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Dangerous or Misunderstood?: Attributes Ascribed to Individuals With Mental Illness and Their Effects on Perceived Dangerousness

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DANGEROUS OR MISUNDERSTOOD?: ATTRIBUTES ASCRIBED TO INDIVIDUALS WITH MENTAL ILLNESS AND THEIR EFFECTS ON PERCEIVED DANGEROUSNESS

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Mental illness within the United States is fairly common; as of 2017 roughly 1 in 5 U.S. adults experienced a mental illness and 1 in 25 experienced a severe mental illness (NAMI, 2019). Despite these prevalence rates, there are many misconceptions about individuals with a mental illness. For example individuals with mental illness are perceived as dangerous (Angermeyer & Matschinger, 2003; Marie & Miles, 2008), unpredictable (Magliano et al., 2004; Wu et al., 2020), and aggressive (Adewuya & Makanjuola, 2008; Ozmen et al., 2004), despite research that suggests they are not more likely to be violent and/or dangerous (Hochstedler Steury, 1993; Monahan et al., 2017). These negative perceptions can lead to higher unemployment rates among individuals with mental illness, social rejection from the public, and decreased help-seeking behaviors (Krupa et al., 2009). Although research has explored the roles of environmental (Stuart & Arboleda-Flórez, 2012), education (Crowe & Averett, 2015), and personal experience (Corrigan et al., 2001) in understanding the public's perception of this population, little is known about how attributes ascribed to these individuals affects perceptions of dangerousness. Therefore, this study aimed to investigate how the personal attributes of perceived unpredictability and aggression influence the relationship between perceptions of mental illness and dangerousness for the disorders of schizophrenia and substance use disorder.

More specifically, this study aimed to measure: 1) whether individuals could accurately perceive symptoms of mental illness; 2) whether unpredictability and aggressiveness mediated the relationship between mental illness and dangerousness; and 3) whether individuals with schizophrenia are perceived as more unpredictable and aggressive as well as if individuals desired more social distance from them. Results supported the hypothesis that participants would be able to accurately perceive a mental illness as well as the hypothesis that participants would rate individuals with schizophrenia as more unpredictable and aggressive. However, results did not support the hypothesis that unpredictability and aggressiveness mediate the relationship between perceptions of mental illness and dangerousness, nor did they support the hypothesis that participants would desire more social distance from individuals with schizophrenia. Such findings may improve previously ineffective anti-stigma efforts, decrease the public's desired social distance from individuals with mental illness, and, overall, improve the quality of life for individuals with mental illness.

KEYWORDS: mental illness; public; attributes; perceptions

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CHAPTER I: INTRODUCTION

In the United States (U.S.), roughly 1 in 5 adults suffer from a mental illness and 1 in 25 adults suffer from a serious mental illness (National Alliance on Mental Illness [NAMI], 2019). Despite this high prevalence, the general public continues to believe that having a mental illness is a rare and unusual. Individuals with mental illness, therefore, are often viewed as dangerous and likely to be violent (Angermeyer & Dietrich, 2006; Angermeyer & Matschinger, 2003; Marie & Miles, 2008). These negative perceptions can have life-altering consequences for individuals with mental illness, such as increased difficulty and discrimination when trying to secure a job, housing, or when seeking treatment (Link et al., 2001; Minster & Knowles, 2006; Pescosolido et al., 1999).

Research has shown that very few individuals with mental illness are violent or dangerous within their lifetime (Hochstedler Steury, 1993; Pilgrim & Rogers, 2003; Stone, 2018). Individuals with mental illness are actually more likely to be the victims of violence themselves than to be violent (Monahan et al., 2017). When individuals with mental illness do become violent, there are often extenuating circumstances that explain the violence better than the mental illness diagnosis alone. For example, environmental factors such as poverty levels, housing situations, and job security explain more variability in the violence perpetrated by individuals with mental illness than the mental illness itself (Pilgrim & Rogers, 2003; Yee et al., 2011). Additionally, the influence of substance use must also be taken into consideration at the time the individual with mental illness became violent or acted dangerously. Research shows that individuals with mental illnesses are more likely to become dangerous and/or violent when they are under the influence of a substance rather than a psychotic symptom (e.g., delusions, hallucinations, etc.) (Pilgrim & Rogers, 2003; Quigley et al., 2018; Swanson et al., 1990; Yee et

al., 2011). However, the undue perception of dangerousness among people with mental illness persists.

Because the public's understanding of the role mental illness plays in violence is skewed, it is important to understand what causes this false and negative perception. Previous studies have shown that environmental factors (e.g., media portrayal) (Minnebo & Van Acker, 2004) and personal experiences (e.g., negative interactions with people with mental illness) (Corrigan et al., 2001; Crowe et al., 2016; Martinez et al., 2011; St-Onge & Lemyre, 2018) contribute to this undue perception. However, very little research focuses on the attributes that are ascribed to the individuals with mental illness as potential contributors. In fact, research shows that the public often associates unpredictability (Cuomo et al., 2008; de Wit, 2009; Felthous, 2008) and aggressiveness (Aloia & Solomon, 2015; Cuomo et al., 2008; Ghossoub et al., 2019; Zhu et al., 2016) with individuals with mental illness, especially schizophrenia and substance use disorder. It is reasonable to speculate that people may view individuals with mental illness more dangerous because they anticipate that the individuals would act aggressively, perhaps in an unexpected manner. However, the potential mediating roles of perceived unpredictability and aggressiveness in perceived dangerousness of people with mental illness remains unstudied.

The present study aims to contribute to this gap in the literature. Specifically, first, it was investigated whether the attributes of dangerousness, unpredictability, and aggressiveness are ascribed to individuals with mental illness by the public. Second, it was proposed and tested through a mediation model that mental illness perception would be associated with perceived dangerousness, which would be mediated by perceived unpredictability and aggressiveness. Third, it was examined whether people with schizophrenia are perceived to be more

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unpredictable and aggressive as well as individuals would desire more social distance from them than people with substance use disorder.

Dangerous Verses Violent

The terms "dangerous" and "violent" are common descriptors used in studies aimed at measuring perceptions of individuals with mental illness (Angermeyer & Matschinger, 2003; Marie & Miles, 2008; Pilgrim & Rogers, 2003). Unfortunately, many studies use these descriptors interchangeably, even though they are conceptually distinct and have different associated connotations. Operational definitions of dangerous and violent are rare to come by within studies. One study, however, operationally defined dangerousness as "the potential for harm to self or others" (Pescosolido et al., 1999). No definition for the term violent was found within the studies reviewed, however. According to Merriam-Webster dictionary, dangerous is defined as, "involving possible injury, pain, harm, or loss;" whereas violent is defined as, "marked using usually harmful or destructive physical force" (Merriam-Webster's Collegiate Dictionary, n.d.).

Further, while these concepts are often used interchangeably, dangerous and violent are each conflated with conceptually related yet still distinct characteristics. Due to the lack of agreement and confusion within the literature concerning the definitions of these terms, this paper will use the following operational definition. Dangerous is operationally defined as the following: An individual's likelihood of causing harm or destruction to something or someone (Angermeyer & Dietrich, 2006; Marie & Miles, 2008; Oruč et al., 2011; Pilgrim & Rogers, 2003).

CHAPTER II: REVIEW OF THE LITERATURE

Prevalence Rates of Mental Illness

Many individuals suffer from mental illness in the United States (U.S.). In 2018, 19.1% of U.S. adults experienced a mental illness—roughly 1 in 5—while 4.6% of U.S. adults experienced a serious mental illness—roughly 1 in 25. Additionally, roughly 7% of U.S. adults are estimated to meet the criteria for a substance use disorder (NAMI, 2019). Furthermore, the annual prevalence rates among U.S. adults by disorder are as follows: a major depressive episode is experienced by 7.2% of adults, schizophrenia is experienced by less than 1%, bipolar disorder is experienced by 2.8% of adults, anxiety disorders are experienced by 19.1% of adults, posttraumatic stress disorder is experienced by 3.6% of adults, obsessive compulsive disorder is experienced by 1.2% of adults, and borderline personality disorder is experienced by 1.4% of adults (NAMI, 2019). These prevalence rates demonstrate the wide reach of mental health pervasiveness in the U.S.

Mental Illness and Dangerousness/Violence

While many may believe that individuals with mental illness are more likely to act dangerous/violently, there is a growing amount of research that supports the idea that individuals with mental illness are peaceful members of society and are no more likely to commit violent crimes than neurotypical individuals (Monahan & Arnold, 1996; Pilgrim & Rogers, 2003; Stone, 2018). Additionally, even in the studies that conclude that individuals with mental illness are more likely to commit violent crimes, it is often due to co-morbidity (e.g., substance abuse disorders) or extenuating conditions, such as poverty (Pilgrim & Rogers, 2003; Yee et al., 2011).

The rates of violence among individuals with mental illness vary from study to study, but many studies support the argument that individuals with mental illness are not more likely to be

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violent or dangerous than their neurotypical counterparts. Steury (1993) conducted a study to measure the percent of 4,921 unique defendants in Milwaukee County who were accused of a wide variety of crimes and diagnosed with a mental illness within a five-year period. These defendants were then compared to the total population of Milwaukee County within the same a five-year period (roughly 704,000). Less than 10% of all defendants had received mental health treatment prior to arrest; however, this is still roughly four times the rate of treatment for the community as a whole. Furthermore, Steury (1993) found that roughly 23 of every 1000 adult residents received treatment, whereas 89 of every 1000 defendants received treatment. He, therefore, concluded that the link between mental illness and becoming involved in the criminal justice system is present. What cannot be concluded from this study, however, is why that link exists. Therefore, it is important to investigate what about perceptions of individuals with mental illness may lead to high arrest rates for these individuals.

Violence towards others, however, is not the only type of violence that must be taken into consideration concerning individuals with mental illness. A growing body of research examining the relationship between individuals with mental illness and violence is beginning to show that while these individuals are not necessarily more likely to be violent, they are more likely to be the *victim* of violence, both at the hands of others and themselves (Monahan et al., 2017). In a follow-up report from 951 patients discharged from three U.S. mental health facilities a year prior, Monahan and colleagues (2017) found that 28% of participants had committed violence against another individual; 23% of participants had committed violence towards themselves; and 43% of participants were the victim of violence by others. Furthermore, 58% of participants were involved in one type of violence, 27% of participants were involved in two types of violence, and 7% of participants were involved in all three types of violence. Therefore, although individuals

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with mental illness may commit violent acts, it is important to take into consideration the violent acts that they are committing against themselves. Above all, though, it is important to highlight that over 50% of the participants in the sample were the *victim* of violence rather than the perpetrator. Much can be said about a population that is believed to be dangerous, but, rather, is truly one of the most vulnerable.

Role of Substance Use and Substance Use Disorders

Studies suggest that many individuals typically do not exhibit dangerous and/or violent behaviors due to their non-substance use mental disorder, but that they may commit violent acts while under the influence of alcohol or other substances. Stuart and Arboleda-Florez (2012), for example, found that while over half (61.1%) of their inmate sample ($N = 1,151$) had been diagnosed with a mental illness, and of that sample 67% of diagnoses was a substance use disorder with no other comorbid disorder. Further, 7% of the violent crimes committed by their sample were committed by individuals with a substance use disorder alone. More importantly, only 3% of the total violent crimes were committed by inmates diagnosed with a non-substance use mental disorder (e.g., bipolar disorder, depression) with no comorbid substance use disorder. Therefore, according to these statics, when an individual with mental illness commits a violent crime, they are more than likely suffering from a substance use disorder than any other disorder. A similar study conducted by Swanson et al. (1990) found that individuals diagnosed with a psychotic disorder alone were three times more likely to commit a violent crime following release from incarceration; however, individuals diagnosed with a substance use disorder alone (specifically alcohol use disorder) were 12 times more likely to commit a violent crime following release from incarceration. Further research has demonstrated that individuals with mental illness, including non-comorbid mental disorders, are often under the influence of a substance at

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the time of their arrest for a violent crime (Yee et al., 2011). Additionally, Quigley and colleagues (2018) demonstrated that individuals diagnosed with a mental disorder that includes manic features (e.g., bipolar disorder) or psychotic features (e.g., schizophrenia) are more likely to demonstrate violent behaviors while under the influence of substances. Despite the commonality of substance use disorders and being under the influence of a substance at the time of a dangerous and/or violent crime, public perception often does not take this information into account. Therefore, making the role of substance use and substance use disorders in violent crimes more well known to the public may decrease negative perceptions of other mental disorders and help to more effectively reduce violent crimes committed by individuals with mental disorders.

Social and Contextual Influences

Comorbid or co-occuring substance use is not the only factor that should be taken into consideration when examining rates of violence among individuals with a mental illness. Other influences, such as age, gender, biological sex, education level, ethnic identity, and previous experiences with mental illness play an important role in every individual's life, especially individuals with mental illness. For example, Barlati and colleagues (2019) found that, in addition to substance use and sociodemographic characteristics, the more socially accepted an individual with mental illness feels, the less likely they were to commit dangerous and/or violent acts. Further, Silver and colleagues (1999) found that individuals with mental illness who live in poor communities are less likely to be provided the care and resources that they need to function independently and healthily. This, therefore, increase the chances of turning to dangerous and/or violent crime due to a lack of care or to secure resources that they cannot obtain any other way. Studies such as these demonstrate the importance of looking beyond the mental illness and into

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other factors that may be contributing to negative public perception of individuals with mental illness.

Public Perception of Individuals with Mental Illness

Despite the fact that research does not support the idea that individuals with mental illness are not more likely to be violent or dangerous (Stone, 2018), are actually *more likely* to be the victim of violent crime (Monahan et al., 2017), and, often, have contextual and demographic factors that contribute to a difficult life (Silver et al., 1999), public perception of individuals with mental illness as dangerous has not changed compared to years ago. Rather, the stereotype that individuals with mental illness are more dangerous actually rose from 1950 to 1996, despite public education and health efforts to inform individuals otherwise (Stone, 2018). One study, however, demonstrated a positive trend toward awareness concerning mental illnesses.

While the public is becoming more aware of the serious role that mental health plays within society, they still have difficulties understanding and recognizing the symptoms of different disorders (e.g., mania vs. depression for bipolar disorder). Further, individuals continue to rate disorders such as schizophrenia as more dangerous and unpredictable, especially when they are made aware of the diagnosis. The public is also more likely to socially reject, distance themselves from, and support civil commitment for individuals with these disorders (Angermeyer & Dietrich, 2006). In addition to the labeling of specific disorders increasing negative perceptions, simply labeling someone as "mentally ill" continues to increase negative perceptions among the public. In a study conducted by Angermeyere and Matschinger (2003) as well as in a similar study conducted by Marie and Miles (2008), vignette characters who were labeled as mentally ill were perceived as being more dangerous than vignette characters that were not depicted as having a mental illness. Further, vignette characters with schizophrenia

were perceived to be the most dangerous in both studies, and participants reported that they desire more social distance from them as well. Therefore, not only does the general label of having a "mental illness" increase negative perceptions, but these negative perceptions also appear to increase in intensity depending on the mental illness.

While efforts such as anti-stigma and awareness campaigns are being made to reduce the sigma that individuals with mental illness face, stigma and prejudice continue to negatively affect the lives of individuals with mental illness. A study conducted by Link et al. (2001) found that when individuals with mental illness experienced stigma, measured in this study as the belief that they were being devalued and/or discriminated against, the self-esteem of the individual with mental illness was deeply affected. Low self-esteem for individuals with mental illness may lead to an increase in suicidality for these individuals and a decrease in help-seeking behaviors (Link et al., 2001). Further, Corrigan and colleagues (2003) found that there are two types of stigma that an individual with mental illness often faces: public stigma and self-stigma. Public stigma often takes one of the following four forms and has a negative impact on the individual with mental illness's ability to recover: withholding help, avoidance, coercive treatment, and segregated institutions. Each of these forms of stigma can be detrimental to the health and recovery of individuals with mental illness due to a loss of social connections, loss of care, and loss of rights/humanity. Self-stigma often comes due to low self-esteem that an individual with mental illness may develop over the course of their lifetime (Corrigan et al., 2003). The more self-stigma experienced by an individual, the less likely they may be to seek out and/or participate in treatment for their mental health. An example of a more direct consequence of stigma for individuals with mental illness is that of employment. Krupa et al. (2009) found that stigma against individuals with mental illness is still very present in the current field of

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employment. For example, individuals with mental illness face the stigma that they are not up to the demands of work and, therefore, are not fit for the job in the first place. Further, employers have been found to hold on to the stigma that individuals with mental illness are dangerous and unpredictable and are, again, unfit for the workplace. Other stigmatizing beliefs include: the idea that mental illnesses are not legitimate illness and is used to earn special privileges; and the idea that working is not healthy for individuals with mental illness. All these stigmatizing beliefs make it increasingly difficult for individuals with mental illness to find employment, which, in turn, leads to a high rate of unemployment and poverty among individuals with mental illness (Krupa et al., 2009).

Further, family members and significant others of individuals with mental illness are often burdened by stigma and prejudice as well. Oruč and colleagues (2011) found in their study of Balkan public perception concerning psychotic disorders that the closer the participant was to an individual diagnosed with a psychotic disorder, the more likely they were to view that individual as non-dangerous and support equal treatment for the individuals with family members being the strongest supporters of these ideas. Moreover, participants who responded as family members of individuals with a psychotic disorder showed a strong desire for individuals with mental illness to be less discriminated against compared to other respondents. Oruč and colleagues argued that this data supports their hypothesis that family members are also negatively influenced by the stigma of negative perceptions the public has concerning individuals with mental illness (Oruč et al., 2011)(Oruč et al., 2011)(Oruč et al., 2011). Therefore, reducing stigma and prejudice from public perceptions of individuals with mental illness would not only benefit those individuals personally, it may also lessen the burdens family members and significant others who often carry when associating themselves with an individual

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with mental illness. Additionally, a similar study conducted in England found that individuals who willing spent more time with individuals with mental illness were less likely to rate individuals with mental illness as dangerous or desire social distance from them on a self-report survey (Robinson & Henderson, 2019). Therefore, it appears that the more familiar and close their relationships are with individuals with mental illness, the more positive their perceptions become.

Influences on Perceptions of Individuals with Mental Illness

Attribution Theory of Mental Illness

Attribution theory for mental illness demonstrates the process by which the public arrives at the conclusion that individuals with mental illness are either responsible for their behavior making them dangerous and should be socially rejected or are not responsible for their behavior making them not dangerous and should be socially accepted (Corrigan et al., 2003; Weiner, 1995). This theory posits that behavior as a whole is believed to originate from a cognitive-emotional process: people make attributions about what the cause and controllability is of an individual's illness. This leads to inferences about the amount of responsibility that is placed on the individual for that illness and their behaviors. These inferences, then, lead to emotional reactions (i.e., pity, anger, fear) that affect the likelihood of accepting or rejecting behaviors. More specifically, when the public encounters individuals with mental illness, they will try to determine whether the individual is responsible for the mental illness and the resulting behaviors. If the public attributes the behaviors and/or situation to being in the individual with mental illness's control (i.e., due to drugs, laziness), they will likely consider the individual to be responsible for their illness. However, if the public attributes the behaviors and/or situation to being outside of the individual with mental illness's control (i.e., genetic factors, head injury),

they are less likely to consider the individual responsible for their illness. When members of the public believe individuals with mental illness are personally responsibility for their behaviors and/or situation, this may result in anger toward that individual and an increase rejecting behaviors. Additionally, the more responsible the individual is seen as being, the more dangerous the public believes the individual to be as well due to the "control" they have over their behaviors. However, if the public attributes personal responsibility for the illness as outside of the individual's control, this often results in pity and an increase in accepting behaviors. Accepting behaviors often result in the public reaching out to assist the individual with mental illness in a time of need, while rejecting behaviors often result in the public desiring social distance and punishment for the individual with mental illness (Corrigan et al., 2003; Weiner, 1995).

As an example, say that an individual with mental illness was found unconscious in the middle of the sidewalk. As the public encounters this individual, they will attempt to attribute the cause and controllability of this behavior to the individual with mental illness and, therefore, their responsibility for the behavior. The first person of the public that encounters the individual with mental illness may make the inference that they are passed out on the sidewalk due to drugs (i.e., something in the individual with mental illness's control) or wanting to trick him and mug him. This inference leads to the emotional reaction of irritation and fear, which may lead the individual to rejecting the individual with mental illness and crossing the road to avoid him. However, the second person of the public that encounters the individual with mental illness may make the inference that they are passed out on the sidewalk due to a medical condition such as a seizure or heart attack (i.e., something outside of the individual with mental illness's control). This inference leads to the emotional reaction of sympathy, which leads to the individual

accepting the individual with mental illness and calling an ambulance to take the individual to the hospital.

Individual and Contextual Factors

When aiming to understand how perceptions of individuals with mental illness form, it is important to understand how individuals with mental illness are portrayed to the public, how the public is taught to react to these individuals, and what each member of the public has personally been through concerning individuals with mental illness. Each of these factors plays an important role in shaping perceptions of individuals with mental illness.

Environmental. Aspects of an individual's environment play a role in shaping perceptions of individuals with mental illness. For example, the way that medias depict these individuals contributes to the negative view of individuals with mental illness. Acts of violence by individuals with mental illness often make headlines and run in the news cycle for weeks. This, in turn, can have a powerful influence on the view the public has of individuals with mental illness. Often, the perpetrators of violent mass shoots are speculated by the press as having mental illness, which increase public perception of individuals with mental illness as dangerous (Stuart & Arboleda-Flórez, 2012). Similarly, Minnebo and Van Acker (2004), from Belgium, determined, through the literature and their own research, that the traits most commonly used to depict characters with mental illness in television programs were that of violent and unpredictable. After surveying high school students reporting the type of television they watched and how many hours a day, they found that the high schoolers that watch more genres of television that depict individuals with mental illness as dangerous and/or unpredictable (e.g., dramas, crime shows), the more dangerous those high schoolers rated individuals with mental illness as. In contrast, television is also used reduce negative perceptions of individuals with

mental illness through anti-stigma messages and public service announcements (PSAs). Corrigan (2012), however, found that little to no research that has demonstrated these anti-stigma efforts to be successful at reducing negative perceptions of individuals with mental illness. This research, therefore, sheds light on the detrimental role television plays in increasing negative perceptions of individual with mental illness as well as how it does not appear to play the same role in decreasing those negative perceptions.

Education and Training. Training within the workplace environment has also been shown to be an important factor in influencing public perception of individuals with mental illness. Crowe and Averett (2015) conducted research in Quebec, Canada, concerning the attitudes of counselors, social workers, and psychologists towards individuals with mental illness and how training affected these attitudes. Their results indicated that education and training have a positive influence on the attitudes of those preparing to work in the mental healthcare field; however, they also found that job stress and burn out are more powerful influencers of perception. Therefore, despite initial reduction in negative perceptions that education and training provide, job stress and burn out will, ultimately, lead to an increase in negative perceptions employees have towards individuals with mental illness. Teachers must also handle and care for individuals with mental illness on a day-to-day basis. St-Onge and Lemyre (2018) of Quebec, Canada, sought to understand the mediators that may determine a teacher's attitude toward the children with mental illness they work with. Their results indicated that the more negative a teacher's attitude was towards children with mental illness, the less likely they were to believe in their chances of helping a child with mental illness. St-Onge and Lemyre stressed this importance of reducing negative perceptions of teachers because these may be the first demonstration individuals with mental illness can expect to be treated. Overall, understanding

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the influence that education and training have on decreasing negative perceptions of individuals with mental illness can add to the effectiveness of anti-stigma efforts. However, it is equally important to understand factors that may overpower education and training, such as job stress and burn out, and, ultimately, lead to overall negative perceptions of individual with mental illness.

Individual. Personal factors of an individual appear to play a vital role in the way information is processed and opinions are formed regarding individuals with mental illness. Corrigan et al. (2001) demonstrated that the moderating variable of familiarity appears to determine individual's perception of individuals with a mental illness. Within their study, familiarity was determined by how "close" participants have been with individuals with mental illness; such as, if an individual had worked with someone with mental illness, they were rated as more familiar with mental illness than an individual who only read about mental illness. When responding to vignettes and rating the dangerousness of the individuals with mental illness in the vignettes, participants who were less familiar with individuals with mental illness were more likely to rate them as dangerous and request social distance from these individuals. Furthermore, they responded that they were less likely to hire these individuals or rent property to them.

Another important factor found within the literature that contributes to perceived dangerousness and stigmatizing views of individuals with mental illness is the "ascribed humanity" given to individuals with mental illness. Martinez et al. (2011) found that the less participants viewed individuals with mental illness as human (i.e., viewed them as animalistic), the more negative their perceptions of those individuals were and the higher their desire for social distancing. Further, their results indicated that when participants read a vignette describing an individual with a mental illness behaving mentally ill, participants were more likely to label

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that individual with negative qualities, such as dangerous and unpredictable. However, when a participant read a vignette that described an individual with a mental illness behaving in socially appropriate ways and/or was said to be in remission, participants were more likely to label the individual with exaggerated humanistic qualities (i.e., not dangerous at all, desires to be socially close to the individual). Corrigan et al.'s (2001) study, therefore, demonstrates the vital role that familiarity and contact play in increasing positive perceptions of individuals with mental illness and the impact it can have on anti-stigma efforts. Similarly, Martinez et al.'s (2011) demonstrates how the public's negative perceptions of individuals with mental illness increases when they do not view them as "human" due to believing that they are dangerous and unpredictable. Therefore, increasing the perception of individuals with mental illness as "human" may go a long way in decreasing negative perceptions of them as well.

Policy. The treatment of individuals with mental illness not only depends on the perceptions of the public, but also on how the law perceives them to be. Vice versa, how the law defines and treats individuals with mental illness will often increase or decrease negative public perception, especially in sensationalized legal cases. Just how the law perceives and handles individuals with mental illness varies in intensity from state to state. Delaware, for example, states that a danger to the self means that the person will "imminently sustain serious bodily harm" (Id. at § 5001(4)). Florida takes their definition even further and states that a danger to themselves or others means, "there is [a] substantial likelihood that in the near future [the individual] will inflict serious bodily harm" (Fla. Stat. Ann. § 394.467(1)(a)(2)(b)). Pennsylvania law mandates a time period for the civil commitment statute: "[there is a] reasonable probability that death, serious bodily injury, or serious physical debilitation would ensure within 30 days" (50 Pa. Stat. and Cons. Stat. Ann. § 7301(b)(2)(i). As one can see by the

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varying level of detail and specifics, the mentally ill are at the mercy of the judge when it comes to being civilly committed. While Florida places a time limit on the potential harm that may come from an individual with mental illness, Delaware allows for more power to be placed in the hands of the judge and, therefore, increases the chances that individuals with mental illness will be civilly committed. As more judges civilly commit individuals with mental illness before they even commit a crime or act violently, the more likely the public is to perceive individuals with mental illness as a danger to society. Further, individuals who view individuals with mental illness as dangerous will be more likely to lobby for looser civil commitment statutes (Stone, 2018).

Ascribed Characteristics of Behavior

Understanding what about an individual with mental illness influences public perception that these individuals are dangerous is crucial for anti-stigma efforts as well as decreasing discrimination that individuals with mental illness face. Although research has demonstrated that perceptions of mental illness are associated with perceptions of dangerousness (Angermeyer & Matschinger, 2003), what appears to be missing from the literature are the characteristics that the public ascribes to individuals with mental illness and/or their behavior that lead to perceptions of dangerousness. Two characteristics that are commonly ascribed to individuals with mental illness and/or their behavior are unpredictability and aggression. What appears to be missing from the literature, however, is how perceptions of unpredictability and aggression indirectly affect the relationship between mental illness and dangerousness.

The Role of Unpredictability and Aggression on Perceptions of Dangerousness

Unpredictability. Regarding perceptions of unpredictability among individuals with schizophrenia specifically, one study, conducted by Magliano et al. (2004) in Italy, found that a

remarkable portion of their sample (N = 993; 54%) supported the belief that individuals with schizophrenia are unpredictable. Those who agreed with the belief that individuals with schizophrenia were unpredictable were more likely to have restrictive attitudes regarding the rights these individuals should have as patients as well as attribute the cause of the individual's schizophrenia to their personal behaviors (i.e., the use of drugs/alcohol, keeping bad company). Magliano et al. also discussed how these perceptions of individuals with schizophrenia can negatively affect public acceptance, integration, and care for individuals with schizophrenia, thus making it more difficult for these individuals to live stable lives. For example, Magliano et al. found that those who supported the belief that individuals with schizophrenia are unpredictable also supported the belief that they should be admitted into an asylum. Therefore, the belief that individuals with mental illness are unpredictable can result in the loss of rights for these individuals. Similarly, in a Chinese study conducted by Wu et al. (2020), participants were more likely to rate vignette characters with schizophrenia as "unpredictable" and "dangerous" than vignette characters with depression or generalized anxiety disorder (GAD). Participants also reported stronger desires for social distancing and withholding employment from individuals with schizophrenia compared to those with depression and GAD. This was due to the influence of increased perceptions of unpredictability and dangerousness for individuals with schizophrenia.

In a study conducted by Marie and Miles (2008) participants were more likely to desire social distance from individuals with schizophrenia as opposed to major depressive disorder. Marie and Miles argue that this is due to a lack of known exposure to individuals with psychotic disorders such as schizophrenia, while there has been a push for heightened exposure to individuals with depression in recent years. Therefore, due to the lack of known exposure, the

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public is led to believe that non-psychotic conditions less dangerous because they are more "normalized" and, therefore, more predictable. Marie and Miles state further that schizophrenia is most notable for its volatile behaviors (e.g., delusions, hallucinations, catatonia) and, therefore, leads the public to believe that these symptoms cause individuals with schizophrenia to be more likely to harm others or themselves. These studies demonstrate the detrimental effects that perceptions of unpredictability have for individuals with mental illness and, especially, individuals with schizophrenia.

Aggression. Studies also suggest that individuals with mental illness are perceived as aggressive. In an analysis of the literature, Jorm (2012) reviewed several studies highlighting the important role that perceive aggression plays. For example, Ozmen et al. (2004) found that 43.3% of their sample agreed with the statement that persons with depression are aggressive. Further, Adewuya and Makanjuola (2008) found that 57.9% of their sample endorsed three or more of the following attributes for individuals with mental illness: dangerous, lacking in self-control, aggressive, unpredictable, and/or frightening. This review of the literature not only strengthens the argument that the public views individuals with mental illness as dangerous, but also highlights the need to understand the role that perceived aggression plays in this belief more clearly to better target these negative perceptions.

Additionally, a study by Bilgin et al. (2016) assessed clinical student nurses' perceptions of aggression among patients with mental illness. Results indicated not only that participants perceived their patients to be aggressive, but also that their perceived aggression was unacceptable. More specifically, participants who perceived patients as more aggressive also perceived them as more abnormal and incomprehensible. These increased perceptions of aggression, which then leads to higher perceptions of abnormality, may lead clinical student

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nurses to being apprehensive of working with these patients. Similarly, in a study conducted by Campana and Soares (2015), families reported that aggressive behaviors by individuals with schizophrenia were reported as the most difficult part of caregiving. Family members reported both that they felt they needed professional help and had anxiety to receive this help to better handle the aggressive behaviors demonstrated by their loved one with schizophrenia. Family members also reported that they were occasionally afraid of their loved ones with schizophrenia and insecure about how best to handle their aggressive behaviors. Campana and Soares conclude that aggressive behaviors among loved ones with schizophrenia often lead to apprehension in family members to aid these individuals due to perceived dangerousness; this, in turn, may limit treatment for individuals with schizophrenia and may further complicate their disorder.

In another study by Robles-García et al. (2013), researchers aimed to measure Mexico City public understanding and perceptions of individuals with schizophrenia. Using a vignette that depicted an individual with schizophrenia, they asked participants ($N = 1038$) to rate how likely this vignette character was to be aggressive and to be dangerous. They found that, even though no aggressive behaviors were depicted in the vignette, over 50 percent of participants perceived that the vignette character was aggressive and likely to demonstrate aggressive behavior in the future. However, less than half of participants (44.6%) responded that they perceived the vignette character as dangerous. These results highlight the importance of understanding the role that perceived aggression in the relationship between mental illness and perceived dangerous. In a related study by Godfredson et al. (2011), authors aimed to measure how police perception of individuals with mental illness affect their interactions with them. More specifically, their results indicated that police use perceptions of aggression to determine whether the individual has a mental illness or not. Perceived aggression was ranked as the fourth most

common way police determine if an individual has a mental illness or not. Therefore, because perceived aggression is so commonly used to determine likelihood of mental illness, individuals with mental illness are commonly perceived to be aggressive among police and, by extension, the public.

The Present Study

Overall, research has demonstrated that the public perceives individuals with mental illness, especially individuals with schizophrenia, as unpredictable and/or aggressive. Further, to my knowledge, no research has measured perceived aggression among individuals with substance use. What is missing from the literature, then, is the part the perceptions of unpredictability and aggressiveness play on overall perceptions of dangerousness among individuals with mental illness. Stated another way, research has not yet been done to directly understand if the connection between mental illness and perceptions of dangerousness is due to the indirect effect of perceptions of unpredictability and perceptions of aggressiveness among individuals with mental illness. This study, therefore, aims to measure the indirect affect that perceptions of unpredictability and aggressiveness have on the relationship between mental illness and the perceptions of dangerousness for the purpose of increasing the effectiveness of anti- stigma and discrimination efforts by more directly targeting negative perceptions of individuals with mental illness among the public.

Further, this study aims to compare perceptions of schizophrenia and substance use disorder. While less than one percent of the population of the United States is estimated to meet the criteria for schizophrenia (National Institute of Mental Health, 2019), the public's lack of understanding and ability to equate symptoms to specific mental disorders (Angermeyer & Dietrich, 2006) often leads to heighten fears that an individual with mental illness is suffering

from a psychotic disorder such as schizophrenia. On the other hand, roughly 7% of U.S. adults are estimated to meet the criteria for a substance use disorder (NAMI, 2019). Additionally, substance use has been demonstrated to play a detrimental role in violent crime as well as violent crime among individuals with substance use (Quigley et al., 2018; Stuart & Arboleda-Flórez, 2012; Swanson et al., 1990). Despite this information, though, the public is still more likely to perceive individuals with schizophrenia as more dangerous and desire more social distance from them (Marie & Miles, 2008). This study, therefore, aims to measure if this biased perception is still present. Additionally, this study also aims to measure the role of perceptions of unpredictability and aggressiveness play in the public's biased perceptions of schizophrenia and substance use disorder.

Research Questions and Hypotheses

This study investigated three research questions. First, can individuals accurately determine if an individual is suffering from a mental illness? Based on previous findings, Hypothesis 1 was that participants will rate the vignette characters as having a mental illness.

Second, does unpredictability and aggressiveness mediate the relationship between mental illness and dangerousness? While there is no previous research that directly measures this indirect effect, based on evidence of associations among these factors, Hypothesis 2 was that perceived attributes of unpredictability and aggressiveness would mediate the relationship between mental illness perception and perceived dangerousness (Figure 1).

Third, do perceptions of unpredictability and aggressiveness as well as desire for social distancing differ between schizophrenia and substance use disorder? The present study administered vignettes that depict individuals displaying symptoms of schizophrenia as well as individuals displaying symptoms of substance use disorder. Based on previous research,

Hypothesis 3a was that participants would rate vignette characters with schizophrenia as more unpredictable; Hypothesis 3b was that participants would rate vignette characters with schizophrenia as more aggressive; and Hypothesis 3c was that participants would desire more social distance from vignette characters with schizophrenia.
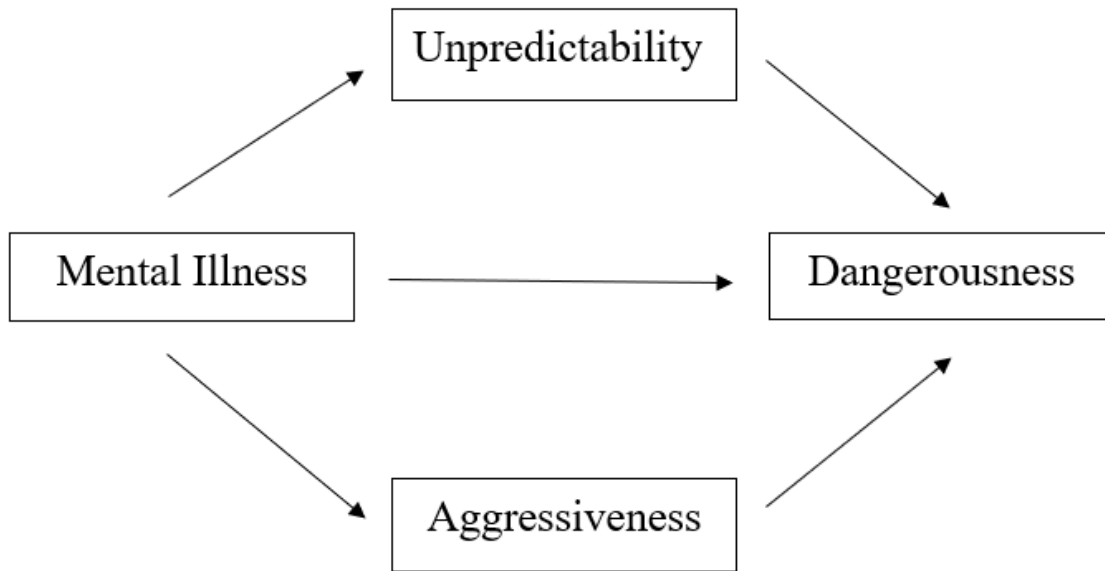
Figure 1. The Hypothesized Indirect Effect Model of the Study

CHAPTER III: METHODOLOGY

Participants

Data were drawn from college students attending Illinois State University ($N = 277$; $M=$ 21.0; $SD = 2.13$; 79.5% female; 2.9%; 8.3% Hispanic; 89.2% White). They were recruited through their student emails with a link directing them to the survey if they were interested in participating. A minimum of 200 (Fritz & MacKinnon, 2007) students were recruited to participate in this study. They were offered the opportunity to enter for the chance to win one of four $25 Amazon gift cards for their participation in the study.

Measures

Vignettes

Participants read six different vignettes throughout the study (Appendix A-B). The first, third, and fifth vignettes depicted individuals displaying symptoms of schizophrenia and the second, fourth, and sixth vignette depicted individuals displaying symptoms of substance use disorder. The vignettes were counterbalanced in order to remove the effects of biasing and measure participants' perceptions over a wider variety of symptoms. The vignettes were created for this study following vignette examples used by Pescosolido et al. (2013). For content validity, these vignettes were reviewed by ten graduate level clinical-counseling psychology students via email asking them to diagnose the characters in the vignettes with whichever diagnosis they believed to be the most fitting if a diagnosis was believed to be present. All six vignettes were correctly identified by the graduate students and found to depict DSM-5 level diagnostic criteria for either schizophrenia or substance use disorder. After reading each vignette, participants were asked on a 4-point Likert scale ranging from "Extremely Unlikely" (1) to "Extremely Likely" (4) how likely it is that the individual in the vignette has a mental illness.

Following this question, participants were asked the following open-ended question, "If you believe the individual has a mental illness, what mental illness do you believe best describes their symptoms?"

Beliefs toward Mental Illness Scale (BMI)

Perceived dangerousness of individuals with mental illness was measured using a dangerousness subscale of Beliefs toward Mental Illness Scale (BMI) (Hirai & Clum, 2000). The BMI is a 22-item scale that measures individuals' beliefs and attitudes about mental illness (Appendix C). There are three subscales: Dangerousness (5 items), Poor interpersonal and social skills (10 items), and Incurability (5 items). The items are rated on a 6-point Likert scale ranging from "completely disagree" (0) to "completely agree" (5). Past studies have established the construct validity of the BMI with college student samples (Hirai & Clum, 2000). Cronbach's alpha for reliability, using Asian students, American students, and the combined group, was obtained for each factor of the developed scales. Reliability estimates showed moderate to high internal consistency of the BMI. Reliability estimates for the Dangerousness subscale was reported as $\alpha = .75$ for all students, $\alpha = .80$ for Asian students, and $\alpha = .77$ for American students.

Personal Attributes

Perceived unpredictability and aggressiveness of individuals in the vignettes were measured using the list of 'personal attributes' identified by Angermeyer and Matschinger (2003) as potential characteristics of mental illness perceived by general public (Appendix D). Participants ranked how well each attribute describes the individual in the vignette. The five attributes included needy, unpredictable, lacking self-control, helpless, dangerous, and aggressive. Participants rated each attribute on a 4-point Likert scale ranging from "Definitely

Not True" (0) to "Definitely True" (3). The two attributes used in the present study were unpredictability and aggressiveness.

Demographics and background information

Participants reported the following demographic characteristics: age, gender, biological sex, education level, ethnic identity, and previous experiences with mental illness. Questions to assess previous experiences with mental illness included: "Have you ever been diagnosed with a mental illness?", "Have you ever sought professional help for a mental illness or a psychologically-related issue?", and "Have you ever had a close relationship with someone who has been diagnosed with a mental illness (i.e., family member, friend, partner?" Due to research that shows familiarity can increase positive perceptions of individuals with mental illness (Corrigan et al., 2001), these questions provide insight into participants familiarity with individuals with mental illness.

Procedure

Participants received an email through their Illinois State University email address describing the study rational and goals. Those who are interested in participating in the study were be instructed to click the link embedded within the email that took them to an online survey administered through Qualtrics. Before completing the study, participants provided informed consent.

After completing the demographic questions as well as familiarity with mental illness questions, participants were instructed to read the first vignette. Next, they answered questions about the likelihood that the individual in the vignette had a mental illness and were prompted to identify what mental illness was described. Participants were then be asked to answer the personal attributes questions. This process was repeated for the remaining five vignettes. After

reading the six vignettes and answering associated questions, participants completed the Beliefs Toward Mental Illness scale. Participants were then taken to the final page of the study where they followed a link a separate page to enter their email address if they wanted to be entered for the chance to win a $25 Amazon gift card.

Data Analysis Plan

Data analyses were performed using SPSS and Stata. Demographic characteristics and experiences with mental illness were explored using descriptive statistics. First, a frequency analysis was conducted to test Hypothesis 1, that participants will rate the vignette characters as having a mental illness. Second, a parallel multiple mediation structural equation model was conducted to address Hypothesis 2, that the association between labeling individuals with a mental illness with perceptions of their dangerousness was mediated by unpredictability and aggression. Finally, paired sample t-tests were used to investigate Hypotheses 3a-c, that participants will rate vignette characters with schizophrenia as more unpredictable and aggressive as well as desire more social distance from vignette characters with substance use.

CHAPTER IV: RESULTS

Descriptive statistics and correlations among the study variables are provided in Table 1 and Table 2. Specifically, Table 1 includes correlations among the (a) BMI dangerousness subscale, (b) average unpredictability, aggressiveness, and desire for social distance ratings for all vignettes, and (c) average likelihood of mental illness rating for all vignettes. Table 2 displays correlations among the (a) BMI dangerousness subscale, (b) average unpredictability, aggressiveness, and desire for social distance ratings for both the schizophrenia and substance use vignettes separately, and (c) average likelihood of mental illness ratings for both schizophrenia and substance use vignettes separately. It is also worth noting that over 50% ($n = 143$, 51.4%) of the sample reported that they had been diagnosed with a mental illness and over 85% ($n = 245$, 88.1%) reported having a close relationship with someone with mental illness.

Table 1
Correlations and Descriptive Statistics for Study Variables

	1	2	3	4	5
1. BMI Dangerousness Subscale	--		.		
2. Unpredictability Rating	.21**	--			
3. Aggressiveness Rating	.32**	.43**	--		
4. Desire for Social Distance	.36**	.40**	.38**	--	
5. Likelihood of Mental Illness	-.13*	.16**	-.13*	-.01	--
M	2.28	2.63	1.61	2.36	3.27
SD	.65	.52	.48	.46	.44
Min.	1.0	1.0	1.0	1.0	1.83
Max.	4.8	3.67	4.0	4.0	4.0
Skewness	.48	-.41	.68	-.28	-.70
Kurtosis	.42	1.0	.50	.57	.70

*Note. These ratings are representative of all six vignettes. * $p < 0.05$; ** $p < 0.01$.*

Table 2
Correlations and Descriptive Statistics for Study Variables by Vignette Diagnosis

	1	2	3	4	5	6	7	8	9
1. BMI Dangerousness Subscale	--								
Schizophrenia									
2. Unpredictability Rating	.17**	--							
3. Aggressiveness Rating	.34**	.37**	--						
4. Desire for Social Distance	.41	.36**	.38**	--					
5. Likelihood of Mental Illness	-.09	.25**	-.11	.41**	--				
Substance Use									
6. Unpredictability Rating	.15**	.32**	.33**	.19**	.01	--			
7. Aggressiveness Rating	.23**	.11	.67**	.27**	-.13*	.45**	--		
8. Desire for Social Distance	.24**	.22**	.27**	.64**	-.05	.37**	.33**	--	
9. Likelihood of Mental Illness	-.13*	.07	-.12	-.14*	.33**	.11	-.06	.10	--
M	2.28	2.93	1.66	2.63	3.53	2.33	1.55	2.66	3.02
SD	.65	.62	.52	.52	.46	.64	.53	.52	.61
Min.	1.0	1.0	1.0	1.0	1.3	1.0	1.0	1.0	1.0
Max	4.8	4.0	4.0	3.95	4.0	4.0	4.0	3.76	4.0
Skewness	.48	-.68	.59	-.05	-1.24	.04	.78	-.54	-.67
Kurtosis	.42	.94	.58	.16	2.11	-.30	.09	.49	.52

Note. These ratings are representative of all six vignettes and are separated by vignette diagnoses. $* p < 0.05$; $**p < 0.01$.

Hypothesis 1. Hypothesis 1 addressed whether participants could accurately determine if vignette characters were suffering from a mental illness. Results indicated that participants were able to recognize symptoms of mental illnesses and rated all six vignette characters as likely to have a mental illness ($M = 3.27$, $SD = .44$). This supports the hypothesis that participants would rate the vignette characters as having a mental illness as a score of three represented "more than likely" on the Likert scale and all vignette characters displayed symptoms of the respective mental illness. Further, exploratory results from a paired samples t-test analysis indicated that participants rated vignette characters depicting symptoms of schizophrenia ($M = 3.53$, $SD = .46$) as more likely to have a mental illness compared to vignette characters depicting symptoms of substance use disorder ($M = 3.02$; $SD = .61$), $t(278) = 13.36$, $p < .001$, $d = .33$.

Hypothesis 2. Hypothesis 2 addressed whether perceived unpredictability and aggressiveness mediated the relationship between the likelihood of mental illness and perceptions of dangerousness. Structural equation model analysis was conducted using Stata v 15.1 (StataCorp, 2015). In a model without the mediators, the direct effect of likelihood of mental illness on perceptions of dangerousness was negative ($\beta = -.13$; $b = -.20$, $SE = .09$, $p < .05$). However, findings from the full model with the mediators included (see Figure 2 and Table 3) indicated that the direct association between likelihood of mental illness and perceptions of dangerousness was negative but only reached marginal significance ($b = -.17$, $p < .06$). Likelihood of mental illness was positively associated with unpredictability ($b = .19$, $p < .008$) and negatively associated with aggressiveness ($b = -.14$, $p < .03$). Aggressiveness, in turn, was positively associated with and perceptions of dangerousness ($b = .35$, $p < .001$), whereas unpredictability was only marginally associated with perceptions of dangerousness ($b = .15$, $p < .08$). Monte Carlo simulations were used to test significance of the mediation effects (Iacobucci

et al., 2007). Results did not support hypotheses as perceptions of unpredictability ($b = .03$, p =.17) and aggressiveness ($b = -.05$, p =.07) did not mediate the relationship between likelihood of mental illness and perceptions of dangerousness.
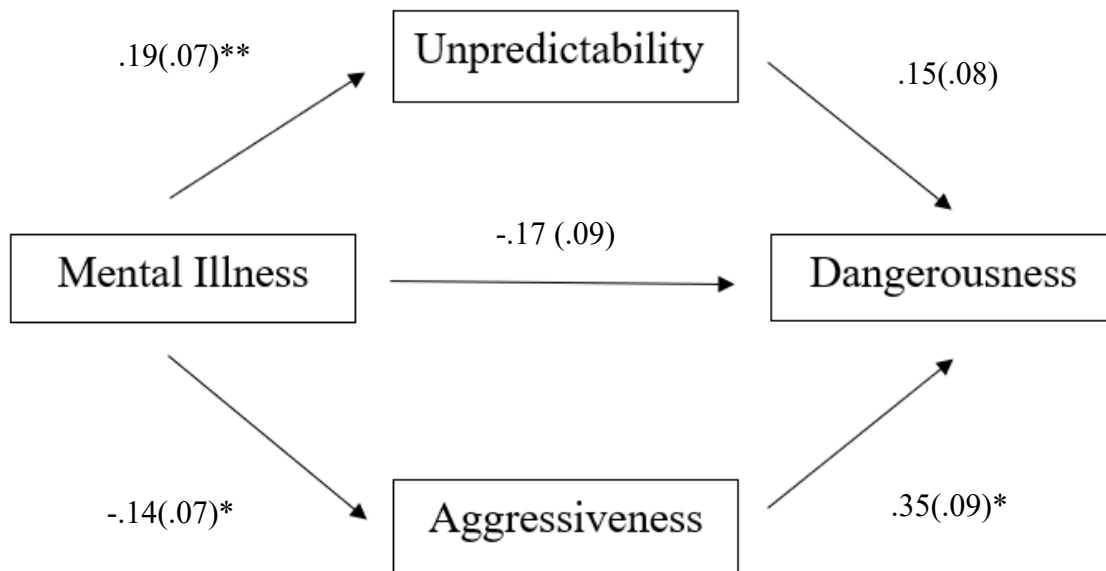
Fig. 2. Final model for study variables with signficicant, unstandardized pathways displayed.

Note. The above model presents coefficients (standard errors).

 *p < .05, **p < .01, ***p < .001

Table 3
Coefficients for Direct and Indirect Path among Study Variables

Paths			
Dangerousness	*b(SE)*	*β*	*p*
Likelihood of Mental Illness	-.17(.09)	-.11	.058
Unpredictability	.15(.08)	.12	.078
Aggressiveness	.35(.09)	.26	.000
Aggressiveness			
Likelihood of Mental Illness	-.14(.07)	-.13	.027
Unpredictability			
Likelihood of Mental Illness	.19(.07)	.16	.008

Note. The above table represents coefficients from the models displayed in Figure 2 across all six vignettes.

Supplementary analyses were conducted to explore if perceptions of unpredictability and aggressiveness mediated associations between likelihood of mental illness and perceptions of dangerousness for vignettes depicting schizophrenia and substance use differentially. Similar to the model described above, for both the schizophrenia-vignettes-only and the substance-use-vignettes-only models, there was no mediation for unpredictability (b = .03, p = .28; b = .01, p = .40, respectively) or aggressiveness (b = -.05, p =.07; b = -.01, p = .34, respectively) (full model coefficients available upon request).

Additional supplemental exploratory analyses were also conducted which examined desire for social distance as the outcome instead of perceptions of dangerousness. For the full model with both schizophrenia and substance use vignettes, unpredictability (b = .05, SE = .02, p < .05), but not aggressiveness (b = -.04, SE = .02, p = .06), fully mediated the relationship between likelihood of mental illness and desire for social distance (Figure 3) (standardized model coefficients available upon request). The coefficients for the schizophrenia vignettes only model mirrored the findings for the full model such that unpredictability (b = .07, SE = .02, p < .01), but not aggressiveness (b = -.04, SE = .02, p = .08), fully mediated the relationship between likelihood of mental illness and desire for social distance However, for the substance use

vignettes only model, neither perceptions of unpredictability ($b = .02$, $SE = .02$, $p < .10$) or perceptions of aggressiveness ($b = -.01$, $SE = .01$, $p < .33$) mediated associations between likelihood of mental illness and desire for social distance (full model coefficients available upon request).
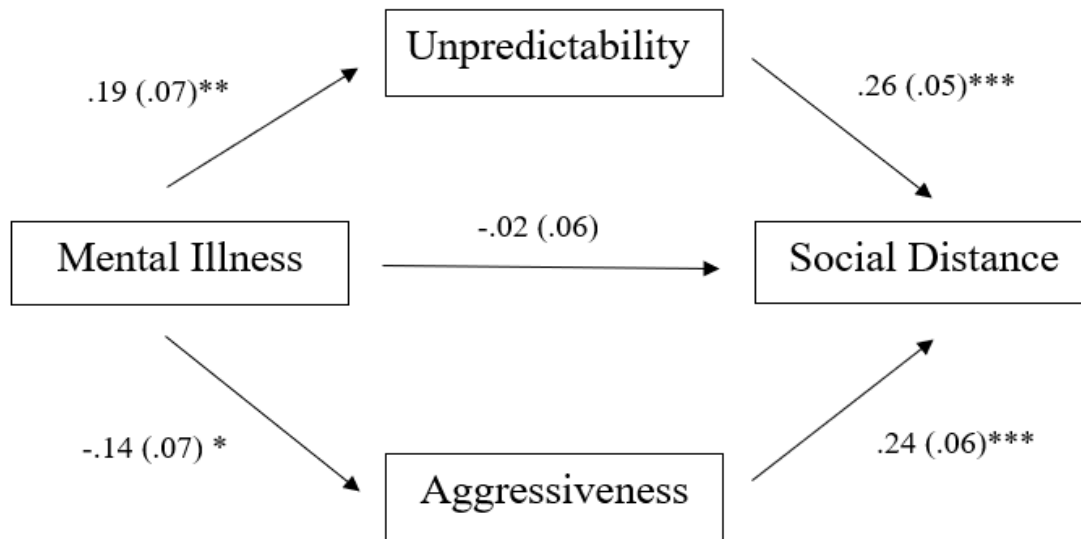
Fig. 3. Final model for supplimentary study variables with signficicant, unstandardized pathways displayed. *Note. The above model presents coefficients and standard errors. *p < .05, **p < .01, ***p < .001*

Hypothesis 3a-c. Hypothesis 3 addressed whether perceptions of unpredictability and aggressiveness as well as desire for social distance differed between vignettes displaying symptoms of schizophrenia and substance use disorder. Results partially supported hypotheses 3a-c. Supporting hypothesis 3a, results from paired sample *t*-tests indicated that participants rated vignette characters depicting symptoms of schizophrenia (*M* = 2.93, *SD* = .61) as more unpredictable than those depicting symptoms of substance use (*M* =2.33, SD =.64), *t*(276) = 13.63, *p* < .001, *d* = .73 (Table 4). Participants also rated vignette characters depicting symptoms of schizophrenia (*M* = 1.66, SD = .52) as more aggressive than those depicting symptoms of substance use (*M* =1.55, SD =.53), *t*(276) = 4.17, *p* < .001, *d* = .43, supporting hypothesis 3b. However, not supporting hypothesis 3c, participants did not significantly differ in their reported desire for social distance from vignette characters depicting symptoms of schizophrenia (*M* = 2.38; *SD* = .51) and vignette characters depicting symptoms of substance use disorder (*M* = 2.34, *SD* = .50), *t*(276) = 1.47, *p* = .142, *d* = .43 (Table 4).

Table 4
Paired Samples *t*-tests for Study Variables

	Schizophrenia	Substance use			
	M(SD)	M(SD)	t(df)	p	Cohen's D
Unpredictability	2.93 (.61)	2.33 (.64)	13.63 (276)	.001	.73
Aggression	1.66 (.52)	1.55 (.53)	4.17 (276)	.001	.43
Social Distance	2.38 (.51)	2.34 (.50)	1.47 (276)	.142	.43

CHAPTER V: DISCUSSION

This study aimed to assess what about individuals with mental illness may help explain the negative public perception of this population. Further, this study aimed to make a unique contribution to the literature by measuring what about individuals with mental illness themselves, referred to throughout this study as ascribed attributes, are associated with the public's negative perceptions, which has not been the central focus of previous literature. The ascribed attributes of unpredictability and aggressiveness were well supported by previous research and appear to play a major role in negative public perception of individuals with mental illness (Adewuya & Makanjuola, 2008; Bilgin et al., 2016; Jorm et al., 2012; Magliano et al., 2004; Ozmen et al., 2004; Wu et al., 2020). Understanding current public perception of individuals with mental illness and, more specifically, how the ascribed attributes influence these perceptions and are associated with perceptions of dangerousness may go a long way towards increase anti-stigma efforts that aim to reduce negative public stigma and its consequences.

The results of this study supported the hypotheses that participants can accurately identify characteristics of mental illness as displayed in vignettes. Further, findings suggested that individuals rated vignette characters depicting schizophrenia symptoms as more likely to have a mental illness compared to vignette characters depicting substance use symptoms. Easily identifiable symptoms among individuals with schizophrenia may explain a portion of the public's heighten awareness for this population, despite research demonstrating that they are not more likely to be dangerous and/or violent (Monahan & Arnold, 1996; Pilgrim & Rogers, 2003; Stone, 2018). This may mean that the public is aware of mental illness and its symptoms in daily life. Previous research has shown that individuals are not only more likely to perceive psychosis-related symptoms as a mental disorder compared to other symptoms (i.e., depressive symptoms),

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but they also have an easier time distinguishing psychosis-related symptoms than other, non-psychosis symptoms when displayed by an individual (Magliano et al., 2004; Marie & Miles, 2008). Because the public has an easier time distinguishing and recognizing psychosis-related symptoms, the public may be quicker to form negative opinions of these individuals which increases the chances of out-casting behaviors towards these individuals. Previous research has shown that the public often associates psychotic symptoms with unpredictable and/or dangerous behaviors (Magliano et al., 2004; Wu et al., 2020). This highlights the importance of campaigns that decrease negative public perception not only for individuals with mental illness but also, more specifically, for individuals with psychotic disorders such as schizophrenia and bipolar disorder.

Despite research that has demonstrated that individuals with schizophrenia are not more likely to be dangerous than individuals with any other disorder (Monahan & Arnold, 1996; Pilgrim & Rogers, 2003; Stone, 2018), the results from the current study suggest this bias continues to exist among the public. Findings suggest that the public perceives individuals with schizophrenia and more unpredictable and aggressive than individuals with substance use disorder. However, participants in the current study did not report that they desired social distance from these individuals. This is inconsistent with previous research that has shown that individuals desire social distance from people with mental illness (Angermeyer & Dietrich, 2006). Results also suggested that perceived likelihood of mental illness was not positively associated with perceptions of dangerousness as hypothesized. Conversely, results indicated a negative association between perceptions of mental illness and perceptions of dangerousness. Therefore, the more participants perceived mental illness among the vignette characters, the less likely they were to perceive them as being dangerous. These results are contrary to previous

research that has demonstrated that perceptions of mental illness are positively associated with perceptions of dangerousness (Angermeyer & Matschinger, 2003; Marie & Miles, 2008). A possible reason for this hypothesis not being supported is that over 50% of the sample reported that had been diagnosed with a mental illness and over 85% of the sample reported that this had a close relationship with an individual with mental illness. As demonstrated by previous research, the more that individuals are familiar and aware of mental illness, the less likely they are to have negative biases toward them and perceive them as dangerous (Corrigan et al., 2001; Oruč et al., 2011). Further, when looking through the lens of Attribution Theory (Corrigan et al., 2003; Weiner, 1995), individuals must decide if an individual with mental illness is responsible for their mental illness because of personal choices (i.e., drugs, laziness, etc.) or because of reasons outside of their control (i.e., genetic factors, trauma, etc.). Because a large portion of the sample had a mental illness and has the understanding that their mental illness was the result of things outside of their control, they were more likely to extend this understanding to other individuals with mental illness, such as the vignette characters. This understanding then, according to Attribution Theory, led to more positive perceptions of individuals with mental illness and a reduction in a desired social distance.

While the public can accurately perceive mental illness among other individuals, it is important to understand what about the individual with mental illness increases public perceptions of dangerousness. The study results did not support either mediator (i.e., unpredictability and aggressiveness) as hypothesized. This may be due to a large portion of the sample not only being diagnosed with a mental illness but also being close to an individual with mental illness which has been shown to decrease negative perceptions of individuals with mental illness (Corrigan et al., 2001; Oruč et al., 2011). Results did not support the hypothesis that

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likelihood of mental illness is positively associated with perceptions of aggressiveness; but results did support the hypothesis that likelihood of mental illness is positively associated with unpredictability. However, while those perceptions of aggressiveness are positively associated with perceptions of dangerousness, the perceptions of unpredictability were not positively associated with perceptions of dangerousness. This is partially in line with previous research that has demonstrated the role that unpredictability and aggressive play in the relationship between likelihood of mental illness and dangerousness (Adewuya & Makanjuola, 2008; Bilgin et al., 2016; Jorm et al., 2012; Magliano et al., 2004; Ozmen et al., 2004; Wu et al., 2020). Additionally, findings suggest that the public continues to perceive individuals with schizophrenia as more aggressive and unpredictable than individuals with substance use disorder, as hypothesized, which may be due to the rarity of psychotic disorders such as schizophrenia which has been shown to increase negative perceptions (Reavley & Jorm, 2011).

Exploratory analyses were also conducted to better understanding relationships among study variables due to previous research demonstrating that perceived mental illness is associated with higher desire for social distance from these individuals (Angermeyer & Matschinger, 2003; Marie & Miles, 2008). These analyses indicated that for the full model with both schizophrenia and substance use vignettes and dangerousness as the outcome, there was no mediation of unpredictability or aggressiveness in the relationship between likelihood of mental illness and dangerousness, even when vignettes were separated by mental illness type. For the full model and the schizophrenia vignettes only model with social distance as the outcome, however, unpredictability fully mediated the relationship between likelihood of mental illness and social distance. One possible explanation for unpredictability fully mediating the relationship between likelihood of mental illness and social distance is that schizophrenia is an uncommon disorder.

Therefore, when asked about less common disorders, especially psychotic disorders, individuals may be more likely to perceive them as unpredictable to due limited exposure. This lack of exposure, then, may lead to a higher desire for social distance because they are unsure what to expect (Reavley & Jorm, 2011).

These findings, in addition to the ones outlined above, demonstrate that the public continues to perceive individuals with mental illness as unpredictable, especially individuals with schizophrenia. This study highlights how much work is yet to be done to reduce public stigma, especially concerning disorders with low prevalence rates such as schizophrenia. Because individuals with mental illness continue to face the consequences of negative public perception, such as lack of employment and housing, socially outcasted, reduced helping behaviors from the public (Corrigan et al., 2003; Krupa et al., 2009; Oruč et al., 2011), it is important to continue expanding and diversifying research that can help to reduce these negative consequences. Understanding what about individuals with mental illness is perceived by the general public, such as assumed aggressive or unpredictable behavior, can more accurately target false perceptions and, therefore, increase the effectiveness of anti-stigma efforts. Further, despite previous research that has demonstrated that individuals with mental illness are not more likely to be dangerous and/or act violently (Hochstedler Steury, 1993; Pilgrim & Rogers, 2003; Stone, 2018), individuals with mental illness continue to be perceived as aggressive and unpredictable. This demonstrates that public perception of individuals with mental illness is more complex than just perceptions of dangerousness and that anti-stigma efforts must expand in order to increase effectiveness.

Results of this study and previous research may be used to further the effectiveness of anti-stigma efforts as well as inform the public, practitioners, clinicians, police, and others who

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come into contact with individuals with mental illness of their own personal role in negative perceptions of individuals with mental illness. Targeting how the public and professionals perpetuate and/or increase negative perceptions of individuals with mental illness, whether consciously or not, may be more effective at reducing stigma compared to placing the burden on individuals with mental illness to prove they are not dangerous, unpredictable, aggressive, etc. Simply knowing that an individual has a mental illness has been shown to increase negative perceptions (Angermeyer & Matschinger, 2003). Therefore, both the public and professionals need to be more aware of the negative attributes they are automatically ascribing to the individual with mental illness due to their mental illness, such as aggressiveness or unpredictability, in order to more effectively reduce negative stigma.

Limitations

Although this study makes an important contribution to the extant literature, findings should be interpreted considering several limitations. Limitations for this study included reliance on a non-representative sample due to participants being college students and majority white and female. Therefore, future research should aim to have a more representative sample in order to collect a more generalizable data that can be applied to a wider population of individuals. This study's cross-sectional design is another limitation due to generating substantially biased estimates of longitudinal relationships and processes (Maxwell et al., 2011). Any causal interpretations should not be made. Another limitation in this study is that most participants reported that they had been diagnosed with a mental illness during their lifetime as well as had close relationships with one or more individuals with mental illness. As demonstrated in previous research (Corrigan et al., 2001; Oruč et al., 2011), this has been shown to decrease negative perceptions of individuals with mental illness and may explain why participants did not associate

likelihood of mental illness with perceptions of dangerousness. Additionally, asking participants about their mental health as well as their relationships with other individuals with mental illness may have primed them to think about mental illness from their person experiences. This, in turn, may have resulted in more positive perceptions than otherwise would have been collected. Future research should consider gather demographics and personal experiences with mental illness at the end of the study to reduce this priming effect. Further, while data was collected concerning personal experiences with mental illness, data was not collected to examine what kind(s) of mental illness the participants and the individuals in their close relationships had. Future research should investigate participants' familiarity with specific mental illnesses as well as specific mental illness that participants may have in order to more clearly investigate how their perceptions of less common diagnoses such as schizophrenia.

Another limitation to this study is that all participants were enrolled in higher education which demonstrates a high level of education among the participants. Education in general, and especially education about individuals with mental illness (i.e., through psychology- and health-related classes) has been demonstrated to also reduce negative perceptions of individuals with mental illness (Crowe & Averett, 2015). Future research should aim to collect a wider range of education levels among participants in order to reduce the effects of high-education levels on participant perceptions and results. Further, a majority of the sample was also female (79.5%); previous research (Batson et al., 1996) has shown females to be more empathetic than males across many different settings. Future research should aim for a more even sample in order to reduce these biases and gather more representative results. Addressing these limitations in future research would provide the field with a better, more accurate representation of how the public presently perceives individuals with mental illness. This research is especially important to

ensure that current and future anti-stigma efforts are effective in addressing biases held by the public to provide healthy, happier, and more stable lives for individuals with mental illness.

Conclusion

This study highlights the importance of understanding the role perceptions of unpredictability and aggressiveness play in the relationship between likelihood of mental illness and dangerousness. Results indicate that the public can identify mental illness among other individuals which is associated with perceptions of unpredictability and aggressiveness. While perceptions of unpredictability are not necessarily associated with perceptions of dangerousness, perceptions of aggressiveness may be. Finally, results also indicate that the public continues to perceive individuals with schizophrenia as more unpredictable and aggressive despite efforts to reduce biases against individuals with mental illness. Findings from the current study and past research highlight that previous and current anti-stigma efforts have not been effective at reducing public stigma against individuals with mental illness. Therefore, future research must continue to explore attributes that are ascribed to individuals with mental illness and how they contribute to the relationship between mental illness and dangerousness to reduce negative consequences suffered by individuals with mental illness.

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APPENDIX A: SCHIZOPHRENIA VIGNETTES

Vignette 1: Mary is a 37-year-old female who, until a few months ago, was living a very happy life. More recently, however, Mary has begun feeling as though her friends and family have been talking behind her back and are trying to have her kidnapped. While Mary still sees her friends and family and is still able to go to work, she cannot help but feel people are watching and following her. Mary has begun having difficulties sleeping due to worrying about people watching her house, but she is able to calm herself down most of the time. Occasionally, Mary will hear voices in her home despite living alone. She feels scared hearing voices accusing her of being a 'nasty person.' More recently, Mary has been responding to the voices. Mary has been living like this for 4 months now.

Vignette 3: Luke is a 23-year-old male who recently started concerning his friends and family. They noticed that Luke looked 'blank' or blunted in his look, showing no emotionality. He stopped going to work and stayed in his room most of the times, mumbling to the wall or laying down looking at the ceiling for hours. When his friends visited and tried to talk to him, Luke said he had a dream in which an angel told him that the world was going to end. Since then, Luke has seen little point in feeling happy or completing daily tasks. He tried to warn his friends about what the angle told him, but they did not believe him. He has recently begun to see the angles out in public as well. At first, he would tell people to get away and to watch out, but everyone walked away looking scared or concerned for him. Luke has accepted that the world is going to end soon and now spends most of his time sitting in his apartment waiting. Luke has been living like this for 6 months now.

Vignette 5: Kisha is a 27-year-old female who, in her opinion, lives a normal life. For a few months now, however, Kisha has found herself to be standing in odd positions and postures, sometimes for hours at a time. She has no memory of beginning to hold these positions, but she will come-to with both hands over her head or sitting sideways in a chair after hours have passed. She explained these behaviors to her mom, but her mom just told her to "stop daydreaming so much." Kisha, recently, has begun to believe that an outside force is controlling her body and causing her to behave this way. She has begun researching how mind-control works and keeping an eye out for suspicious people who may be following her. Kisha has been living like this for 8 months now.

Vignette 2: John is a 46-year-old male and has been a regular drinker for most of life. Recently, however, John has noticed that he drinks an average of 4 nights a week. A few months ago, John's wife left him for another man, and his drinking picked up after that time. Although John has been able to make it through a week or two at a time without drinking, he often struggles to see the point of staying sober for longer than that. John will occasionally get cravings. Although he can ignore them if he is at work or with his family, he missed a couple of morning meetings at work due to hangover. John has also noticed a slight increase in how much he drinks at one time. While it used to only take him 4-5 beers to feel buzzed, John has noticed that it now takes 7-8. John has been living like this for 6 months.

Vignette 4: Jess is a 33-year-old female who has always struggled to be social. Despite being uncomfortable, though, she often hangs out at bars to meet people and make new friends. Jess finds that it is easier for her to approach others after she has had a few cocktails. She enjoys the feeling and started going out almost every night. Recently, Jess has found that it is difficult to talk to anyone while she is completely sober, and she has started sneaking a flask into work to help her when she talks to customers. While no one has caught her yet, a few people have told her that she needs to be more mindful and focused when she has work to do. Jess has started to fall behind on paperwork and often forgets the tasks she needs to do for the day, although the customers leave her great reviews saying that she is very friendly. Jess has been living like this for 5 months.

Vignette 6: Tyron is a 22-year-old male who recently started drinking. While he never used to enjoy drinking because he lost his father in a drunk-driving accident, he recently began drinking to help himself fall asleep. He has always struggled with falling asleep, so Tryon's college roommate suggested having a beer or two to help him fall asleep at night. Tyron now drinks 5-6 beers in a few hours before passing out at night. Although he sleeps pretty well, he has noticed that he wakes up in the mornings feeling groggy and with a headache. His roommate told him that having a beer in the morning as well would keep him from having a hangover. Tyron now drinks 2 beers in the morning before class to "get himself going." Recently, however, he stopped going to morning classes due to either hangover or falling asleep again after drinking more beers than intended. Tyron has been living like this for 7 months now.

APPENDIX C: BELIEFS TOWARD MENTAL ILLNESS SCALE

1.	A mentally ill person is more likely to harm others than a normal person.
2.	Mental disorders would require a much longer period of time to be cured than would other general diseases.
3.	It may be a good idea to stay away from people who have a psychological disorder because their behavior is dangerous.
4.	The term "Psychological disorder" makes me feel embarrassed.
5.	A person with a psychological disorder should have a job with minor responsibilities.
6.	Mentally ill people are more likely to be criminals.
7.	A psychological disorder is recurrent.
8.	I am afraid of what my boss, friends, and others would think if I were diagnosed as having a psychological disorder.
9.	Individuals diagnosed as mentally ill will suffer from its symptoms throughout their life.
10.	People who have once received psychological treatment are likely to need further treatment in the future.
11.	It might be difficult for mentally ill people to follow social rules such as being punctual or keeping promises.
12.	I would be embarrassed if people knew that I dated a person who once received psychological treatment.
13.	I am afraid of people who are suffering from a psychological disorder because they might harm me.
14.	A persona with a psychological disorder is less likely to function well as a parent.
15.	I would be embarrassed if a person in my family became mentally ill.
16.	I do not believe that a psychological disorder is ever cured.
17.	Mentally ill people are unlikely to be able to live by themselves because they are unable to assume responsibilities.
18.	Most people would not knowingly be friends with a mentally ill person.
19.	The behavior people who have a psychological disorder is unpredictable.
20.	A psychological disorder is unlikely to be cured regardless of treatment.
21.	I would not trust the work of a mentally ill person assigned to my work team.

APPENDIX D: PERSONAL ATTRIBUTES QUESTIONNAIRE

	Definitely Not True	Somewhat Not True	Somewhat True	Definitely True
Needy	○	○	○	○
Unpredictable	○	○	○	○
Lacking self-control	○	○	○	○
Helpless	○	○	○	○
Aggressive	○	○	○	○