | | | |
| Constant | 34.408 | 2.012 | 16.367 | [30.264, 38.552] | <.001 | - |
| Simple Coded Symptom | -1.891 | 1.481 | -1.277 | [-4.810, 1.028] | .203 | -.088 |
| Simple Coded Combination | -.682 | 1.483 | -.460 | [-3.606, 2.242] | .646 | -.032 |
| Sum of Weighted Contact | .011 | .033 | .320 | [-.055, .076] | .749 | .022 |
| Overall Rated Experience | -3.014 | .569 | -5.297 | [-4.136, -1.892] | <.001 | -.343 |
| Schizophrenia Condition | | | | | | |
| Constant | 41.082 | 2.148 | 19.122 | [36.847, 45.317] | <.001 | - |
| Simple Coded Symptom | 1.403 | 1.519 | .924 | [-1.590, 4.397] | .357 | .059 |
| Simple Coded Combination | 2.503 | 1.519 | 1.648 | [-.491, 5.498] | .101 | .105 |
| Sum of Weighted Contact | -.017 | .034 | -.484 | [-.084, .051] | .629 | -.031 |
| Overall Rated Experience | -3.230 | .584 | -5.528 | [-4.382, -2.078] | <.001 | -.351 |

**Mandated Treatment.** The final variable for assessing the impact of contact with people with SMI on stigma was mandated treatment. Similar to the previous dependent variables, we see a significant within-subjects effect of the disorder condition ($F(2.000, 460.011) = 144.941$, $p<.001$), however a nonsignificant effect of the interaction of the level of contact covariate ($F(6.000, 460.011) = 1.000$, $p=.424$; Power=.398). The between subjects test was also non-significant ($F(3, 230) = 0.181$, $p=.909$; Power=.083) and underpowered. The means of mandated treatment remain quite similar with the addition of the covariate, with only the symptom

condition showing a slight increase. The means of the disorder groups remain virtually identical. When adding in the second covariate, the rating of prior contact with people with SMI, we find similar results. The main within-subjects effect of disorder remains significant ($F$(1.997, 459.223) = 144.308, $p$<.001) however the within-subjects interaction effect ($F$(5.990, 459.223) = 0.879, $p$=.510; Power=.350) and between subjects interaction ($F$(3, 230) = 2.312, $p$=.077; Power=.577) are non-significant.

Following previous procedures, we again ran regression analyses to further understand the impact of the two covariates of interest on recommendation for various mandated treatments. See Table 9.3 for more additional results of the regression analyses. In the control condition, we found a non-significant overall model ($F$(4, 215) = 2.143, $p$=.077, $R^2$=.039), we see that only the coded information conditions were significant alone. In the MDD ($F$(4, 218) = 0.856, $p$=.491, $R^2$=.016), bipolar disorder ($F$(4, 215) = 0.917, $p$=.455, $R^2$=.017), and schizophrenia conditions ($F$(4, 217) = 1.182, $p$=.320, $R^2$=.022), we obtain non-significant models, with no variables within it proving to be significant alone.

**Table 9.3**

*Regression Results for the Mandated Treatment Scale by Disorder with Contact with People with Mental Illness and Rating of the Experience as Covariates*

| Variable | *B* | *SE* | *t* | *95% CI of B* | *p* | *sr* |
|---|---|---|---|---|---|---|
| Control Condition | | | | | | |
| Constant | 15.522 | 1.232 | 12.620 | [13.123, 17.982] | <.001 | - |
| Simple Coded Symptom | 2.184 | .868 | 2.516 | [.473, 3.895] | .013 | .171 |
| Simple Coded Combination | 2.043 | .870 | 2.350 | [.329, 3.758] | .020 | .160 |
| Sum of Weighted Contact | .006 | .019 | .299 | [-.033, .044] | .765 | .021 |
| Overall Rated Experience | -.141 | .336 | -.421 | [-.803, .521] | .674 | -.029 |
| MDD Condition | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Constant | 19.452 | .982 | 19.805 | [17.516, 21.388] | <.001 | - |
| Simple Coded Symptom | -.411 | .690 | -.596 | [-1.771, .948] | .552 | -.041 |
| Simple Coded Combination | -.164 | .695 | -.236 | [-1.535, 1.206] | .814 | -.016 |
| Sum of Weighted Contact | .017 | .016 | 1.106 | [-.013, .048] | .270 | .075 |
| Overall Rated Experience | -.419 | .267 | -1.571 | [-.944, .107] | .118 | -.107 |
| Bipolar Condition | | | | | | |
| Constant | 19.695 | .998 | 19.733 | [17.728, 21.663] | <.001 | - |
| Simple Coded Symptom | -.312 | .699 | -.447 | [-1.691, 1.066] | .655 | -.031 |
| Simple Coded Combination | .651 | .707 | .922 | [-.742, 2.044] | .358 | .063 |
| Sum of Weighted Contact | .008 | .016 | .493 | [-.023, .039] | .623 | .034 |
| Overall Rated Experience | -.329 | .270 | -1.219 | [-.860, .203] | .224 | -.084 |
| Schizophrenia Condition | | | | | | |
| Constant | 21.970 | .993 | 22.117 | [20.012, 23.928] | <.001 | - |
| Simple Coded Symptom | .185 | .696 | .265 | [-1.188, 1.557] | .791 | .018 |
| Simple Coded Combination | .488 | .702 | .694 | [-.897, 1.872] | .488 | .048 |
| Sum of Weighted Contact | .011 | .016 | .708 | [-.020, .042] | .480 | .048 |
| Overall Rated Experience | -.520 | .269 | -1.931 | [-1.050, .011] | .055 | -.131 |

***Contact with Justice-Involved People***

To complete Aim 2, we also explored the impact of being in contact with people who are justice-involved, as well as the rating of those contacts. The procedure was identical to contact with mental illness; we first ran an ANCOVA with the level of contact, a second ANCOVA adding in the rating of that contact, and finally a series of multiple regression analyses.

**Social Distance.** For the dependent variable of social distance we find both a significant within-subjects main effect ($F(2.665, 599.683) = 62.890$, $p<.001$) and interaction effect with the level of contact covariate ($F(7.996, 599.683) = 2.373$, $p=.016$; Power=.894). The average score of social distance for each disorder increased marginally. Because we found significant effects, we looked to the pairwise comparisons to see where the differences may lie. When contrasting the disorders alone, we find that the control and MDD conditions had significantly lower scores as compared to the bipolar disorder ($p<.001$) and schizophrenia conditions ($p<.001$), but the control and MDD were not significantly different. Additionally, bipolar disorder had significantly lower ratings of social distance as compared to schizophrenia ($p<.001$). We also found a significant between-subjects effect ($F(3, 225) = 4.716$, $p=.003$; Power=.894), indicating difference by information condition. While the mean for the combination condition remained the same as in Aim 1, the mean for the symptom condition increased, and the mean for the label condition decreased. We then looked to the pairwise comparisons of the information groups, finding that the only significant difference was between the label and combination conditions ($p=.034$), with the combination condition eliciting a greater preference for social distance. When examining the interaction between disorder and condition, we find significant only in the schizophrenia condition. We find that the symptom condition ($p=.037$) and the label condition ($p<.001$) elicit less desire for social distance as compared to the combination condition. We then ran another ANCOVA which added the rating of prior experience to the model. While the within-subjects main effect of disorder remains significant ($F(2.647, 595.486) = 58.336$, $p<.001$), the interaction is no longer significant ($F(7.940, 595.486) = 0.981$, $p=.449$; Power=.460). Additionally, the between-subjects effect also becomes non-significant ($F(3, 225) = 0.525$, $p=.667$; Power=.157).

We then moved on to the regression analyses to further explore the impact of interacting with people who have offended and how positive that experience was. Detailed results can be found in Table 10.1. For the control condition, we found a significant result for the full model ($F(4, 193) = 16.912$, $p<.001$, $R^2=.264$). When examining the individual variables, we see that the two coded variables for information condition, as well as the rating of prior experience with justice-involved people ($sr=-.276$, $p<.001$), are significant alone, which replicates the finding regarding contact with people with SMI. In the MDD condition ($F(4, 196) = 11.333$, $p<.001$, $R^2=.191$), we find that like the control, both of the information conditions as well as the rating of experience were significant alone ($sr=-.297$, $p<.001$). For the bipolar disorder ($F(4, 196) = 9.999$, $p<.001$, $R^2=.172$) and schizophrenia ($F(4, 196) = 8.597$, $p<.001$, $R^2=.152$) conditions, we again see replications of the results from contact with people with SMI. In the bipolar disorder condition, only the coded label condition and the rating of prior experience ($sr=-.378$, $p<.001$) were significant alone, and in the schizophrenia condition only the rating of prior experience was significant alone ($sr=-.375$, $p<.001$). These findings are consistent with the pattern that the more positive someone rates an interaction with someone who was justice-involved, the less likely they are to prefer to be social distanced.

**Table 10.1**

*Regression Results for the Social Distance Scale by Disorder with Contact with People who are Justice-Involved and Rating of the Experience as Covariates*

| Variable | *B* | *SE* | *t* | *95% CI of B* | *p* | *sr* |
|---|---|---|---|---|---|---|
| Control Condition | | | | | | |
| Constant | 10.970 | .766 | 14.329 | [9.460, 12.480] | <.001 | - |
| Simple Coded Label | 4.874 | .651 | 7.492 | [3.591, 6.157] | <.001 | .497 |
| Simple Coded Combination | 1.920 | .648 | 2.963 | [.642, 3.197] | .003 | .211 |
| Sum of Weighted Contact | -.024 | .018 | -1.347 | [-.060, .011] | .179 | -.098 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Overall Rated Experience | -.989 | .251 | -3.942 | [-1.484, -.494] | <.001 | -.276 |
| MDD Condition | | | | | | |
| Constant | 11.088 | .733 | 15.136 | [9.643, 12.533] | <.001 | - |
| Simple Coded Label | 3.008 | .621 | 4.841 | [1.782, 4.233] | <.001 | .330 |
| Simple Coded Combination | 1.436 | .617 | 2.329 | [.220, 2.652] | .021 | .166 |
| Sum of Weighted Contact | -.031 | .017 | -1.802 | [-.065, .003] | .073 | -.129 |
| Overall Rated Experience | -1.094 | .239 | -4.572 | [-1.566, -.622] | <.001 | -.297 |
| Bipolar Condition | | | | | | |
| Constant | 12.544 | .684 | 18.388 | [11.195, 13.894] | <.001 | - |
| Simple Coded Label | 1.652 | .581 | 2.843 | [.506, 2.799] | .005 | .201 |
| Simple Coded Combination | .712 | .576 | 1.236 | [-.424, 1.849] | .218 | .089 |
| Sum of Weighted Contact | -.013 | .016 | -.836 | [-.045, .018] | .404 | -.060 |
| Overall Rated Experience | -1.263 | .233 | -5.651 | [-1.703, -.822] | <.001 | -.378 |
| Schizophrenia Condition | | | | | | |
| Constant | 13.850 | .694 | 19.962 | [12.482, 15.218] | <.001 | - |
| Simple Coded Label | .302 | .590 | .512 | [-.861, 1.465] | .609 | .037 |
| Simple Coded Combination | .331 | .585 | .566 | [-.822, 1.484] | .572 | .041 |
| Sum of Weighted Contact | -.002 | .016 | -.102 | [-.034, .030] | .918 | -.007 |
| Overall Rated Experience | -1.271 | .227 | -5.609 | [-1.718, -.824] | <.001 | -.375 |

**Perceived Dangerousness.** The perceptions of dangerousness results were similar to the results of exposure to SMI. When including the coded information conditions along with the level of contact with people with justice-involvement, the within-subjects main effect is significant ($F(2.574, 555.952) = 123.249$, $p<.001$), but the interaction is not ($F(7.722, 555.952) = 0.646$, $p=.733$; Power=.297). Differing from the dangerous analyses while examining contact

with people with SMI, the between-subjects effect was not significant in this model ($F(3, 216) = 2.065$, $p=.106$; Power=.524). Despite the non-significance, we do see slight increases in the mean ratings of dangerousness across the four disorders and in the label condition, but slight decreases in the means of the symptom and combination conditions. We then added in the second covariate, rating of prior experience with people who have offended, and find the same results. The within-subjects main effect of disorder was significant ($F(2.562, 553.332) = 117.708$, $p<.001$), but neither the within-subjects ($F(7.685, 553.332) = 0.471$, $p=.871$; Power=.217) nor between-subjects ($F(3, 216) = 0.793$, $p=.499$; Power=.220) interactions were. The marginal changes in the means followed the same pattern as when only the level of contact was added to the model.

Again, the regression analyses gave a much better picture of how the variables are impacting perceptions of dangerousness and can be found in Table 10.2. In the both the control ($F(4, 193) = 4.297$, $p=.002$, $R^2=.083$) and MDD ($F(4, 192) = 4.076$, $p=.003$, $R^2=.080$) conditions, we see that one of the information conditions and the rated experience of prior contact (Control: $sr=-.219$, $p=.002$; MDD: $sr=-.247$, $p<.001$) are the only variables to be have significant predictive ability alone. In the bipolar disorder ($F(4, 193) = 6.070$, $p<.001$, $R^2=.114$) and schizophrenia ($F(4, 193) = 8.765$, $p<.001$, $R^2=.156$) conditions, the rating of prior experience is the only variable that is significant alone (Bipolar disorder: $sr=-.328$, $p<.001$; Schizophrenia: $sr=-.360$, $p<.001$). These results follow the same pattern as before, where more positive ratings of prior experience with people who have been justice-involved lead to less perceptions of dangerousness.

**Table 10.2**

*Regression Results for the Perceived Dangerousness Scale by Disorder with Contact with People who are Justice-Involved and Rating of the Experience as Covariates*

| Variable | *B* | *SE* | *t* | *95% CI of B* | *p* | *sr* |
|---|---|---|---|---|---|---|
| Control Condition | | | | | | |
| Constant | 25.400 | 1.937 | 13.112 | [21.579, 29.221] | <.001 | - |
| Simple Coded Label | 5.320 | 1.642 | 3.240 | [2.081, 8.559] | .001 | .229 |
| Simple Coded Combination | 2.125 | 1.648 | 1.289 | [-1.126, 5.376] | .199 | .093 |
| Sum of Weighted Contact | .012 | .045 | .267 | [-.077, .102] | .790 | .019 |
| Overall Rated Experience | -1.968 | .637 | -3.092 | [-3.224, -.712] | .002 | -.219 |
| MDD Condition | | | | | | |
| Constant | 29.360 | 1.913 | 15.351 | [25.587, 33.133] | <.001 | - |
| Simple Coded Label | 4.171 | 1.634 | 2.553 | [.948, 7.394] | .011 | .183 |
| Simple Coded Combination | 1.622 | 1.615 | 1.004 | [-1.565, 4.808] | .317 | .073 |
| Sum of Weighted Contact | .013 | .045 | .292 | [-.075, .102] | .771 | .021 |
| Overall Rated Experience | -2.178 | .624 | -3.492 | [-3.409, -.948] | <.001 | -.247 |
| Bipolar Condition | | | | | | |
| Constant | 32.781 | 1.800 | 18.214 | [29.231, 36.331] | <.001 | - |
| Simple Coded Label | 2.781 | 1.528 | 1.820 | [-.233, 5.794] | .070 | .125 |
| Simple Coded Combination | 1.725 | 1.516 | 1.138 | [-1.266, 4.717] | .257 | .078 |
| Sum of Weighted Contact | .033 | .042 | .791 | [-.050, .117] | .430 | .054 |
| Overall Rated Experience | -2.815 | .588 | -4.787 | [-3.975, -1.655] | <.001 | -.328 |
| Schizophrenia Condition | | | | | | |
| Constant | 38.981 | 1.848 | 21.094 | [35.336, 42.626] | <.001 | - |
| Simple Coded Label | -.752 | 1.566 | -.480 | [-3.840, 2.337] | .632 | -.035 |
| Simple Coded Combination | 2.242 | 1.550 | 1.446 | [-.817, 5.300] | .150 | .105 |
| Sum of Weighted Contact | .050 | .043 | 1.170 | [-.034, .134] | .243 | .085 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Overall Rated Experience | -3.191 | .601 | -5.307 | [-4.378, -2.005] | <.001 | -.360 |

**Mandated Treatment.** The final set of analyses for Aim 2 looked at the impact of the variables regarding prior contact with offenders on support of various mandated treatment options and can be found in Table 23. In the first ANCOVA we found a significant main effect of within-subjects disorder ($F(1.974, 450.172) = 143.748$, $p<.001$) but a non-significant interaction effect with the level of contact covariate ($F(5.923, 450.172) = 0.588$, $p=.738$; Power=.235). The mean scores for each disorder increased very little after adding this covariate. However, we did find a significant between-subjects interaction ($F(3, 228) = 2.702$, $p=.046$; Power=.652), indicating that we may find differences in the information conditions. When examining the pairwise comparisons, we find a significant difference between the symptom and label conditions ($p=.026$), with the label condition eliciting greater desire to mandate treatment. This result was not found in the initial ANOVA in Aim 1, so this effect is due to the addition of the contact covariate. We also looked to the interaction effects of disorder by information condition and found that the differences in the symptom versus label condition only appear in the bipolar disorder condition ($p=.004$). The only other significant difference we find in the interaction is in the schizophrenia condition, where the label condition elicits greater need for mandated treatment as compared to the combination condition ($p=.038$). We then added the second covariate, the rating of prior experience, and found that the significant interaction effects went away. We were left with a significant main effect of the within-subjects ANCOVA ($F(1.991, 453.980) = 140.126$, $p<.001$) but a non-significant interaction effect with the contact covariates ($F(5.973, 453.980) = 1.262$, $p=.274$; Power=.496) and a nonsignificant between-

subjects interaction of the covariates ($F(3, 228) = 1.384$, $p$=.248; Power=.365). The slight changes in the means were consistent with the addition of level of contact only.

We then ran the regression analyses to further understand the role the covariates may be playing in a properly powered analysis. However, the findings were much less significant than in previous analyses and followed the previous pattern of mandated treatment when examining contact with people with SMI (Table 10.3). The control condition was the only significant model ($F(4, 195) = 2.751$, $p$=.029, $R^2$=.054), and the only variable to provide significance alone was the label information condition. MDD ($F(4, 197) = 0.974$, $p$=.423, $R^2$=.020), bipolar disorder ($F(4, 194) = 1.093$, $p$=.361, $R^2$=.022) and schizophrenia ($F(4, 196) = 1.453$, $p$=.218, $R^2$=.029) were all non-significant.

**Table 10.3**

*Regression Results for the Mandated Treatment Scale by Disorder with Contact with People who are Justice-Involved and Rating of the Experience as Covariates*

| Variable | *B* | *SE* | *t* | *95% CI of B* | *p* | *sr* |
|---|---|---|---|---|---|---|
| Control Condition | | | | | | |
| Constant | 14.633 | 1.079 | 13.556 | [12.504, 16.762] | <.001 | - |
| Simple Coded Label | -2.708 | .916 | -2.958 | [-4.514, -.902] | .003 | -.209 |
| Simple Coded Combination | -.331 | .906 | -.365 | [-2.118, 1.457] | .716 | -.026 |
| Sum of Weighted Contact | .023 | .025 | .914 | [.027, .073] | .362 | .665 |
| Overall Rated Experience | .067 | .352 | .192 | [-.626, .761] | .848 | .014 |
| MDD Condition | | | | | | |
| Constant | 19.438 | .815 | 23.858 | [17.831, 21.045] | <.001 | - |
| Simple Coded Label | .248 | .690 | .412 | [-1.076, 1.645] | .681 | .030 |
| Simple Coded Combination | .184 | .684 | .270 | [-1.165, 1.534] | .788 | .019 |
| Sum of Weighted Contact | .028 | .019 | 1.470 | [-.010, .065] | .143 | .105 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Overall Rated Experience | -.425 | .266 | -1.599 | [-.950, .099] | .112 | -.114 |
| Bipolar Condition | | | | | | |
| Constant | 19.445 | .832 | 23.370 | [17.804, 21.086] | <.001 | - |
| Simple Coded Label | .385 | .706 | .546 | [-1.007, 1.778] | .586 | .040 |
| Simple Coded Combination | 1.045 | .700 | 1.493 | [-.336, 2.425] | .137 | .108 |
| Sum of Weighted Contact | .021 | .019 | 1.091 | [-.017, .059] | .276 | .079 |
| Overall Rated Experience | -.326 | .271 | -1.204 | [-.861, .208] | .230 | -.087 |
| Schizophrenia Condition | | | | | | |
| Constant | 21.546 | .809 | .26.638 | [19.951, 23.141] | <.001 | - |
| Simple Coded Label | -.366 | .685 | -.535 | [-1.717. .984] | .593 | -.039 |
| Simple Coded Combination | .190 | .677 | .281 | [-1.145, 1.526] | .779 | .020 |
| Sum of Weighted Contact | .031 | .019 | 1.633 | [-.006, .069] | .104 | .117 |
| Overall Rated Experience | -.466 | .263 | -1.769 | [-.986, .054] | .079 | -.127 |

**Aim 3**

To address aim 3, which sought to measure the impact of knowledge, as measured by the MAKS, has on the three measures of stigma, we again ran into the same problems with power as in Aim 2. Therefore, we will again discuss the significant results of the ANCOVAs, but also report on regression analyses. Means for each ANCOVA can be found in Table 11.1.

**Table 11.1**

*Descriptive Statistics for Vignette Conditions with Knowledge as a Covariate*

| Predictor | Social Distance | | Dangerousness | | Mandated Treatment | |
|---|---|---|---|---|---|---|
| | *M* | *SE* | *M* | *SE* | *M* | *SE* |
| Information Condition | | | | | | |
| Label | 9.611 | .346 | 25.606 | .934 | 17.947 | .402 |
| Symptom | 7.728 | .362 | 23.251 | .979 | 18.548 | .408 |
| Combination | 8.612 | .347 | 24.778 | .967 | 18.792 | .404 |
| Disorder Condition | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Control | 7.906 | .250 | 20.050 | .631 | 15.244 | .340 |
| MDD | 7.568 | .243 | 22.881 | .643 | 18.785 | .269 |
| Bipolar | 8.811 | .237 | 25.038 | .636 | 18.949 | .268 |
| Schizophrenia | 10.316 | .245 | 30.210 | .660 | 20.726 | .262 |

***Social Distance***

We began with running the first ANCOVA using social distance as an outcome, and we found a significant main effect of within-subjects disorder ($F(2.815, 624.980) = 63.321$, $p<.001$) but a non-significant interaction effect with the standardized knowledge covariate ($F(2.815, 624.980) = 0.696$, $p=.546$; Power=.193). In each of the disorder groups, after accounting for knowledge of mental illness, there was a marginal increase in stigmatizing attitudes. The between-subjects interaction was significant ($F(2, 222) = 4.684$, $p=.003$), indicating that the effect of information on preferences for social distance is influenced by how much one knows about mental illness. We find that the label condition still elicits greater stigma than the symptom condition ($p<.001$), however the label condition also now elicits significantly greater than the combination condition as well ($p=.043$). There was also a small change in the effect of the information by disorder interaction; in the bipolar disorder vignette, there is no longer a significant difference between the symptom and label conditions.

We then ran regressions to further understand the impact of knowledge on the dependent variables in an adequately powered analysis. More detailed results can be found in Table 12.1. There were significant results for the control ($F(3, 229) = 17.878$, $p<.001$, $R^2=.192$), MDD ($F(3, 230) = 10.905$, $p<.001$, $R^2=.126$) and bipolar disorder ($F(3, 231) = 6.352$, $p<.001$, $R^2=.077$) conditions. In the control and MDD conditions, we found that both of the coded information condition variables, as well as the knowledge variable (Control: $sr=-.190$, $p=.004$; MDD: $sr=-.231$, $p<.001$), were significant alone. However, in both models the semi-partial statistics are

larger for the information conditions, indicating that the type of information received predicts more variance in the responses than the knowledge a participant has about mental illness. In the bipolar disorder condition, we find that knowledge of mental illness is the only variable that is significant alone ($sr$=-.243, $p$<.001). While the schizophrenia model was non-significant overall, ($F(3, 231) = 1.893$, $p$=.132, $R^2$=.024), if we look at the individuals variables, we see that knowledge is significant ($sr$=-.153, $p$=.020).

**Table 12.1**

*Regression Results for the Social Distance Scale by Disorder with Knowledge as a Covariate*

| Variable | *B* | *SE* | *t* | *95% CI of B* | *p* | *sr* |
|---|---|---|---|---|---|---|
| Control Condition | | | | | | |
| Constant | 12.386 | 1.546 | 8.011 | [9.339, 15.432] | <.001 | - |
| Simple Coded Symptom | -3.967 | .606 | -6.544 | [-5.161, -2.772] | <.001 | -.399 |
| Simple Coded Combination | -2.180 | .602 | -3.618 | [-3.367, -.993] | <.001 | -.234 |
| Knowledge | -.098 | .034 | -2.915 | [-.164, -.032] | .004 | -.190 |
| MDD Condition | | | | | | |
| Constant | 12.891 | 1.517 | 8.496 | [9.902, 15.881] | <.001 | - |
| Simple Coded Symptom | -2.487 | .596 | -4.172 | [-3.662, -1.312] | <.001 | -.267 |
| Simple Coded Combination | -1.547 | .588 | -2.629 | [-2.707, -.388] | .009 | -.172 |
| Knowledge | -.118 | .033 | -3.577 | [-.183, -.053] | <.001 | -.231 |
| Bipolar Condition | | | | | | |
| Constant | 14.285 | 1.472 | 9.706 | [11.385, 17.185] | <.001 | - |
| Simple Coded Symptom | -1.110 | .578 | -1.923 | [-2.248, .028] | .056 | -.126 |
| Simple Coded Combination | -.372 | .572 | -.650 | [-1.500, .755] | .516 | -.041 |
| Knowledge | -.122 | .032 | -3.813 | [-.185, -.059] | <.001 | -.243 |
| Schizophrenia Condition | | | | | | |
| Constant | 13.759 | 1.522 | 9.038 | [10.759, 16.759] | <.001 | - |
| Simple Coded Symptom | -.181 | .595 | -.304 | [-1.353, .991] | .762 | -.020 |
| Simple Coded Combination | -.035 | .589 | -.059 | [-1.196, 1.126] | .953 | -.004 |
| Knowledge | -.077 | .033 | -2.341 | [-.142, -.012] | .020 | -.153 |

***Perceived Dangerousness***

Similar results were found for the perceptions of dangerousness outcome. In the within-subjects analysis the main effect of disorder was significant ($F(2.602, 546.446) = 130.921$, $p<.001$) but we again found a non-significant interaction effect with the standardized knowledge covariate ($F(7.806, 546.446) = 0.909$, $p=.507$; Power=.422). The means for each disorder stay virtually identical to those in Aim 1. Also like the results in Aim 1, the between-subjects test of information remains non-significant ($F(2, 210) = 1.545$, $p=.216$; Power=.326), nor is the interaction with the knowledge covariate ($F(3, 210) = 2.563$, $p=.056$; Power=.626). With the addition of the covariate, we see a slight reduction in the means for the symptom and combination conditions, but an increase in the mean for the label condition.

Only the control ($F(3, 227) = 4.958$, $p=.002$, $R^2=.062$) and MDD ($F(3, 227) = 4.358$, $p=.005$, $R^2=.055$) conditions produced significant regression models (Table 12.2). In the control condition regression, the coded symptom condition and knowledge ($sr=-.133$, $p=.046$) were the two variables that provided significant information alone. The semi-partial correlation value was larger for the information condition variable, indicating that it held more weight than knowledge. In the MDD condition, we also found that the coded symptom condition and knowledge ($sr=-.172$, $p=.009$) were the significant variables. However, in this case, the knowledge variable produced a larger semi-partial correlation. The bipolar disorder condition model was not significant ($F(3, 228) = 2.605$, $p=.053$, $R^2=.034$), but if we look at the variable breakdown we do find that knowledge did offer significant predictive ability alone ($sr=-.146$, $p=.027$). Finally, the schizophrenia condition model was also non-significant ($F(3, 228) = 2.162$, $p=.093$, $R^2=.028$), and only the combination information condition variable was significant alone.

**Table 12.2**

*Regression Results for the Perceived Dangerousness Scale by Disorder with Knowledge as a Covariate*

| Variable | *B* | *SE* | *t* | *95% CI of B* | *p* | *sr* |
|---|---|---|---|---|---|---|
| Control Condition | | | | | | |
| Constant | 27.607 | 3.872 | 7.131 | [19.978, 35.237] | <.001 | - |
| Simple Coded Symptom | -4.761 | 1.503 | -3.168 | [-7.722, -1.800] | .002 | -.207 |
| Simple Coded Combination | -2.483 | 1.510 | -1.644 | [-5.458, .493] | .102 | -.109 |
| Knowledge | -.168 | .084 | -2.004 | [-.334, -.003] | .046 | -.133 |
| MDD Condition | | | | | | |
| Constant | 33.440 | 3.947 | 8.473 | [25.663, 41.217] | <.001 | - |
| Simple Coded Symptom | -3.670 | 1.536 | -2.389 | [-6.697, -.643] | .018 | -.158 |
| Simple Coded Combination | -2.067 | 1.522 | -1.358 | [-5.065, .932] | .176 | -.090 |
| Knowledge | -.224 | .086 | -2.620 | [-.393, -.056] | .009 | -.172 |
| Bipolar Condition | | | | | | |
| Constant | 33.457 | 3.803 | 8.798 | [25.963, 40.951] | <.001 | - |
| Simple Coded Symptom | -2.367 | 1.494 | -1.585 | [-5.310, .576] | .114 | -.104 |
| Simple Coded Combination | -.792 | 1.479 | -.535 | [-3.707, 2.123] | .593 | -.035 |
| Knowledge | -.184 | .083 | -2.223 | [-.347, -.021] | .027 | -.146 |
| Schizophrenia Condition | | | | | | |
| Constant | 36.566 | 4.008 | 9.122 | [28.667, 44.464] | <.001 | - |
| Simple Coded Symptom | 1.522 | 1.579 | .336 | [-1.591, 4.634] | .336 | .064 |
| Simple Coded Combination | 3.310 | 1.565 | .036 | [.226, 6.395] | .036 | .140 |
| Knowledge | -.134 | .087 | .124 | [-.306, .037] | .124 | -.102 |

***Mandated Treatment***

The final set of analyses looked at the impact of knowledge on mandating treatment. In the ANCOVA, we found both a significant within-subjects main effect ($F(2.017, 445.694) = 143.487$, $p<.001$) and a significant interaction between knowledge and the conditions ($F(6.050, 445.694) = 2.582$, $p=.010$; Power=.891), although the between-subjects effect of information was

not significant ($F(2, 221) = 1.160$, $p$=.315; Power=.253), nor is the interaction with the knowledge covariate ($F(3, 221) = 0.253$, $p$=.859; Power=.098). When examining the means of the disorder and information conditions, we see that they remain about the same from those found in Aim 1, apart from the control condition seeming to elicit greater support to be mandated into treatment than originally found. When studying the interaction results, we see that this difference is especially salient in the control-label condition, where those who receive a label of "no disorder" tend to promote treatment significantly less than those who are in the symptom or combination condition.

The regressions for mandated treatment tell a similar story, with most of the significance being found in the control condition. More details can be found in Table 12.3. The control condition is the only significant model ($F(3, 228) = 4.862$, $p$=.003, $R^2$=.061), however the only significant variables in the model are those related to the information condition. The MDD ($F(3, 232) = 0.417$, $p$=.741, $R^2$=.005), bipolar disorder ($F(3, 229) = 0.980$, $p$=.403, $R^2$=.013) and schizophrenia ($F(3, 231) = 0.339$, $p$=.797, $R^2$=.004) conditions were all non-significant, with knowledge never appearing to be significant in any of the models.

**Table 12.3**

*Regression Results for the Mandated Treatment Scale by Disorder with Knowledge as a Covariate*

| Variable | *B* | *SE* | *t* | *95% CI of B* | *p* | *sr* |
|---|---|---|---|---|---|---|
| Control Condition | | | | | | |
| Constant | 12.931 | 2.127 | 6.080 | [8.740, 17.121] | <.001 | - |
| Simple Coded Symptom | 2.612 | .837 | 3.119 | [.962, 4.262] | .003 | .204 |
| Simple Coded Combination | 3.528 | .830 | 3.047 | [.893, 4.163] | .003 | .199 |
| Knowledge | .051 | .046 | 1.103 | [-.040, .142] | .271 | .073 |
| MDD Condition | | | | | | |
| Constant | 20.162 | 1.699 | 11.864 | [16.813, 23.510] | <.001 | - |

| | | | | | | |
|---|---|---|---|---|---|---|
| Simple Coded Symptom | -.451 | .665 | -.679 | [-1.761, .858] | .498 | -.045 |
| Simple Coded Combination | -.107 | .661 | -.162 | [-1.409, 1.195] | .871 | -.011 |
| Knowledge | -.031 | .037 | -.837 | [-.104, .042] | .403 | -.055 |
| Bipolar Condition | | | | | | |
| Constant | 20.298 | 1.719 | 11.808 | [16.911, 23.685] | <.001 | - |
| Simple Coded Symptom | -.496 | .675 | -.734 | [-1.826, .835] | .463 | -.049 |
| Simple Coded Combination | .535 | .671 | .796 | [-.788, 1.857] | .427 | .053 |
| Knowledge | -.030 | .037 | -.801 | [-.134, .044] | .424 | -.053 |
| Schizophrenia Condition | | | | | | |
| Constant | 20.755 | 1.684 | 12.323 | [17.436, 24.073] | <.001 | - |
| Simple Coded Symptom | .080 | .661 | .122 | [-1.222, 1.382] | .903 | .008 |
| Simple Coded Combination | .609 | .657 | .928 | [-.685, 1.904] | .355 | .061 |
| Knowledge | -.001 | .037 | -.016 | [-.073, .072] | .987 | -.001 |

## Chapter 4: Discussion

The current study sought to answer three major questions. First, is there a difference in stigma of the three disorders of serious mental illness (SMI), and is this impacted by the type of information that is provided to participants? Second, can the level of perceived stigma be mitigated by either the amount of, or how positive prior contact with either people with SMI or prior justice-involvement has been? And finally, does having more knowledge about mental illness reduce stigmatizing attitudes. Overall, we found that there is a difference in the way that each disorder is stigmatized; specifically, schizophrenia tends to receive the most negative ratings, followed by bipolar disorder, then MDD. The rates of stigma were impacted by the type of information shown, with the label condition eliciting the most stigma. The level of prior contact with people with SMI or justice-involvement tended not to play a large role in predicting stigmatizing outcomes, however how positive one rating prior contact did. People who had

positive contact with either of these groups tended to rate the vignettes as significantly less stigmatizing. Finally, knowledge of mental illness seemed to reduce stigmatizing attitudes, but inconsistently across the vignette conditions.

**Information Presented Has a Varying Effect on Stigma**

Two of the key findings of the study were assessed via Aim 1, where schizophrenia was the disorder to elicit the most stigma, and the label condition was the most stigmatizing way to present information. Schizophrenia being the most stigmatized condition is consistent with other literature measuring the stigma experienced by people with schizophrenia (Angermeyer et al., 2003; Angermeyer & Schulze, 2001; Świtaj et al, 2009; Thornicroft et al., 2009). The description of paranoia and hallucinations led 89% of the participants given the symptom only condition to accurately identify the vignette, which also indicates a greater association between the symptomology given in the current study and the diagnosis. The ability to identify the disorder without the label is likely why there were no differences across information condition. This does not, however, mean that schizophrenia can be easily identified by members of the public, as we did not test other types of clinical presentations of the disorder that may be less common (e.g., catatonic schizophrenia).

The label condition elicited the most stigma as compared to the symptom and combination conditions, which is consistent with prior research on the stigmatizing effects of mental illness labels (Diaz, 2021; Eno Louden et al., 2018; Hall et al., 2019; Link et al., 1989; Ruiz & Miller, 2004; Stroud, 2018). The impact of information was significant as a main effect with social distance as a measure of stigma, but only significant in interaction effects for perceived dangerousness and mandated treatment. For perceptions of dangerousness, the label condition was significant for the control and MDD conditions. For mandated treatment, it was

only significant for the control condition. It makes sense that the effect of the label condition was lower in the mandated treatment outcome, as people provided with the "no disorder" vignette should be less likely to mandate treatment. However, the effect of labeling leading to greater preference to social distance and perceive certain groups as dangerous is notable and critical to analyze further to prevent differential treatment (Batastini et al., 2014; Bourassa, 2018; Prenzler et al., 2013; Ruiz & Miller, 2004).

Additionally, the troubled person control was significantly more stigmatized in the label condition, which only states that a person was arrested and does not have a mental illness. In the label condition, the control disorder had the second highest rating of social distance, only behind schizophrenia. This finding may be identifying the stigma that people hold against those who offend, with participants viewing someone who offends without mental illness as more serious and less safe to interact with as compared to those who offend but also have labels of major depression or bipolar disorder. While this seems to contradict some prior research which finds that vignettes depicting symptoms of bipolar disorder are considered to be more dangerous and unpredictable than people with MDD or no disorder (Wolenstein & Meyer, 2009), other research does find that labels of mental illness can have a mitigating effect on perceived culpability, depending on the type of crime committed by a person (Barnett et al., 2007; Barnett et al., 2004; Sabbagh, 2011). This study is the first to the authors knowledge that demonstrates that providing additional information of certain disorders, such as the clinical symptoms being experienced, reduces perceptions of stigma in some disorders. While not every disorder made it to statistical significance, the differences are still notable and should be further explored.

### *Differences Across the Dependent Variables*

Other notable results from the ANOVAs of disorder and information conditions include how perceptions of dangerousness and a preference to mandate people into treatment were barely affected by the information condition. Specifically, neither of these two outcomes had a significant main effect of the information condition, and the type of information shown to participants only mattered when it came to the control condition and MDD. While this makes sense that these two outcomes were impacted by information the same way, as perceptions of dangerousness are often the driving force of supporting mandated treatment (Corrigan & Watson, 2005; Torrey & Zdanowicz, 2001; Watson et al., 2005), it was surprising that labels of disorders did not always elicit greater stigma than the symptom or combination conditions. Research has shown that due to misled notions that mental illness is heavily related to violence and crime, even the slightest indication of mental illness, such as our symptom condition, led people to jump to ideas that the vignettes were more dangerous and needs treatment more (Corrigan & Watson, 2005; Marie & Miles, 2008). However, when it comes to social distance, people may be more inclined to consider the experiences that a person is having before determining how much they want to interact with them. Studies have found that despite the large correlation found between perceptions of dangerousness and social distance, the rating of social distance for certain disorders isn't predicted by their ratings of perceived dangerousness (Marie & Miles, 2008). For example, people may still believe a vignette to be dangerous, but be comfortable casually socializing with them. The label condition elicited significantly greater preference for distance as compared to the symptom condition, and still showed some differences form the combination condition. These results suggest that people may be unclear on what disorders actually are, which leads to a susceptibility to the negative labeling effects, seeing as

when provided when the label of a disorder they tend to react more negatively than when they are given a narrative description of symptoms. Additionally, it may indicate that misconceptions of labeled disorders can be ameliorated by providing context on the symptomatic experience a person is having or greater familiarity and knowledge of mental illness (Axer et al., 2010; Corrigan & Watson, 2007; Corrigan et al., 2003; Corrigan et al., 2001)

In the analyses regarding perception of dangerousness, we found similar findings to those of social distance, barring the lack of significant difference across information conditions. There are significant differences in perceptions of dangerous across each disorder and the control, no matter what information was given. This is consistent with prior research that has found that people differentially respond to mental illness descriptions, depending on what disorder is presented (Marie & Miles, 2008). As many participants in the symptom condition believed the control group to represent generalized anxiety, this result seems to rank these disorders and their symptoms by how dangerous they are, with schizophrenia being the most dangerous, followed by bipolar disorder, major depressive disorder and the troubled person condition. These results suggest that even if a person does not know what disorder they are reading about, the symptoms associated with each of the disorders are equally dangerous to the labels themselves. This is consistent with some prior research that has found that even if a person cannot label a disorder, their realization that symptomology of mental illness is present may still elicit stigmatizing attitudes (Anglin et al., 2013). It was interesting, however, that the control group was stigmatized the most in the label condition, as compared to the symptom and combination conditions describing the control. This may be indicative of the baseline perceptions of dangerousness for a person who has committed a crime, without removing any of the leniency that perceptions of a person having a mental illness may elicit. As previously mentioned, findings regarding leniency

after being provided with mental illness information can be found in sentencing research, where depending on the type of crime committed (e.g., non-violent or violent), mental illness information can serve as a mitigating factor (Barnett et al., 2007; Barnett et al., 2004; Sabbagh, 2011). Therefore, when the vignette simply committed a theft and participants could not attribute the act to mental illness the person may seem more dangerous. But, in the conditions where participants were allowed to guess that the vignette may be anxious or were told about the experience of typical mental distress, it seems as though they perceived less danger.

For mandated treatment, the results followed the hypothesizes regarding the disorders. People were most likely to endorse mandated treatment to those diagnosed with schizophrenia, regardless of what information they received about their symptomology. This is consistent with prior research that finds that schizophrenia-spectrum disorders are the most likely to result in involuntary treatment (Curley et al., 2016; Kelly et al., 2004). Bipolar disorder and major depression also led participants to indicate that they should be mandated to treatment more than the control condition, and like schizophrenia, the information they received about the disorders did not moderate this effect. However, in the control condition, we see how the information provided plays a role. Those who were only offered a label of "no disorder" were significantly less likely to mandate treatment as compared to those who were provided with only a description of a troubled person or the combination of the troubled person with a "no disorder" label attached. This result sheds light on the idea that people may be over-pathologizing individuals who experience normal daily struggles, such as those described in the 'troubled person' condition and will endorse them receiving certain treatments against their will even if they are aware that they are not diagnosed with a disorder of mental illness. It is also possible that people

are mandating treatment/hospitalization to the vignette because of the offense committed, rather than symptomology presented.

**Prior Positive Contact, Not How Much Contact, Reduces Stigma**

The results are consistent with previous literature by indicating that positive prior contact with people either severe mental illness or justice-involvement makes people less likely one is to stigmatize them (Axer et al., 2010; Corrigan et al., 2001; Corrigan et al., 2001; Couture & Penn, 2003; Link & Cullen, 1986). The lack of significance of intimacy of such contact was notable and bodes well for any sort of stigma interventions using contact. Additionally, findings replicated between contact with mental illness and justice-involvement, possibly indicating that contact with only one of these groups may reduce stigma towards both. Overall, results of this aim provide support for the notion that positive prior experiences with stigmatized groups reduces stigmatizing attitudes, regardless of the amount of prior contact. Further, the amount of contact does not seem to impact stigmatizing attitudes consistently, which may be congruent with the notion of the U-shaped pattern of extreme intimacy with people in these populations (Batastini et al., 2014; Broussard et al., 2012; Corrigan & Niewegloski, 2019; Phelan & Basow, 2007).

The regression results for social distance illustrate the power of positive contact with both people with mental illness and those who have been justice-involved in reducing stigma. For both social distance and perceived dangerousness, in every disorder condition, we found that a higher rating of prior experiences with these groups led to lower scores on the social distance measure. This was interesting, as the actual amount of contact with these groups was only significant in the MDD and bipolar disorder conditions, only regarding contact with people with SMI and only when social distance was the outcome measure. This indicates that the amount of

contact that a person has is significantly less important than the contact being a positive experience, which is a notion that can be used when designing stigma reduction programs. Another notable finding is the value of the semi-partial correlation increasing as disorders become more severe and are known to elicit more stigma (e.g., the value for schizophrenia is higher than bipolar disorder and MDD). This indicates that the importance of having prior experience with people in these groups is greater when dealing with disorders that tend to be more severe and more stigmatized (Corrigan & Penn, 1999). These findings may be very influential to groups and agencies working to reduce stigma of justice-involved people with mental illness, by providing more evidence to suggest that creating a safe space for people to interact with these groups of people may be a cheap and effective way to create more positive attitudes.

**Knowledge May Reduce Certain Types of Stigma**

The final key finding comes from results of the effect of knowledge as a possible mitigating factor of stigma, but further research is required, starting with a better measure of knowledge of SMI. While results were inconsistent in significance, the trend was consistent with previous literature, in that those who had greater knowledge of SMI tended to report less stigmatizing attitudes towards the vignettes (Cassidy & Erdal, 2020; Corrigan & Watson, 2007; Corrigan et al., 2003; Corrigan & Penn, 1999; Couture & Penn, 2003; Holmes et al., 1999; Penn et al., 1994). There were, however, some differences in the impact of knowledge by the dependent variable and the disorder condition. Regarding social distance, we found that greater knowledge reduced stigmatizing attitudes in a significant way for each of the four disorder conditions. When examining perceptions of dangerousness, we find that knowledge is still effective in reducing stigma of the control, MDD and bipolar disorder conditions, however it was

not a significant predictor of the stigma of schizophrenia. This is somewhat inconsistent with prior literature regarding knowledge and stigma of SMI, which tends to show that knowledge (as measured by educational interventions) reduces perceptions of aggression and violence in people with schizophrenia (Compton et al., 2006; Martínez-Zambrano et al., 2013). However, knowledge of SMI is a difficult construct to measure, and as the scale had a sub-par alpha value, this result could be due to measurement error rather than a true reflection of the population.

**Limitations**

There were notable limitations to the current study. First, as discovered upon analysis, we were underpowered to conduct repeated measures ANCOVAs. While using regression analyses was sufficient for the aims of the current study, ANCOVAs provide more context regarding pairwise comparisons of the conditions. Additionally, the third aim sought to understand the effect of knowledge on stigma of mental illness and justice-involvement, however the knowledge scale was not as reliable as desired. While measuring knowledge of mental illness disorders is a difficult task and only few measures attempt to do so, more research is needed to create a reliable measure of knowledge to study the impact on stigma in such contexts. Additionally, this was a convenience sample, and while steps were taken to ensure the highest quality of data possible, collecting data through crowdsourcing platforms can still be a limitation.

**Implications**

The current study sought to provide insight as to how members of the public respond to various presentations of mental health information. Mental illness been documented in numerous forms for hundreds of years, yet the acceptance of mental illness and those experiencing it has changed drastically over time. Recently, the treatment of mental illness has made great strides in

both medicinal and therapeutic techniques, yet judgment by the public is still an area needing improvement (Corrigan & Kleinlein, 2005; Lauber et al., 2005).

Much of the fear and discomfort that people may hold against those with mental illness stems from misunderstanding, which may develop in a variety of ways. One way is that many people simply don't know much about mental health disorders (Pescosolido et al., 2008). Schools aren't required to teach material regarding psychopathologies, and a lack of education on the topic can lead to confusion of what disorders are, the various ways in which they can present, and how severe they may be. Additionally, this absence of education can create misconceptions about both etiology and treatment of disorders (von dem Knesebeck et al., 2013; von dem Knesebeck et al., 2014), which may be exacerbated by the presentation of false or exaggerated information about mental illness from the media, both fictional and nonfictional (Chan & Yanos, 2018; Stuart, 2006). Mental illness is prevalent in film and television, and is often shown in characters who are uncontrollable, severely disordered and very often villainous (Percival & Meyer, 2017; Quintero & Riles, 2018). While researchers cannot deny that there is a connection between mental illness and criminal behavior, this connection is weak at best and does not accurately represent such populations well (Corrigan & Watson, 2005; Halle et al., 2020; Peterson et al., 2014). Yet, this representation of those with mental illness as violent and criminal can influence the ways in which people think about mental illness, especially if they have limited prior knowledge of the disorders.

Therefore, finding ways in which we can begin correcting common negative associations people have regarding mental illness, especially in the context of justice involvement, may help to reduce the differential treatment that they can be subjected to. Understanding how people react to mental illness information presented in varying degrees of specificity can help us begin to

recognize ways in which stigmatized beliefs may be spread and maintained. While the current study was conducted on the general public, it has implications in a number of domains.

One of the most influential areas that may benefit from corrections in how we discuss mental illness is in the court system. The use of mental illness information in the courts has been shown to change the ways in which jurors both convict and sentence (Aono et al., 2019; Montgomery et al., 2005; Sloat & Frierson, 2005). Courts often provide information regarding both a diagnostic label and how that diagnosis was reached, but it is not required to provide information past the label. Therefore, jurors and judges may be forced to rely on their own experiences with or preconceived notions of mental illness, rather than making decisions based on the facts of a case. As findings of the study did suggest that offering symptom information, either alone or in combination with a label, somewhat ameliorated the labeling effect, it would be beneficial to guide lawyers, judges, and the judicial system in general to encourage psychological expert testimony regarding mental illnesses when they are brought up in court proceedings. By doing so, we would be able to offer defendants with mental illnesses more fair and impartial treatment by justice-actors.

Gaining understanding as to how education of mental illness plays a role in perceptions of people with mental illness may be instrumental in educational interventions. For example, with the relationship between mental illness knowledge and reduced stigma perceptions found, we can now continue advocating for mental illness teachings being provided to areas such as schools or agencies who often interact with mental illness. By providing education early, we may be able to reduce the seriousness of stigmatizing attitudes prior to their development (Lindow et al., 2020; Ma et al., 2020). Additionally, by including education as part of trainings for agencies such as courts, police departments and more, such workplaces may have better outcomes for both

staff and consumers of services by facilitating interactions that are based upon knowledge and training rather than fear and assumptions.

Lastly, mental illness is discussed in various ways in the public. As previously mentioned, the media has grown fond of depicting mental illness in characters, but often does not label disorders, leading viewers see mental illness, but possibly mislabeling it themselves. When considering discussion with friends and family about mental health information, it is common to give both labels and descriptions of what someone is experiencing (e.g., "I was diagnosed with X because I was experiencing Y and Z"), but it is very likely that even with both pieces of information, assumptions can be made. Understanding how different information presentations can affect attitudes of people such as family and friends can be extremely beneficial in helping patients discuss their experiences with family and friends to garner the most support, and for family members to understand how the way that they speak about loved one's pathologies may have long term effects. This research could lead to the creation of educational interventions for both patients and their families to understand the best ways to communicate about the disorder between each other, and people outside of the family. Promoting such communication may benefit the patient by making them feel more accepted and supported by their family upon receiving a diagnosis and may benefit families through empowering them to understand and best communicate with their loved ones. Ultimately, if we can find a way to speak about mental illness in the least stigmatizing way, we can hopefully reduce stigma of others and self-stigma but may benefit patients on their treatment path.

Considering the results of the study, future directions should investigate the impact of providing symptom information along with disorders, especially in the case of schizophrenia, which has diverse ways that it can present. Specifically, some symptom descriptions were

designed to be the most basic and common set of symptoms for disorders. Yet, we know that not every person exhibits the same symptoms for a single disorder. For example, schizophrenia may appear as described, with notable symptoms being paranoia, avoidant and possibly experiencing hallucinations. But other forms of schizophrenia, such as catatonic, may elicit different ideas of stigma from the public. Future research may want to provide less common symptom descriptions to further test the effect of knowledge and disorder recognition on stigma. Additionally, we should continue work to understand the impact of knowledge of mental illness on stigma, with one of the first steps being the creation of a reliable tool that measures general mental illness knowledge. Finally, the findings regarding positive interactions with people with severe mental illness should be taken very seriously, as this may be an area of intervention that is cheap, relatively easy to implement, but most importantly extremely effective.

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## Appendix A

*1. Label Vignettes*

*1a. Control (troubled person)*

Jim is a 27 year-old man who was recently arrested for theft after stealing some items from a neighbor's apartment. After being arrested, the police department discovered that Jim has no personal history of mental illness.

*1b. Schizophrenia*

John is a 27 year-old man who was recently arrested for theft after stealing some items from a neighbor's apartment. After being arrested, the police department discovered that John is diagnosed with schizophrenia.

*1c. Major Depression*

Matt is a 27 year-old man who was recently arrested for theft after stealing some items from a neighbor's apartment. After being arrested, the police department discovered that Matt is diagnosed with major depressive disorder.

*1d. Bipolar Disorder*

Robert is a 27 year-old man who was recently arrested for theft after stealing some items from a neighbor's apartment. After being arrested, the police department discovered that Robert is diagnosed with bipolar disorder.

*2. Symptom Vignettes*

*2a. Control (troubled person)*

Jim is a 27 year-old man who was recently arrested for theft after stealing some items from a neighbor's apartment. Most of the time, life is pretty okay for Jim. While nothing much is going wrong in Jim's life, he sometimes feels worried, a little sad, or has trouble sleeping at night. Jim feels that at times things bother him more than they bother other people, and that when things go wrong, he sometimes gets nervous or annoyed. Otherwise, Jim is getting along pretty well. He enjoys being with other people and although Jim sometimes argues with his family, Jim has been getting along pretty well with his family.

What disorder (if any) is being described?

a. Generalized anxiety disorder
b. Major depressive disorder
c. Schizophrenia
d. Bipolar disorder
e. Post-traumatic stress disorder
f. Obsessive-compulsive disorder
g. Antisocial personality disorder
h. Borderline personality disorder
i. No disorder
j. Other (specify)

*2b. Schizophrenia*

John is a 27 year-old man who was recently arrested for theft after stealing some items from a neighbor's apartment. Sometimes, John has some serious concerns in his life. During these times, he thinks that people are making disapproving comments and talking behind his back. John becomes convinced that people are spying on him and that they can hear what he is thinking. These thoughts can go on for more than six months at a time. When John is having these thoughts, he loses his ability to participate in his usual work and family activities and retreats to his home, eventually spending most of his day in his room. Even in his room, John hears voices even though no one is around. These voices tell him what to do and what to think.

What disorder (if any) is being described?

a. Generalized anxiety disorder
b. Major depressive disorder
c. Schizophrenia
d. Bipolar disorder
e. Post-traumatic stress disorder
f. Obsessive-compulsive disorder
g. Antisocial personality disorder
h. Borderline personality disorder
i. No disorder
j. Other (specify)

*2c. Major Depression*

Matt is a 27 year-old man who was recently arrested for theft after stealing some items from a neighbor's apartment. Matt has periods in his life lasting two weeks or more where he feels really down. Matt wakes up in the morning with a flat, heavy feeling that sticks with him all day long. He doesn't enjoy things the way he normally would. In fact, nothing seems to give him pleasure. Even when good things happen, they don't seem to make Matt happy. He pushes through his days, but it is really hard. The smallest tasks are difficult to accomplish. He finds it hard to concentrate on anything. He feels out of energy and runs out of steam. And even though Matt feels tired, when night comes, he can't get to sleep. Matt feels pretty worthless, and very discouraged. Matt's family notices that he is not himself during these times.

What disorder (if any) is being described?

a. Generalized anxiety disorder
b. Major depressive disorder
c. Schizophrenia
d. Bipolar disorder
e. Post-traumatic stress disorder
f. Obsessive-compulsive disorder
g. Antisocial personality disorder
h. Borderline personality disorder
i. No disorder
j. Other (specify)

*2d. Bipolar Disorder*

Robert is a 27 year-old man who was recently arrested for theft after stealing some items from a neighbor's apartment. Sometimes, Robert finds that he has a lot more energy than usual, and feels really good about himself, like he can do anything. During these times, he can get by with much less sleep than he usually needs, sometimes sleeping only 2 or 3 hours per night. His thoughts race through his head so quickly that he can't keep up with them, and people complain that he is talking too fast. Robert has extra energy and is very active during these times, often doing things that get him into trouble. For example, he often buys things he can't afford, spending all of his money on things he doesn't need rather than paying bills. He has gotten into serious financial trouble several times and has been evicted from his apartment several times for not paying his rent. His family notices that he is not himself when he is doing these things, but Robert insists there is nothing wrong. He can become very irritable and get into arguments with others.

What disorder (if any) is being described?

a. Generalized anxiety disorder
b. Major depressive disorder
c. Schizophrenia
d. Bipolar disorder
e. Post-traumatic stress disorder
f. Obsessive-compulsive disorder
g. Antisocial personality disorder
h. Borderline personality disorder
i. No disorder
j. Other (specify)

*3. Combination Vignettes*

*3a. Control (troubled person)*

Jim is a 27 year-old man who was recently arrested for theft after stealing some items from a neighbor's apartment. Most of the time, life is pretty okay for Jim. While nothing much is going wrong in Jim's life, he sometimes feels worried, a little sad, or has trouble sleeping at night. Jim feels that at times things bother him more than they bother other people, and that when things go wrong, he sometimes gets nervous or annoyed. Otherwise, Jim is getting along pretty well. He enjoys being with other people and although Jim sometimes argues with his family, Jim has been getting along pretty well with his family. After being arrested, the police department discovered that Jim has never been diagnosed with a mental illness.

*3b. Schizophrenia*

John is a 27 year-old man who was recently arrested for theft after stealing some items from a neighbor's apartment. Sometimes, John has some serious concerns in his life. During these times, he thinks that people are making disapproving comments and talking behind his back. John becomes convinced that people are spying on him and that they can hear what he is thinking. These thoughts can go on for more than six months at a time. When John is having these thoughts, he loses his ability to participate in his usual work and family activities and retreats to his home, eventually spending most of his day in his room. Even in his room, John hears voices even though no one is around. These voices tell him what to do and what to think. After being arrested, the police department discovered that John is diagnosed with schizophrenia.

*3c. Major Depression*

Matt is a 27 year-old man who was recently arrested for theft after stealing some items from a neighbor's apartment. Matt has periods in his life lasting two weeks or more where he feels really down. Matt wakes up in the morning with a flat, heavy feeling that sticks with him all day long. He doesn't enjoy things the way he normally would. In fact, nothing seems to give him pleasure. Even when good things happen, they don't seem to make Matt happy. He pushes through his days, but it is really hard. The smallest tasks are difficult to accomplish. He finds it hard to concentrate on anything. He feels out of energy and runs out of steam. And even though Matt feels tired, when night comes, he can't get to sleep. Matt feels pretty worthless, and very discouraged. Matt's family notices that he is not himself during these times.

After being arrested, the police department discovered that Jim is diagnosed with major depressive disorder.

*3d. Bipolar Disorder*

Robert is a 27 year-old man who was recently arrested for theft after stealing some items from a neighbor's apartment. Sometimes, Robert finds that he has a lot more energy than usual, and feels really good about himself, like he can do anything. During these times, he can get by with much less sleep than he usually needs, sometimes sleeping only 2 or 3 hours per night. His thoughts race through his head so quickly that he can't keep up with them, and people complain that he is talking too fast. Robert has extra energy and is very active during these times, often doing things that get him into trouble. For example, he often buys things he can't afford, spending all of his money on things he doesn't need rather than paying bills. He has gotten into serious financial trouble several times and has been evicted from his apartment several times for not paying his rent. His family notices that he is not himself when he is doing these things, but Robert insists there is nothing wrong. He can become very irritable and get into arguments with others. After being arrested, the police department discovered that Jim is diagnosed with bipolar disorder.

## Appendix B

*B1. Social Distance*

Please answer the following questions regarding the person described in the vignette on a scale of 0 (Definitely Unwilling) to 3 (Definitely Willing).

0 = definitely unwilling, 1= probably unwilling, 2= probably willing, 3= definitely willing

1. How willing would you be to move next door to the person you just read about?
2. How willing would you be to spend an evening socializing with the person you just read about?
3. How willing would you be to make friends with the person you just read about?
4. How willing would you be to start working closely with the person you just read about?
5. How willing would you be to have the person you just read about marry into the family?

*B2. Dangerousness*

Please answer the following questions regarding the person described in the vignette on a scale of 0 (Strongly Disagree) to 5 (Strongly Agree).

0 = strongly disagree, 1 = disagree, 2 = not sure but probably disagree, 3 = not sure but probably agree, 4 = agree, 5 = strongly agree

1. If the person I just read about lived nearby, I would not allow my children to go to the movie theater alone.
2. If the person I just read about applied for a teaching position at a grade school and was qualified for the job, I would recommend hiring them.
3. One important thing about the person I just read about is that you cannot tell what they will do from one minute to the next.
4. If I knew the person I just read about has been a patient of a mental health hospital, I will be less likely to trust them.
5. The main purpose of mental hospitals should be to protect the public from people similar to the person I just read about.
6. If the person I just read about lived nearby, I would not hesitate to allow young children under my care on the sidewalk.
7. Although the person I just read about may seem all right, it is dangerous to forget for a moment that they could be mentally ill.
8. There should be a law forbidding the person I just read about the right to obtain a hunting license.
9. It is likely that the person I just read about would do something violent toward other people.
10. It is likely that the person I just read about would do something violent toward himself.

*B3. Recommended Treatment*

0= Not at all Serious, 1= Not Very Serious, 2= Somewhat Serious, 3= Very Serious

1. How serious do you consider the problem of the person you just read about to be?

   1= Not at all likely, 2= Somewhat unlikely, 3= Somewhat likely, 4= Very likely

1. If you saw the person you just read about committing this crime, how likely would you be to call the police to alert them?

Please answer the following questions regarding the person you just read about

1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

How much do you agree that the person you just read about should do any of the following:

1. Talk to family and friends about his problems?
2. Talk to a minister, priest, rabbi, or other religious leader?
3. Go to a general medical doctor for help?
4. Go to a psychiatrist for help?
5. Go to a therapist, or counselor, like a psychologist, social worker, or other mental health professional for help?
6. Go to a spiritual or natural healer for help?
7. Join a self-help group where people with similar problems help each other?
8. Take non-prescription medication, like over the counter sleeping pills?
9. Take prescription medication?
10. Check into a medical hospital?

Some cities and states have laws that force people with certain conditions into treatment. How much do you agree that the person you just read about should have to do any of the following:

1. Get treatment at a clinic or from a doctor?
2. Take a prescription medication to control his behavior?
3. Be admitted to a hospital for treatment?
4. Be admitted to a hospital for treatment if he is dangerous to himself?
5. Be admitted to a hospital for treatment if he is dangerous to others?

## Appendix C

*C1. Level of Contact Report- Mental Illness*

Please read each of the following statements carefully. After you have read all the statements below, indicated 0 (No) or 1 (Yes) by the statements that best depict your exposure to persons with a severe mental illness. Note that disorders of severe mental illness include Major Depressive Disorder, Schizophrenia and Bipolar Disorder.

0= No, 1= Yes

1. I have watched a movie or television show in which a character depicted a person with mental illness. (3)
2. My job involves providing services/treatment for persons with a severe mental illness. (8)
3. I have observed, in passing, a person I believe may have had a severe mental illness. (2)
4. I have observed persons with a severe mental illness on a frequent basis. (5)
5. I have a severe mental illness. (12)
6. I have worked with a person who had a severe mental illness at my place of employment. (6)
7. I have never observed a person that I was aware had a severe mental illness. (1)
8. My job includes providing services to persons with a severe mental illness. (7)
9. A friend of the family has a severe mental illness. (9)
10. I have a relative who has a severe mental illness. (10)
11. I have watched a documentary on the television about severe mental illness. (4)
12. I live with a person who has a severe mental illness. (11)

1. Overall, how would you rate your prior experiences interacting with those with a severe mental illness? (1 = Extremely Positive, 5= Extremely Negative, NA=9)

*C2. Level of Contact Report- Criminal Activity*

Please read each of the following statements carefully. After you have read all the statements below, indicated 0 (No) or 1 (Yes) by the statements that best depict your exposure to crime and the criminal justice system.

0= No, 1= Yes

1. I have watched a movie or television show in which a character depicted a person who is criminally active. (3)
2. My job involves providing services/treatment for persons who are criminally active. (8)
3. I have observed, in passing, a person I believe may have been criminally active. (2)
4. I have observed persons who are criminally active on a frequent basis. (5)
5. I have been criminally active. (12)
6. I have worked with a person who was criminally active at my place of employment. (6)
7. I have never observed a person that I was aware was criminally active. (1)
8. My job includes providing services to persons who are criminally active. (7)

9. A friend of the family is criminally active. (9)
10. I have a relative who is criminally active. (10)
11. I have watched a documentary on the television people who are criminally active. (4)
12. I live with a person who is criminally active. (11)

a. Overall, how would you rate your prior experiences interacting with those who are criminally active? (1 = Extremely Positive, 5= Extremely Negative, NA=9)

## Appendix D

*D1. Modified Community Attitudes Towards the Mentally Ill (CAMI)*

The following statements express various opinions about mental illness and the mentally ill. The mentally ill refers to people needing treatment for mental disorders but who are capable of independent living outside a hospital. Please indicate the response which most accurately describes your reaction to each statement. It's your first reaction which is important. Don't be concerned if some statements seem similar to ones you have previously answered. Please be sure to answer all statements.

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. There is something about people with mental illness that makes it easy to tell them from normal people
3. We need to adopt a far more tolerant attitude toward people with mental illness in our society
4. People with mental illness don't deserve our sympathy
5. I would not want to live next door to someone who has been mentally ill
6. It is frightening to think of people with mental problems living in residential neighborhoods
7. Mental illness is an illness like any other
8. Virtually anyone can become mentally ill
9. The best therapy for many people with mental illness is to be part of a normal community
10. People with mental health problems are far less of a danger than most people suppose
11. People with mental health problems should not be given any responsibility
12. Most people who were once patients in a mental hospital can be trusted as babysitters

*D2. Modified Attitudes Towards People Who Criminally Offend*

The statements listed below describe different attributes toward people who commit crime in the United States. The word that will be used to describe someone who commits crime is "offender". There are no right or wrong answers, only opinions. You are asked to express your agreement to each statement. Indicate your opinion by clicking the option that best describes your personal attitude. Please answer every item.

1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5=strongly agree

1. Offenders are different from most people.
2. Only a few offenders are really dangerous.
3. Offenders never change.
4. Most offenders are victims of circumstance and deserve to be helped.
5. Offenders have feelings like the rest of us.
6. It is not wise to trust an offender too far.

7. I think I would like a lot of offenders.
8. Bad prison conditions just make offenders more bitter.
9. Give an offender an inch and he'll take a mile.
10. Most offenders are stupid.
11. Offenders need affection and praise just like anybody else.
12. You should not expect too much from an offender.
13. Trying to rehabilitate offenders is a waste of time and money.
14. You never know when an offender is telling the truth.
15. Offenders are no better or worse than other people.
16. You have to be constantly on your guard with offenders.
17. In general, offenders think and act alike.
18. If you give an offender your respect, he'll give you the same.
19. Offenders only think about themselves.
20. There are some offenders I would trust with my life.
21. Offenders will listen to reason.
22. Most offenders are too lazy to earn an honest living.
23. I wouldn't mind living next door to an offender.
24. Offenders are just plain mean at heart.
25. Offenders are always trying to get something out of somebody.
26. The values of most offenders are about the same as the rest of us.
27. I would never want one of my children dating an offender.
28. Most offenders have the capacity for love.
29. Offenders are just plain immoral.
30. Offenders should be under strict, harsh discipline.
31. In general, offenders are basically bad people.
32. Most offenders can be rehabilitated.
33. Some offenders are pretty nice people.
34. I would like associating with some offenders.
35. Offenders respect only brute force.
36. If a person does well in a jail or prison, he should be let out on parole.

## Appendix E

*Self-Report Symptom Knowledge*

1= strongly agree, 2= somewhat agree, 3= neither agree nor disagree,
4= somewhat disagree, 5= strongly disagree

1. I have very little knowledge about mental illness

*Mental Health Knowledge Schedule*

1= strongly disagree, 2= somewhat disagree, 3= neither agree nor disagree,
4= somewhat agree, 5= strongly agree, 6=don't know

1. Most people with mental health problems want to have paid employment
2. If a friend had a mental health problem, I would know what advice to give them to get professional help
3. Medication can be an effective treatment for people with mental health problems
4. Psychotherapy (for example, talking therapy or counseling) can be an effective treatment for people with mental health problems
5. People with severe mental health problems can fully recover
6. Most people with mental health problems go to a healthcare professional to get help
7. Depression is a type of mental illness
8. Stress is a type of mental illness
9. Schizophrenia is a type of mental illness
10. Bipolar disorder (manic depression) is a type of mental illness
11. Drug addiction is a type of mental illness
12. Grief is a type of mental illness

## Vita

Elena Vaudreuil is a doctoral student at the University of Texas at El Paso working towards her Ph.D. in Legal Psychology. She received her undergraduate degree from the University of Wisconsin-Madison in 2016, majoring in psychology. During her time in Madison, she worked in the Center for Healthy Minds assisting in research on the benefits of meditation. She also interned at the Mendota Mental Health Institute, which sparked her passion to pursue research regarding people with severe mental illness and how it may intertwine with the criminal justice system. She then attended Rosalind Franklin School of Medicine and Science to pursue a Master of Science degree in Clinical Counseling while studying psychopathy and criminal behavior and completing her clinical internship at an emergency psychiatric hospital in Chicago. Elena chose to concentrate on research, leading her to the University of Texas at El Paso to work with Dr. Jennifer Eno Louden in the Mental Health and Criminal Justice Lab. There, she uses her prior experiences to study people with various disorders of severe mental illness and how they become involved in the justice-system, how they are treated upon entry, and perceptions of justice-involved people with mental illness. She hopes that her research will ultimately influence policy on all levels, creating a safer and more fair experience for people with mental illness in the justice-system, and promoting ways to reduce stigma both in and out of a corrections context.

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