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Does mental illness stigma differ across disorders? An investigation of public stigma and attribution theory in social anxiety disorder, depression & schizophrenia

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DIFFERENCE IN STIGMA ACROSS DISORDERS

Does Mental Illness Stigma Differ Across Disorders? An Investigation of Public Stigma and Attribution Theory in Social Anxiety Disorder, Depression & Schizophrenia

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Abstract

Individuals experiencing mental illness face numerous negative social, economic, and personal outcomes, partly due to the public stigma around mental illness. Attribution theory posits that stigma occurs when publicly held stereotypes of individuals with mental illness elicit negative emotions, eventually resulting in discriminatory behaviours. The stigma associated with common mental disorders is not well understood, especially in the context of attribution theory. The current study aimed to address these gaps through an online survey of undergraduate students' ($n = 302$) perceptions of the public's stigmatizing attitudes, emotions, and behaviours towards an individual depicted as having social anxiety disorder (SAD), depression (DEP) or schizophrenia (SCH). Differences were identified in how strongly specific stigma components were endorsed: SAD and DEP were associated with greater Weak-not-Sick (WNS) attitudes and intentions to help compared to SCH; DEP had the highest blame ratings; SCH had the highest pity ratings; SAD had the lowest avoidance ratings and SCH had the highest. Further, hierarchical multiple regressions revealed that WNS and blame attitudes were a unique predictor of negative affective reactions for SAD and DEP respectively. Dangerousness predicted negative affect for all three disorders. Fear and anger predicted discriminatory behaviours for SAD and DEP, while fear and pity were predictors for SCH. These findings partially supported study hypotheses. Additional exploratory regressions were conducted to identify predictors of pity, help and avoidance. Results from this research suggests that the stigma associated with mental illness is best understood by examining disorder categories individually. Findings can inform the development of effective anti-stigma strategies to improve outcomes for those living with mental illness.

Keywords: mental illness stigma, attribution theory, social anxiety disorder, depression, schizophrenia

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Does Mental Illness Stigma Differ Across Disorders? An Investigation of Public Stigma and Attribution Theory in Social Anxiety Disorder, Depression & Schizophrenia

1 in 3 Canadians will experience a mental illness at some point in their lifetime (Statistics Canada, 2013), however, 1 in 5 affected individuals will not seek treatment, partly due to the stigma of mental illness (Corrigan et al., 2014; Jagdeo et al., 2009). In this way, mental illness stigma is an added burden for individuals who are already struggling with the direct effects of the disorder(s), and can be more disabling than the illness itself (Markowitz, 1998; Pietrus, 2013). Indeed, mental illness stigma is associated with numerous negative social, economic, and personal outcomes, and leads to discrimination in health care, criminal justice, housing and workplace settings (Corrigan & Kleinlein, 2005).

What is Stigma?

Stigma is a complex phenomenon that has been applied in a wide variety of contexts, including ethnicity, gender, sexual orientation, disability, various occupations, health conditions, and mental illness. Research on stigma is largely multidisciplinary, with various disciplines contributing their unique theoretical orientations and emphasizing different aspects of the stigma concept (Link & Phelan, 2001). As a result, stigma has been conceptualized in many different ways in the literature. One of the early definitions was proposed by sociologist Erving Goffman (1963), who described stigma as a “deeply discrediting” attribute possessed by an individual that results in them being perceived as “tainted” and “discounted” (pg. 3). This definition encompasses (1) physical abnormalities, i.e., “abominations of the body,” (2) “tribal stigma of race, nation, and religion,” and (3) “blemishes of individual character” such as mental illness, addiction, and criminality (Goffman 1963, p. 4). Goffman’s conceptualization of stigma has been greatly influential in the field, marking a proliferation of stigma research and further refinements

to and elaborations of the concepts he explored in his 1963 book.

In particular, social psychology research on stigma has been productive in developing and empirically examining many social-cognitive models that focus on understanding the nature of stigma. One such model is attribution theory, which delineates the process of stigma formation and progression. The theory was adapted and applied to the concept of stigma from Weiner's (1980, 1985) original attribution model. Focusing on achievement-striving contexts, the original model postulates that causal attributions of success and failure shape the motivations and emotions that underlie outcome behaviours. Fundamental to this model is the idea that humans seek to understand their environment by attributing causes to the events they experience to explain why things are the way they are (Weiner, 1980). For instance, an individual may encounter someone with a drug addiction and wonder why they developed an addiction. Ascribing a cause to events is a cognitive process that elicits specific affective reactions, which directs behavioural responses in a cognition-emotion-behaviour sequence (Weiner, 1980, 1985).

In the context of stigma, and paralleling Weiner's original attribution model, attribution theory emphasizes stereotypes, prejudice, and discrimination, which correspond to the cognitive, affective, and behavioural aspects of stigma development respectively (Corrigan, 2000; Sheehan et al., 2017). Stereotypes are societal attitudes, beliefs, and cognitive schemas about the characteristics and behaviours of the members of any given stigmatized group. Through the lens of Weiner's attribution model, stereotypes may be viewed as knowledge structures that are informed by causal attributions about the stigmatized group providing information on why the group displays these characteristics and behaviours. In general, stereotypes are not always inherently damaging – they can be adaptive cognitive strategies that enhance our ability to make quick decisions and act appropriately in different situations (Rössler, 2016; Sheehan et al., 2017).

However, stereotypes are often generalizations that have detrimental effects when they are utilized to make judgements about individuals (Rössler, 2016).

When an individual endorses those public attitudes, prejudice, in the form of negative affective reactions, is elicited. These attitudes and emotions eventually result in discriminatory behaviours against the stigmatized group. Like this, prejudicial affective reactions are hypothesized to be a key link between stereotypes and discriminatory behaviours. Discrimination can occur at an individual or structural level. Individual discrimination entails behaviours that occur during interpersonal interactions between the stigmatizer and the stigmatized individuals, while structural discrimination involves practices and policies built into societal institutions that are unfavorable for stigmatized groups (Angermeyer et al., 2014; Link & Phelan, 2001). To illustrate an application of this model, one may consider how the stereotype that African-American men are aggressive and dangerous can elicit feelings of fear in a police officer who has an altercation with an African-American male, resulting in an unwarranted and excessive use of force against that individual. Thus, this theory of stigma suggests that it is essential to consider the cognitive, affective and behavioural components of stigma to achieve a comprehensive understanding of how stigma develops and can be changed.

Other social-cognitive models of stigma appear to largely preserve these three central components, but also further refine hypotheses around how stigmatizing attitudes and behaviours may be activated. For instance, Link and Phelan (2001) outlined five interrelated factors that must coincide in the context of a power situation for stigma to occur: labelling, stereotyping, separation, status loss and discrimination. Firstly, socially salient human differences are identified and labelled. An individual who possesses any given labelled difference is then associated with some unfavorable characteristics that comprise a stereotype. These labelled

differences are used to separate individuals into discrete categories, such that the stigmatized group is seen as a separate outgroup from the rest of “us”. This process of labelling, stereotyping, and separating the stigmatized group creates a rationale to discredit and reject them in a way that results in status loss and discrimination. Lastly, all these elements must occur in the context of a social, economic, or political power differential for the process to unfold, such that the stigmatizing group is in a position of relative power to engage in discriminatory actions that have significant consequences. As each of the elements outlined above can occur in varying degrees, Link and Phelan’s (2001) conceptualization introduces the idea that stigma exists on a spectrum of severity, with certain groups experiencing more stigma than others.

It is important to keep in mind that, in defining stigma so far, this paper has focused on public stigma. Public stigma refers to the stereotypes, prejudice, and discrimination towards a group that are endorsed by the general public (Sheehan et al., 2017). In the literature, public stigma is often discussed in terms of perceived and personal stigma. An individual’s awareness and perceptions of the public stereotypes, prejudice and discrimination towards a particular group that comprise public stigma, though the individual may not necessarily endorse the stigma, is called perceived stigma (Griffiths et al., 2004; Pattyn et al., 2014). On the other hand, personal stigma refers to the individual’s own subjective thoughts, emotions, and behaviours towards a stigmatized group, or the extent to which the individual personally endorses public stigma (Griffiths et al., 2004). However, there are many other forms of stigma often discussed in the literature. Self-stigma refers to the internalization of public stereotypes by individuals from the stigmatized group (Sheehan et al., 2017). These individuals are aware of, endorse, and apply public stigma to their own lives, which can lead to feelings of shame and has a negative impact on self-esteem and self-efficacy (Sheehan et al., 2017). Another type of stigma is courtesy

stigma, which is directed at family, friends, and other people who are associated with members of the stigmatized group (Goffman, 1963). Structural stigma refers to the stigma embedded in governmental and institutional policies that deprive individuals of the stigmatized group of opportunities, and can be either intentional or unintentional (Corrigan et al., 2004). Taking this all together, it seems that public stigma may be central to the formation of these other types of stigma (Pryor & Reeder, 2011).

Mental Illness Stigma

As mentioned previously, the concept of stigma has been commonly applied in the context of mental illness. Substantial research efforts have focused on identifying the range of stereotypes, emotional reactions, and discriminatory behaviours that people with mental illness experience (Angermeyer & Detrich, 2006; Parcesepe & Cabassa, 2013). A critical review of the measures used to assess mental illness stigma in research demonstrated that stereotypes are the most commonly assessed stigma component and prejudice is the least assessed component, with only 14.7% of studies measuring this aspect of stigma (Fox et al., 2018). Most studies examining mental illness stigma utilize vignette descriptions of an individual with mental illness and assess the associated stigma using self-report measures (e.g. Feldman & Crandall, 2007). Beliefs and attitudes around mental illness seem to vary based on the type of disorder, both in terms of the kind of stereotype and degree of endorsement (Angermeyer & Detrich, 2006). In line with the attribution theory, if stereotypes differ across disorders, it logically follows that the feelings elicited and discriminatory actions will also differ as a result.

Stereotypes about Mental Illness

Based on Angermeyer and Detrich's (2006) review of public beliefs towards individuals with mental illness, most studies have focused on attitudes around depression, schizophrenia, and

general “mental illness”. Relatively fewer studies have focused on other mental disorders including addictions and anxiety disorders, with virtually no research focusing on other conditions like obsessive-compulsive disorder, eating disorders, and intellectual disabilities, to name a few. Of all the stereotypes associated with mental illness, one of the most pervasive and damaging is the view that individuals with mental disorders are a danger to others and/or themselves (Angermeyer & Detrich, 2006; Parcesepe & Cabassa, 2013; Sheehan et al., 2017). Perceptions of dangerousness fluctuate across different mental disorders, with schizophrenia and alcoholism being associated with danger more so than anxiety or depression (Angermeyer & Detrich, 2006). Further, the perception of dangerousness towards others is stronger for schizophrenia and alcoholism than it is for depression, as depression is seen as more dangerous to oneself (Parcesepe & Cabassa, 2013). This stereotype is further propagated and enforced by media depictions of individuals with mental illness as violent, especially in the case of individuals with more serious conditions like schizophrenia (Ma, 2017; McGinty et al., 2016).

Related to this, individuals with mental illness are also commonly perceived as behaving in unpredictable ways (Angermeyer & Detrich, 2006; Sheehan et al., 2017). Individuals with schizophrenia and alcoholism are seen as relatively more unpredictable than those with depression or anxiety disorders (Angermeyer & Detrich, 2006). Another belief around mental illness is that affected individuals are incompetent in making their own decisions and living independently. Agreement with this belief may lead to individuals with a mental disorder being “supervised” and treated in a coercive manner, as family and other care providers may adopt an authoritarian approach in their interactions with the individual (Sheehan et al., 2017). Compared to those with depression, people suffering from schizophrenia and drug abuse are thought to be especially incapable of making effective decisions around treatment or finances (Parcesepe &

Cabassa, 2013).

The public also holds the belief that mental illness is an enduring, unchanging condition that is unlikely to improve with time. This perspective is problematic as it may imply that treatment and rehabilitation is unlikely to lead to recovery and promote the separation of individuals with mental illness (Sheehan et al., 2017). Such beliefs around the stability of mental illness may be more pronounced for individuals who perceive mental disorders as a biological “disease of the brain” (Schomerus et al., 2012). Results from a study by Wood et al. (2014) suggest that the prognosis for schizophrenia is considered to be much poorer than the likelihood for recovery in depression or anxiety, once again demonstrating differences across disorders.

A systematic review of the literature on stigma specific to anxiety disorders suggests that “weak-not-sick” (WNS) beliefs are particularly relevant to public perceptions of anxiety (Curcio & Curboy, 2019). WNS beliefs revolve around the idea that mental illness is due to personal weakness and is not seen as a “real medical condition”, such that the individual could “snap out of it” if they tried (Jorm & Wright, 2008). In particular, the studies that demonstrated an endorsement of WNS attitudes all examined social anxiety disorder (Jorm & Wright, 2008; Reavley & Jorm, 2011; Yoshioka et al., 2014). Related to this, people with mental disorders may be blamed for their illness and seen as personally responsible for what they are experiencing (Parcesepe & Cabassa, 2013; Sheehan et al., 2017). The review by Curcio and Curboy (2019) suggests that the blame stereotype may be stronger towards individuals with anxiety disorders. The beliefs and attitudes discussed in this section are largely reflective of the stereotypes that are measured in mental illness stigma scales. Specifically, stereotypes of dangerousness, violence, unpredictability, responsibility, and weakness are most commonly included in stigma measures (Fox et al., 2018).

Negative Emotional Reactions to Mental Illness

As mentioned previously, research on the range of affective reactions (prejudice) to mental illness is rather scarce. Link et al. (2004) hypothesize that endorsement of stereotypes and separation of individuals with mental illness into an outgroup may incite feelings of fear, anger, pity, anxiety and irritation. The review of stigma measures by Fox et al. (2018) found that anger and fear are the most commonly assessed aspects of the prejudice component of stigma. Of course, the affective reactions towards individuals with mental illness likely differ across disorders as well. The review by Angermeyer and Detrich (2006) suggests that feelings of fear and anger may be more likely to be directed towards individuals with more severe conditions like schizophrenia. Other conditions like depression, on the other hand, may elicit more prosocial emotions towards the person, like feelings of pity and the desire to help.

Discrimination Towards Individuals with Mental Illness

The diverse array of discriminatory actions people with mental illness experience can be grouped into three broad categories: social distancing, segregation, and coercion (Sheehan et al., 2017). Of these, social distancing is undoubtedly the most common form, and also has the most extensive research base. The general public prefers to reject, avoid, or withdraw from any sort of social interaction with individuals who have mental illness to avoid potential risks of association (Corrigan 2000; Sheehan et al., 2017). This form of discrimination adversely impacts essentially every aspect of life that involves social contact, including employment, education, healthcare, and housing (Sheehan et al., 2017). For instance, many studies have found that unemployment is significantly more common in individuals who have a mental illness compared to those who do not, with employers being less likely to hire people with mental illness (Corrigan, 2000; Sickel et al., 2014). Research on the perspectives of individuals with mental illness, usually more severe

conditions, shows that a substantial minority of the samples report experiences of discrimination while finding a job and in the workplace, including losing opportunities and avoidance from coworkers upon disclosure of their mental disorder (Sharac et al., 2010; Sickel et al., 2014). In terms of housing, the general public is less likely to rent apartments to individuals with a mental illness (Corrigan, 2000). People with mental illness have reported having difficulties in acquiring and maintaining sufficient housing, largely due to financial reasons, as well as discrimination directed to them (Sickel et al., 2014). Further, there is evidence to suggest that health care providers hold stigmatizing attitudes towards people with mental illness as well, which likely has adverse effects on the quality of care received (Sickel et al., 2014). Indeed, individuals with mental illness have reported feeling disrespected by health care providers, and stated that complaints about their physical health were overlooked because of their mental illness (Sharac et al., 2010; Thornicroft et al., 2007).

The desire for social distance is stronger for certain mental disorders over others. Two systematic reviews concurred that social rejection is the strongest for individuals with drug or alcohol addictions, followed by schizophrenia (Angermeyer & Detrich, 2006; Parcesepe & Cabassa, 2013). Comparatively, depression and anxiety disorders are associated with a lower desire for social distance by the public (Angermeyer & Detrich, 2006). Feldman and Crandall (2007) examined the dimensions of stigma that are associated with social rejection across 40 mental disorders in a sample of undergraduate students, and found that the greatest social distance was desired from individuals with personality, psychotic, and substance abuse disorders, with anxiety-related disorders being ranked the lowest. The study also demonstrated that stereotypes of dangerousness and personal responsibility were the only significant predictors of social rejection using a stepwise multiple regression analysis (Feldman & Crandall, 2007).

Similarly, some other studies have shown that there is a positive association between desire for social distance and beliefs around dangerousness towards others and/or oneself (Martin et al., 2000; Martin et al., 2007). On the other hand, desire for social distance was lessened when conditions were perceived to be stress-induced (Martin et al., 2000), which may explain why anxiety and depressive disorders are not as strongly associated with social rejection.

Other forms of discrimination include segregation and coercion. Sheehan et al. (2017) define segregation as “large-scale, systematic avoidance and paternalism” (p. 49). The discrimination people with mental illness encounter in employment and housing results in limited housing options and poor living conditions, with many staying in poor, violence-prone neighborhoods (Sheehan et al., 2017). Those with more debilitating mental health conditions may find themselves in group homes or some other form of residential housing with little opportunity to engage with the wider community, thus segregating them from others (Sheehan et al., 2017). Lastly, individuals with mental illness may be coerced into making certain decisions. Though protective measures against coercive practices like involuntary hospitalization have been increasingly implemented over the years, other controlling practices like seclusion and forced medication persist (Sheehan et al., 2017; Strauss et al., 2013). Coercive practices are thought to be a result of endorsing beliefs of incompetency, weakness, dangerousness and poor prognosis for individuals suffering from a mental disorder (Sheehan et al., 2017).

Applying Attribution Theory to Mental Illness Stigma

A sizeable portion of the literature has focused on testing the attribution model by Weiner (1980, 1985) in the context of mental illness stigma. Research based on the original model is primarily concerned with identifying the dimensions of causality that play an important role in developing causal attributions about achievement-related events such as success and failure.

Much of this research has consistently identified two dimensions of causality – controllability and stability – which have been extended to mental illness stigma (Weiner et al., 1988). In the context of mental illness, attributions about the controllability of a cause refers to the extent to which a mental illness is perceived to result from factors that the individual can control versus other external factors (e.g., environment and/or biological agents) (Corrigan et al., 2000).

Attributions about stability refer to perceptions of the prognosis of the mental illness – is the illness expected to be relatively stable and chronic, wax and wane, or improve over time (Corrigan et al., 2000)?

Weiner and colleagues (1988) demonstrated that mental illnesses were seen as more controllable than physical disabilities, such that individuals with mental disorders were perceived to be more personally responsible for the onset of their condition. Conditions perceived as uncontrollable were also associated with feelings of pity and a willingness to assist, while conditions perceived as controllable were associated with feelings of anger and a decreased willingness to help. Mental illnesses were mostly considered reversible, while physically-based conditions were rated as more stable. These findings were supported by Corrigan and colleagues (2000), who also found that mental illnesses were perceived more negatively than physical illnesses in terms of controllability and stability attributions. Findings from this study further suggest that these attributions differ within the different mental disorders as well, as cocaine addiction was seen as the most controllable and “mental retardation” was seen as the most stable and unlikely to improve. Both studies used analyses of variance (ANOVA) to compare group differences across these dimensions.

In addition to exploring each of the three components of stigma individually, it is important to understand how they have been linked together in research based on attribution

theory. Unfortunately, only a few studies have examined the relationship between stereotypes, prejudice and discrimination in the context of mental illness stigma (Corrigan et al., 2002; Corrigan et al., 2003; Hanlon & Swords, 2020; Menec & Perry, 1998). Based on evidence from research on other forms of stigma and general life events, Corrigan (2000) hypothesized that stereotypes about the personal responsibility and controllability of mental illness lead to very distinct feelings and behaviours. Specifically, he suggested that people who believe that an individual is suffering from a condition that they are not in control of, and thus not personally responsible for, feel pity towards the individual and engage in helping behaviours (Corrigan, 2000). However, if the mental condition is perceived to be controllable, thus making the individual personally responsible for the symptoms they are experiencing, others are more likely to react with anger and engage in punishing behaviours focused on reforming the individual and protecting society from potential danger (i.e., coercion and segregation) (Corrigan, 2000). This hypothesis was later supported in a study that examined the proposed model using a series of multiple regressions and mediation analyses (Corrigan et al., 2003).

However, earlier path analyses of a similar model involving controllability attributions, pity, anger, and helping behaviour in mental illness have yielded contradictory results. Menec and Perry (1998) found that attributions of high controllability predicted lower pity ratings and higher anger ratings. Subsequently, higher pity ratings were associated with a greater willingness to help, while anger ratings had no significant effect on willingness to help. On the other hand, Corrigan et al.'s (2002) examination of this model only found a significant association between anger ratings and helping behaviour.

Hanlon and Swords (2020) were the first to examine the processes underlying the relationship between WNS attitudes and helping intentions in generalized anxiety disorder

(GAD). Using a multiple mediation model, they demonstrated that WNS attitudes were associated with less likelihood to help an individual with GAD, which was partially mediated by relationships between specific affective reactions and desire for social distance. Specifically, WNS beliefs were associated with greater fear and anger, which were in turn associated with greater desire for social distance. WNS attitudes were also associated with less pity, which was associated with less social distance. Desire for social distance subsequently was associated with lowered helping intentions. Interestingly, only pity had a direct effect on helping intentions as well, with pity predicting a greater likelihood to help.

Further, both path analysis and mediation models have demonstrated that endorsement of dangerousness stereotypes elicit fearful reactions, which also lead to punishing behaviours (Corrigan et al., 2002; Corrigan et al., 2003). The “punishing behaviours” that result from stereotypes around both personal responsibility and dangerousness include avoiding the individual, refusing to help, and endorsing coercive treatment (Corrigan et al., 2003).

Lastly, there has been one experimental investigation of Weiner’s attribution theory, which focused on comparing the stigma towards anorexia to the stigma towards physical conditions like obesity and skin cancer (Zwickert & Rieger, 2013). The researchers manipulated perceptions of controllability by presenting participants with either a blame-based or non-blame-based causal account of the individual with the condition. While participants endorsed a greater desire for social distance (i.e., behavioural response) from individuals with anorexia compared to individuals with obesity, attributions of personal control and blame were higher for those with obesity. This finding appears to contradict attribution theory, as we would expect that more negative controllability attributions would underlie the greater desire for social distance observed for the anorexia group. Based on these results, Zwickert and Rieger (2013) hypothesize that there

are other factors that contribute to stigmatizing behavioural responses. Still, the manipulation of controllability attributions using causal accounts demonstrated support for attribution theory. Across all three illnesses, blame-based accounts resulted in an increase in negative affective reactions and desire for social distance, while non-blame-based accounts resulted in decreases in these two aspects. However, this study did not investigate whether there is a sequential relationship between the blame attributions, negative emotional reactions, and behavioural response, as proposed by attribution theory.

Gaps in the Literature

As stigma is a multidimensional construct, with dimensions differing across specific mental disorders in intensity and implications, it is best understood by examining disorder categories individually. However, the literature has primarily focused on severe mental disorders, depression and unspecified “mental illness” when investigating stigma. Additionally, little is known about the different forms of prejudice associated with mental illness stigma and discriminatory behaviours other than social distancing. Aside from the dangerousness stereotype, which is more applicable to severe mental disorders, other beliefs and attitudes have not been as extensively examined. Considering this fact, the stereotypes, prejudice, and discrimination directed towards individuals with more commonly occurring disorders, such as social anxiety disorder (SAD), are not very well understood. SAD is characterized by an excessive fear of negative evaluation in social situations where an individual is exposed to possible scrutiny. As individuals with SAD may be especially sensitive to negative stereotypes in the social environment, they may also be more vulnerable to the negative effects of stigma (Ociskova et al., 2013). Indeed, individuals with SAD are more likely to avoid seeking treatment due to fear of what others might think or say (Olfson et al., 2000).

The few studies that have made direct comparisons between different types of mental disorders undeniably demonstrate that severe mental health conditions are stigmatized to a greater degree than more common disorders like depression and anxiety (e.g. Anderson et al., 2015; Feldman & Crandall, 2007). These studies have mostly focused on differences in stereotypes and desire for social distance across disorders. The study by Feldman and Crandall (2007) examining stigma across 40 mental disorders and the stereotypes that uniquely predict social distancing is one such study that has furthered our understanding of differences in stigma based on type of disorder. However, this study used a 17-item measure that assessed 17 different beliefs – meaning that each stereotype was measured by a single question. Further, the regression analysis examining which of the 17 stereotypes predict desire for social distance was conducted on the entire sample consisting of a mix of many different disorders. Thus, this study is limited in its ability to explain which stereotypes are particularly relevant to desire for social distance in specific disorders. In an attempt to address this limitation, another study by Anderson et al. (2015) used the same 17-item measure to examine the stereotypes that uniquely predict desire for social distance in SAD, depression, and general “mental illness” separately. This study found that dangerousness and being embarrassed by the condition predicted desire for social distance across all three disorders. The regression model for social anxiety was the most complex – beliefs that the condition causes work impairment and is more common in women predicted a greater desire for social distance, while beliefs that the condition is unavoidable was associated with a reduced desire for distance (Anderson et al., 2015). Both the studies by Feldman and Crandall (2007) and Anderson et al. (2015) used a measure with 1 item per stereotype, which may not accurately capture all aspects of each construct. This measure also does not evaluate the WNS stereotype, which seems to be particularly relevant to SAD based on past research.

Stereotypes, the feelings they elicit, and the resulting discriminatory behaviours have generally been examined independently. While having a strong understanding of each individual component of stigma is of great value, it is also vital to understand how they relate to one another. While these two studies attempted to explore such relations, neither one based their investigation on attribution theory. In both cases, stereotypes were used to predict discrimination without consideration for the role that emotional responses likely play in linking these two components of stigma.

Aims of the Current Study

The current study aimed to investigate a broad range of stereotypes, prejudices, and discriminatory behaviours across common and severe mental disorders in the context of attribution theory. Specifically, it looked at whether there are differences in the degree to which stereotypes, emotional responses, and discrimination are directed towards individuals with SAD, depression and schizophrenia. In particular, this study focused on WNS and blame stereotypes, feelings of pity, and avoidance and helping behaviours, as these were thought to be most relevant to common mental disorders. Thus, it is hypothesized that the WNS and blame attitudes, feelings of pity, and helping behaviours will be more strongly endorsed for individuals with SAD and depression compared to schizophrenia. We also expected that the WNS stereotype will be most strongly endorsed for SAD (Hypothesis 1). Secondly, this study explored the relationships between the components of stigma in the context of attribution theory. We examined which stereotypes predict prejudice, and which prejudicial reactions predict discrimination in these disorders individually. It is hypothesized that WNS beliefs will significantly predict prejudicial reactions, and that pity will significantly predict discriminatory behaviours in SAD specifically (Hypothesis 2). Lastly, we conducted an exploratory analysis to identify the stereotypes that

predict feelings of pity, and the emotional reactions that predict avoidance and helping behaviours.

Method

Participants

The total study sample consisted of 303 undergraduate students ($M = 21.84$ years of age, $SD = 5.55$ years) enrolled in a psychology course at Lakehead University. Most of the participants identified as female (85.76%). In terms of ethnicity, 73.84% of the sample was White, 8.61% was Indigenous, 6.96% was Asian and 6.62% was Black. Participants were randomly assigned to one of three disorder vignette conditions: social anxiety disorder ($n=80$; SAD), depression ($n=114$; DEP), or schizophrenia ($n=109$; SCH). Students were recruited through an online research participation system and all participants received 1.0 bonus credit towards their course as remuneration for their participation in the study.

Measures

Demographics Questionnaire. This questionnaire was created to collect basic demographic information on the participants for the current study. It asked participants to provide their age, sex, ethnicity, year of study, and study major (Appendix A).

Level-of-Contact Report (Holmes et al., 1999). The level-of-contact report is a self-report measure of the degree to which participants have been exposed to individuals with severe mental illness over their lifetime. It consists of 12 statements that describe different forms of interaction with individuals with severe mental illness, varying in level of intimacy (Appendix B). Examples of items that depict the least intimate contact include “I have never observed a person that I was aware had a severe mental illness” and “I have watched a movie or television show in which a character depicted a person with mental illness”. Statements representing the most intimate

levels of contact in this scale include “I live with a person who has a severe mental illness” and “I have a severe mental illness”. The statements are not presented in order of intimacy – they are randomly arranged. Participants are asked to indicate all the situations that they have experienced during their life. All 12 situations have been rank-ordered from least to most intimate contact, corresponding to a score range of 1 (*least intimate*) to 12 (*most intimate*). The overall score on this measure is based on the rank-order of the most intimate level of contact endorsed by the participant.

Attribution Questionnaire (AQ-27; Corrigan et al., 2004). The AQ-27 is a self-report measure of public stigma towards individuals with mental illness, and is based on the attributional model described previously in this paper (Corrigan et al., 2003; Weiner, Perry & Magnusson, 1988). It was used to assess how strongly participants endorse stigmatizing stereotypes, prejudice, and discriminatory actions towards the individual depicted in the vignette. The AQ-27 consists of 27 items rated on a 9-point Likert scale (1 = *not at all*, 9 = *very much*), which are grouped into 9 different subscales corresponding to the stereotypes, prejudices and discriminatory actions that have been examined within the attributional model in previous research (Corrigan et al., 2003; Weiner, Perry & Magnusson, 1988). Higher scores indicate greater endorsement of stigma towards the target individual, in the form of stereotypes, prejudice, and discriminatory actions. Of these 9 subscales, 2 measure stereotypes: Dangerousness, e.g., “I would feel unsafe around Harry.” and Blame, e.g., “How responsible, do you think, is this person for their present condition?”. 3 subscales measure prejudice: Anger, e.g., “How angry would you feel at this person?”, Pity, e.g., “How much sympathy would you feel for this person?”, and Fear, e.g., “How scared of this person would you feel?”. Lastly, 4 subscales measure discrimination: Avoidance, e.g., “If I were a landlord, I probably would rent an apartment to this person.”,

Segregation, e.g., “I think it would be best for this person’s community if they were put away in a psychiatric hospital.”, Coercion, e.g., “. If I were in charge of this person’s treatment, I would force them to live in a group home.”, and Help, e.g., “I would be willing to talk to this person about their problems.”

Some adaptations have been made to the AQ-27 for the purposes of our study. Firstly, in the original version of the scale, these items are presented following a brief description of a man named “Harry” who suffers from schizophrenia. Because our study uses gender-neutral language in the disorder vignette descriptions, the wording of the items in this measure was adapted into a gender-neutral version as well (Appendix C).

Additionally, we added a WNS subscale to this measure, a stereotype that has been highlighted as particularly relevant to SAD stigma in the review by Curcio and Curboy (2019). Inclusion of this subscale will allow us to further understand how WNS perceptions apply to attribution theory in SAD, as well as the role it plays in depression- and schizophrenia- specific stigma. This subscale consists of three items that have been taken from the Depression Stigma Scale (DSS): “People with depression could snap out of it if they wanted.”, “Depression is a sign of personal weakness.” and “Depression is not a real medical illness.” (Griffiths et al., 2004). Previous studies examining WNS perceptions have also used the DSS (e.g., Jorm & Wright, 2008; Reavley & Jorm, 2011; Yoshioka et al., 2014). The format of these three items has been modified to more closely resemble the existing items in the AQ-27. Specifically, the rating scale has been changed from a 5-point Likert scale (0 = *strongly disagree*, 4 = *strongly agree*) used in the DSS to the 9-point Likert scale like the rest of the AQ-27 items. The items have also been reworded to match the language used in the AQ-27 items without mentioning a specific disorder, e.g., “I think that this person could snap out of it if they wanted.”.

The AQ-27 has demonstrated good internal consistency, test-retest reliability, and convergent validity with other established measures of desire for social distance (Brown, 2008; Corrigan et al., 2004; Fox et al., 2018; Rusch et al., 2010a; Rusch et al., 2010b). As previous research has not combined the WNS stereotype items from the DSS to form one subscale in this manner, there is no information on its psychometric properties in the literature. In the overall sample of the current study, most of the subscales showed good internal consistency:

Dangerousness ($\alpha = .95$), WNS ($\alpha = .86$), Fear ($\alpha = .95$), Anger ($\alpha = .86$), Avoidance ($\alpha = .83$), Help ($\alpha = .81$), Coercion ($\alpha = .77$), and Segregation ($\alpha = .93$). Of note, the Blame ($\alpha = .69$) and Pity ($\alpha = .64$) subscales had questionable internal consistency in the present sample.

Social Distance Scale (SDS; Link et al., 1987). The SDS is a self-report measure of desire for social distance from an individual depicted as suffering from a mental disorder. It consists of 7 items that ask the rater how willing they are to engage in various social situations with the target individual on a 4-point Likert scale (0 = *definitely willing*, 3 = *definitely unwilling*). Higher scores indicate a greater desire for social distance. The items have been reworded into a gender-neutral format for the purposes of this study (Appendix D). Though the AQ-27 contains an Avoidance subscale that also assesses desire for social distance, the SDS was included as a separate, more comprehensive measure of this aspect of discrimination. The SDS has demonstrated good internal consistency in past research (Corrigan et al., 2002; Link et al., 1987; Penn et al., 1994). The internal consistency of the SDS was $\alpha = .92$ in the present sample.

Materials

Participants were randomly assigned to one of three disorder vignette conditions – SAD, depression, or schizophrenia. Each vignette consisted of a short description of a fictional individual who suffers from that particular disorder. They were developed by the research team

using DSM-5 diagnostic criteria (see Appendix E for the vignettes), which is largely consistent with past research (e.g. Amarasuriya et al. 2017; Anderson et al., 2015; Jorm & Wright, 2008).

As the sex of the described individual in the vignette may influence ratings of stigma, the vignettes were written in gender-neutral language to mitigate any such confounding effects.

Procedure

Through an online survey, consenting participants were presented with a vignette describing an individual with either SAD, depression, or schizophrenia. They were assigned to one of three conditions through SurveyMonkey's simple randomization. Participants were then asked to complete a questionnaire that includes questions about the participant's beliefs and emotional reactions towards the individual in the description, as well as the types of actions they might direct towards the individual in social, occupational, and healthcare settings. Participants were also asked to provide demographic information, such as their age, sex, ethnicity, and level of contact with individuals with mental illness in their own lives.

Statistical Analyses

The first question the current study seeks to answer is whether there are differences in the strength of endorsement of specific stereotypes, prejudice, and discriminatory behaviours across the three disorder conditions. In particular, we were interested in the WNS and blame attitudes, feelings of pity, and helping and avoidance behaviours. To understand whether there is a difference in these scores between the three disorders, we conducted a one-way analysis of variance (ANOVA) for each of the five stigma components, with the disorder condition as the independent variable and corresponding subscale or scale score as the dependant variable. For the purposes of this analysis, the avoidance scores were obtained from the SDS, and the scores for the other four components were obtained from the corresponding AQ-27 subscales. The

direction of any differences identified in the ANOVA analysis were further explored with post-hoc tests.

The second aim of the study is to explore the associations between specific stereotypes and emotional reactions, as well as the associations between specific emotions and discriminatory behaviours in each disorder condition. To examine this, we conducted two hierarchical multiple regressions on the entire sample: (1) one that examines whether the three stereotype subscales of the modified AQ-27 (i.e., Blame, Dangerousness, and WNS) predict a composite of the AQ-27 prejudice subscales (i.e., combined score on Pity, Anger, and Fear); and (2) one that examines the three AQ-27 prejudice subscales as individual predictors of a composite of the discrimination subscales on the AQ-27 (i.e., combined score on Avoidance, Segregation, Coercion, and Help). The effects of these predictors within each disorder condition were assessed by conducting the hierarchical regressions in the form of a Potthoff analysis (see Weaver & Wuensch, 2013). In both regressions, the participants' sex and level of contact with people with mental illness were entered in the first step as control variables, since previous research suggests that these factors impact the level of stigma (e.g., Corrigan et al., 2012; Jorm & Wright, 2008). To avoid overfitting the regression models (Babyak, 2004), only participants who identified as Female or Male were included in the regressions due to the low number of participants specifying "Other" ($n = 2$) or "Prefer Not to Answer" ($n = 3$). In the second step of each regression, we added the three AQ-27 (1) stereotype or (2) prejudice subscale predictors. We expect a statistically significant improvement in the R^2 value of the regression model between Steps 1 and 2, indicating that these predictors are contributing to the model above and beyond the control variables. In the third and final step, disorder condition and interactions terms between disorder condition and each predictor and control variable were added. A statistically

significant change in the r-squared (R^2) value of the regression model would indicate that the regression model is significantly different across the three disorder conditions.

Lastly, we conducted three exploratory hierarchical multiple regressions using Potthoff analyses in the same three-step fashion described above. Our aim was to identify the stereotypes that predict feelings of pity, and the emotional reactions that predict avoidance and helping behaviours separately for each disorder condition. To examine this, we conducted three hierarchical multiple regressions on the entire sample: (1) one that examined which of the three stereotype subscales of the modified AQ-27 predict the AQ-27 Pity subscale; (2) one that examined which of the three AQ-27 prejudice subscales predicts the AQ-27 Avoidance subscale; (3) and one that examined which of the three AQ-27 prejudice subscales predicts the AQ-27 Help subscale.

Results

The ANOVA analyses were conducted using version 26 of IBM SPSS Statistics. All other data analyses were conducted using version 16 of Statacorp Stata Statistical Software.

Data Screening Analyses

Modified AQ-27 Composite Scores. The prejudice and discrimination composite scores were computed by combining the corresponding subscale scores so that higher scores indicate greater stigma. The scores for all subscales comprising the prejudice composite (fear, anger, and pity) were combined as measured. Thus, high scores on any of the subscales, including pity, were conceptualized as representing greater prejudice. The AQ-27 also conceptualizes pity as a form of prejudice (Corrigan, 2008), which is consistent with observed correlations between pity and other relevant subscales in the current study. The Pity subscale demonstrated a significant positive correlation with the Coercion ($r = .24, p < .001$) and Help ($r = .28, p < .001$) subscales.

Positive correlations were also observed for the Segregation, Avoidance, Fear, and Anger subscales, though these were not statistically significant. Though pitying emotional reactions have often been conceptualized as having beneficial effects in the literature, Fominaya and colleagues (2016) suggest that the role of pity in stigma is more complex: it can lead to both positive outcomes (e.g., helping behaviours) and/or negative consequences (e.g., “benevolence stigma” and authoritarian responses).

In terms of the discrimination composite, some changes were made to the scoring of one subscale to ensure that higher scores on the discrimination composite communicates greater endorsement of stigmatizing behaviours. Specifically, the Help subscale scores were reverse scored in the computation of the discrimination composite, such that lower help ratings indicated greater stigma. This decision was based on prior research conceptualizing helping behaviours as a positive outcome and observed significant negative correlations between the Help and three other discrimination subscales in the current study (Avoidance, $r(30) = -.64, p < .001$; Coercion, $r = -.33, p < .001$; Segregation, $r = -.44, p < .001$). Both the prejudice ($\alpha = .79$) and discrimination composites ($\alpha = .91$) had acceptable internal consistency in the overall sample.

Outliers. Outliers on the Level-of-Contact Report, modified AQ-27 subscale and composite scores, and SDS scores were identified through a visual inspection of box plots within each disorder condition. Data points outside the upper limit (Upper Quartile + 1.5 x Interquartile Range) or lower limit (Lower Quartile - 1.5 x Interquartile Range) were considered outliers. Within each disorder condition, upper limit outliers were reduced to the highest data point on the measure plus one point. There were 9 upper limit outliers for the SAD condition across the Dangerousness, Fear and Segregation scores, 28 DEP outliers across the Dangerousness, Fear, Coercion, Segregation, and Discrimination composite scores, and 3 outliers on the Help subscale

for the SCH condition. Data were omitted for one participant in the SAD condition in all subsequent analyses due to ceiling scores across almost all AQ-27 subscales. Similarly, lower limit outliers were increased to the lowest data point on the measure minus one data point. There was 1 lower limit outlier on the Pity subscale for SAD, 13 outliers across the Pity, Coercion, Prejudice composite, and SDS scores for the DEP condition, and 37 outliers across the Dangerousness, Fear, Pity, Avoidance, Help, Coercion, Prejudice composite, Discrimination composite, and SDS scores for the SCH condition. This approach to handling outliers was based on recommendations by Tabachnick and Fidell (2013).

Missing Data. Demographic data for age could not be obtained for 1 participant in the DEP group, and year of study could not be obtained for 1 participant in the SCH group. Less than 1% of the items were missing across the modified AQ-27 and SDS scales individually. The three disorder conditions did not differ in the proportion of missing data. Little's Missing Completely at Random (MCAR; Little, 1988) test indicated that the data was missing at random, $\chi^2 = 586.56$, $p = .07$. Missing items on the AQ-27 and SDS were imputed using mean substitution within each disorder condition.

Statistical Test Assumptions. The subscale and composite scores used in the ANOVA and regression analyses showed a largely normal distribution within each disorder condition based on inspection of histograms. For most regressions, the final Step 3 model met the OLS regression assumptions of residual normality, homoscedasticity, independence and linearity based on visual inspections of density and scatter plots. The exploratory regression examining predictors of helping intentions showed some heteroscedasticity, so robust standard error estimates were used for the regression coefficients in this analysis.

Descriptive Statistics

Descriptive statistics for demographic variables are provided in Table 1 for each disorder condition. There were no significant differences in age, sex, ethnicity, or year of study across the conditions. The mean scores, standard deviations and ranges for the Level-of-Contact Report, modified AQ-27 subscales and composite scales, and SDS are provided in Table 2.

Table 1

Descriptive Statistics for Demographic Variables by Disorder Condition

Demographic	Group								
	SAD (<i>n</i> =79)			DEP (<i>n</i> =114)			SCH (<i>n</i> =109)		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Age	79	21.5	4.8	113	21.9	5.7	109	22.1	5.9
	<i>n</i>	%		<i>n</i>	%		<i>n</i>	%	
Sex	79			114			109		
Female	64	81		98	85.9		97	89	
Male	14	17.7		13	11.4		11	10.1	
Other	0	0		1	0.88		1	0.9	
Prefer Not to Answer	1	1.3		2	1.75		0	0	
Ethnicity	79			114			109		
White/European	60	75.9		90	78.9		73	67.0	
Indigenous	6	7.6		9	7.9		11	10.1	
Black	5	6.3		5	4.4		10	9.2	
Asian	7	8.9		5	4.4		9	8.3	
Hispanic/Latin American	0	0		1	0.9		0	0	
Biracial/Multicultural	1	1.3		4	3.5		5	4.6	
Other	1	1.3		0	0		4	3.7	
Year of Study	79			114			108		
1	44	55.7		56	49.1		59	54.6	
2	15	19		30	26.3		19	17.6	
3	9	11.4		13	11.4		19	17.6	
4	9	11.4		12	10.5		11	10.2	
5 or more	2	2.5		3	2.6		0	0	

Table 2*Descriptive Statistics for Measures of Interest by Disorder Condition*

Measure	Group								
	SAD (n=79)			DEP (n=114)			SCH (n=109)		
	<i>M</i>	<i>SD</i>	<i>Range</i>	<i>M</i>	<i>SD</i>	<i>Range</i>	<i>M</i>	<i>SD</i>	<i>Range</i>
Level-of-Contact Report	8.3	3.1	1-12	9.4	2.6	2-12	9.0	2.9	2-12
AQ-27 Subscale									
Stereotypes									
Dangerousness	7.4	5.0	3-22	6.6	3.7	3-16	18.0	5.3	6-27
WNS	15.9	6.4	3-27	16.9	6.5	3-27	13.2	6.2	3-27
Blame	13.9	5.6	3-27	15.4	5.4	3-27	12.4	5.3	3-25
Prejudice									
Fear	7.4	4.8	3-21	6.9	4.2	3-19	17.6	5.2	5-27
Pity	16.7	4.4	4-27	17.8	4.6	5-27	18.4	3.7	10-27
Anger	11.8	5.4	3-27	13.0	5.4	3-23	14.6	5.2	3-25
Discrimination									
Coercion	11.8	5.9	3-27	13.9	4.7	3-24	18.6	4.0	11-27
Segregation	7.7	5.4	2-24	7.2	4.1	3-17	16.3	6.1	3-27
Help	16.1	5.5	2-27	15.7	5.4	3-27	12.0	4.8	4-24
Avoidance	14.4	5.9	3-27	16.7	6.1	3-27	22.0	4.8	10-27
AQ-27 Composite									
Prejudice	32.3	9.2	10-55	32.1	9.4	9-55	43.9	9.7	18-65
Discrimination	47.8	18.8	13-89	51.9	13.6	20-84	75.2	14.3	43-102
SDS	9.4	5.1	0-21	11.4	4.0	2-21	15.4	3.7	6-21

Note. AQ-27 = Modified Attribution Questionnaire; SDS = Social Distance Scale

Differences in Specific Stereotypes, Prejudice and Discrimination Across Conditions

Due to sample size discrepancies and variance heterogeneity across disorder conditions, Welch's ANOVA was conducted for each stigma component of interest on the entire sample ($n = 302$). The results showed that the three conditions significantly differed in ratings of Blame, $Welch's F(2, 185.75) = 8.71, p < .001$, WNS attitudes, $Welch's F(2, 187.62) = 10.11, p < .001$,

Pity, *Welch's F*(2, 183.96) = 3.88, $p = .022$, Help, *Welch's F*(2, 184.39) = 20.01, $p < .001$, and Avoidance, *Welch's F*(2, 177.03) = 851.50, $p < .001$.

To identify where these differences lie, post-hoc comparisons were made using the Games-Howell Test. These test results are provided in Table 3. Average Blame ratings were higher for the DEP condition compared to the SCH condition. There were no significant differences in Blame scores between these two conditions and the SAD condition. Next, WNS attitudes were most weakly endorsed for the SCH condition, with no difference found between the SAD and DEP conditions. Further, Pity scores were higher for the SCH condition relative to the SAD condition. The DEP condition Pity ratings did not differ significantly from either of these conditions. In terms of helping behaviours, the SCH condition had the lowest rating out of the three conditions. The SAD and DEP conditions did not differ from each other on this subscale. Lastly, Avoidance was most strongly endorsed for the SCH condition, followed the DEP condition. The SAD condition had the lowest average avoidance scores.

Table 3

Post-Hoc Results for Stigma Components of Interest by Disorder Condition

Measure	Condition Comparison (I vs J)	Mean Difference (I – J)
AQ-27 Blame	SAD vs. DEP	-1.48
	SAD vs. SCH	1.50
	DEP vs. SCH	2.98*
AQ-27 WNS	SAD vs. DEP	-0.90
	SAD vs. SCH	2.80*
	DEP vs. SCH	3.70*
AQ-27 Pity	SAD vs. DEP	-1.09
	SAD vs. SCH	-1.69*
	DEP vs. SCH	-0.60

	SAD vs. DEP	0.36
AQ-27 Help	SAD vs. SCH	4.03*
	DEP vs. SCH	3.68*
	SAD vs. DEP	-1.98*
SDS Total	SAD vs. SCH	-5.99*
	DEP vs. SCH	-4.01*

Note. AQ-27 = Modified Attribution Questionnaire; WNS = Weak-not-Sick; SDS = Social Distance Scale.

* $p > .05$

Associations Between Specific Stereotypes and Affective Reactions

Results from the hierarchical multiple regression examining the three stereotype subscales (blame, danger, and WNS) as predictors of the prejudice composite (anger, pity, and fear) are described here. In Step 1, the control variables of sex and level of contact were not significant predictors of the prejudice composite scores, $F(2, 294) = 1.06, p = .35$. The introduction of the three stereotype predictor variables accounted for an additional 70% of the variance in the prejudice composite scores (Adjusted $R^2 = .70$). The increase in R^2 between Step 1 and 2 was statistically significant, $F(3, 291) = 227.23, p < .001$. Two of three stereotype subscales were significant predictors in the Step 2 model (Dangerousness, $B = 1.37, p < .001$; WNS, $B = 0.18, p = .02$). After the addition of disorder condition and its interaction terms with the predictor and control variables in Step 3, R^2 increased by 0.02, $F(12, 279) = 1.97, p = .03$, indicating that the regression models differ by condition. None of the control variables or their interaction terms with disorder condition were statistically significant in the full model.

Regression statistics for the stereotype predictor variables in the final model are detailed in Table 4. The interaction between disorder condition and dangerousness scores were statistically significant for all three conditions. The interaction between disorder condition and

WNS scores were statistically significant for the SAD condition only. Lastly, the interaction between disorder condition and Blame scores was significant for the DEP condition only.

Table 4

Stereotype Predictors of the AQ-27 Prejudice Composite

Final Model Summary	<i>Adj. R²</i>	<i>F</i>	<i>N</i>	<i>p</i>	
	.71	43.53	297	>.001	
Predictor Variable	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>95% CI</i>
Dangerousness					
SAD	1.58	0.15	10.54	<.001	[1.28, 1.87]
DEP	1.61	0.17	9.53	<.001	[1.28, 1.94]
SCH	1.35	0.12	11.47	<.001	[1/12, 1.58]
WNS					
SAD	0.44	0.16	2.82	.005	[0.23, 0.75]
DEP	0.11	0.13	0.83	.41	[-0.15, 0.37]
SCH	0.02	0.13	-0.03	.98	[-0.24, 0.27]
Blame					
SAD	-0.26	0.17	-1.58	.12	[-0.59, 0.06]
DEP	0.34	0.15	2.06	.04	[0.01, 0.62]
SCH	-0.01	0.15	-0.03	.98	[-0.30, 0.29]

Note. SAD = Social Anxiety Disorder vignette condition; DEP = Depression vignette condition; SCH = Schizophrenia vignette condition; WNS = AQ-27 Weak-not-Sick subscale.

Associations Between Specific Affective Reactions and Discriminatory Behaviours

Results from the hierarchical multiple regression examining the three prejudice subscales as predictors of the discrimination composite are described here. In Step 1, the control variables of sex and level of contact were not significant predictors of the discrimination composite scores, $F(2, 294) = 0.25, p = .78$. The introduction of the three prejudice predictor variables accounted for an additional 63% of the variance in the prejudice composite scores (Adjusted $R^2 = .62$). The increase in R^2 between Step 1 and 2 was statistically significant, $F(3, 291) = 164.97, p < .001$. Fear, $B = 2.06, p < .001$, and Anger, $B = 0.45, p = .002$, were significant predictors in the Step 2

model. After the addition of disorder condition and its interaction terms with the predictor and control variables in Step 3, R^2 increased by 0.05, $F(12, 279) = 3.41, p < .001$, indicating that the regression models differ by condition. None of the control variables or their interaction terms with disorder condition were statistically significant in the full model.

Regression statistics for the prejudice predictor variables in the final model are detailed in Table 5. The interaction between disorder condition and Fear scores were statistically significant for all three conditions. The interaction between disorder condition and Pity scores was statistically significant for the SCH condition. Lastly, the interaction between disorder condition and Anger scores was significant for the SAD and DEP conditions.

Table 5

Affective Reactions Predicting the AQ-27 Discrimination Composite

Final Model Summary		<i>Adj. R²</i>	<i>F</i>	<i>N</i>	<i>p</i>	
		.66	34.49	297	>.001	
Predictor Variable		<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>95% CI</i>
Fear						
SAD		2.39	0.33	7.26	<.001	[1.75, 3.04]
DEP		1.10	0.30	3.62	<.001	[0.50, 1.70]
SCH		2.03	0.25	8.22	<.001	[1.54, 2.51]
Pity						
SAD		0.14	0.30	0.46	.64	[-0.45, 0.73]
DEP		-0.41	0.24	-1.72	.09	[-0.87, 0.06]
SCH		-0.67	0.31	-2.17	.03	[-1.27, -0.06]
Anger						
SAD		0.82	0.29	2.86	.005	[0.26, 1.39]
DEP		0.78	0.23	3.41	.001	[0.33, 1.22]
SCH		-0.17	0.25	-0.70	.49	[-0.67, 0.32]

Note. SAD = Social Anxiety Disorder vignette condition; DEP = Depression vignette condition;

SCH = Schizophrenia vignette condition.

Exploratory Hierarchical Multiple Regression 1: Predictors of Pity

Results from the exploratory hierarchical multiple regression examining the three stereotype subscales as predictors of Pity are described here. In Step 1, the control variables of sex and level of contact were not significant predictors of Pity, $F(2, 294) = 0.88, p = .42$. The introduction of the three stereotype predictor variables accounted for an additional 3.62% of the variance in Pity scores (Adjusted $R^2 = .02$). The increase in R^2 between Step 1 and 2 was statistically significant, $F(3, 291) = 3.66, p = .01$. Blame was the only significant predictor in the Step 2 model, $B = -0.13, p = .04$. After the addition of disorder condition and its interaction terms with the predictor and control variables in Step 3, R^2 increased by 0.08, $F(12, 279) = 2.17, p = .01$, indicating that the regression models differ by condition. None of the control variables or their interaction terms with disorder condition were statistically significant in the full model. Regression statistics for the stereotype predictor variables in the final model are detailed in Table 6. The only statistically significant interactions between disorder condition and stereotype subscales were found for the SAD condition: WNS and Blame were predictors of Pity scores.

Table 6*Stereotypes Predicting Feelings of Pity*

Final Model Summary	<i>Adj. R²</i>	<i>F</i>	<i>N</i>	<i>p</i>	
	.07	2.32	297	.002	
Predictor Variable	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>95% CI</i>
Dangerousness					
SAD	0.08	0.10	0.79	.43	[-0.16, 0.27]
DEP	-0.03	0.11	-0.29	.77	[-0.25, 0.19]
SCH	0.12	0.08	1.57	.12	[-0.31, 0.27]
WNS					
SAD	0.29	0.10	2.83	.005	[0.09, 0.49]
DEP	-0.10	0.09	-1.18	.24	[-0.27, 0.07]
SCH	-0.10	0.09	-1.17	.24	[-0.27, 0.07]
Blame					
SAD	-0.38	0.11	-3.48	.001	[-0.60, -0.17]
DEP	0.08	0.10	0.85	.39	[-0.11, 0.28]
SCH	-0.17	0.10	-1.68	.09	[-0.36, 0.03]

Note. SAD = Social Anxiety Disorder vignette condition; DEP = Depression vignette condition;

SCH = Schizophrenia vignette condition; WNS = AQ-27 Weak-not-Sick subscale.

Exploratory Hierarchical Multiple Regression 2: Predictors of Help

Results from the hierarchical multiple regression examining the three prejudice subscales as predictors of helping behaviours are described here. In Step 1, the control variables of sex and level of contact were not significant predictors of the discrimination composite scores, $F(2, 294) = 0.20, p = .82$. The introduction of the three prejudice predictor variables accounted for an additional 30% of the variance in Help scores (Adjusted $R^2 = .29$). The increase in R^2 between Step 1 and 2 was statistically significant, $F(3, 291) = 41.19, p < .001$. All three prejudice subscales were significant predictors in the Step 2 model (Fear, $B = -0.32, p < .001$; Pity, $B = 0.42, p < .001$; Anger, $B = -0.13, p = .03$). After the addition of disorder condition and its interaction terms with the predictor and control variables in Step 3, R^2 increased by 0.06, $F(12,$

279) = 2.23, $p = .01$, indicating that the regression models differ by condition. None of the control variables or their interaction terms with disorder condition were statistically significant in the full model. Regression statistics for the prejudice predictor variables in the final model are detailed in Table 7. The interaction between disorder condition and Fear scores was statistically significant for the SAD and SCH conditions. The interaction between disorder condition and Pity scores was statistically significant for the DEP and SCH conditions. Lastly, anger was a significant predictor of discrimination composite scores only for the DEP condition.

Table 7*Affective Reactions Predicting Helping Behaviours*

Final Model Summary	<i>Adj. R²</i>	<i>F</i>	<i>N</i>	<i>p</i>	
	.32	9.25	297	>.001	
Predictor Variable	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>95% CI</i>
Fear					
SAD	-0.40	0.13	-3.06	.002	[-0.66, -0.14]
DEP	0.06	0.12	0.57	.57	[-0.17, 0.31]
SCH	-0.40	0.10	-4.04	<.001	[-0.59, -0.20]
Pity					
SAD	0.18	0.12	1.49	.14	[-0.06, 0.42]
DEP	0.58	0.09	6.10	<.001	[0.39, 0.76]
SCH	0.51	0.12	4.15	<.001	[0.27, 0.75]
Anger					
SAD	-0.20	0.12	-1.74	.08	[-0.43, 0.03]
DEP	-0.24	0.09	-2.64	.01	[-0.42, -0.06]
SCH	0.05	0.10	0.47	.64	[-0.15, 0.24]

Note. SAD = Social Anxiety Disorder vignette condition; DEP = Depression vignette condition;

SCH = Schizophrenia vignette condition.

Exploratory Hierarchical Multiple Regression 3: Predictors of Avoidance

Results from the hierarchical multiple regression examining the three prejudice subscales as predictors of avoidance are described here. In Step 1, the control variables of sex and level of

contact were not significant predictors of the discrimination composite scores, $F(2, 294) = 0.45$, $p = .64$. The introduction of the three prejudice predictor variables accounted for an additional 30% of the variance in Help scores (Adjusted $R^2 = .29$). The increase in R^2 between Step 1 and 2 was statistically significant, $F(3, 291) = 40.55$, $p < .001$. Only Fear was a significant predictor in the Step 2 model (Fear, $B = 0.47$, $p < .001$). After the addition of disorder condition and its interaction terms with the predictor and control variables in Step 3, R^2 increased by 0.06, $F(12, 279) = 2.23$, $p = .01$, indicating that the regression models differ by condition. None of the control variables or their interaction terms with disorder condition were statistically significant in the full model. Regression statistics for the prejudice predictor variables in the final model are detailed in Table 8. The only statistically significant interactions between disorder condition and stereotype subscales were found for Fear scores. Fear was a significant predictor of avoidance for the SAD and SCH conditions.

Table 8*Affective Reactions Predicting Avoidance*

Final Model Summary		<i>Adj. R²</i>	<i>F</i>	<i>N</i>	<i>p</i>	
		.32	11.15	297	>.001	
Predictor Variable		<i>B</i>	<i>Robust SE</i>	<i>t</i>	<i>p</i>	<i>95% CI</i>
Fear						
	SAD	0.49	0.16	3.08	.002	[0.18, 0.80]
	DEP	0.19	0.13	1.40	.16	[-0.07, 0.45]
	SCH	0.41	0.10	3.96	<.001	[0.21, 0.62]
Pity						
	SAD	0.04	0.16	0.27	.79	[-0.27, 0.36]
	DEP	-0.25	0.15	-1.71	.09	[-0.54, 0.04]
	SCH	-0.07	0.13	-0.54	.59	[-0.32, 0.19]
Anger						
	SAD	0.11	0.15	0.76	.45	[-0.18, 0.41]
	DEP	0.22	0.13	1.64	.10	[-0.04, 0.48]
	SCH	-0.07	0.11	-0.67	.50	[-0.29, 0.14]

Note. SAD = Social Anxiety Disorder vignette condition; DEP = Depression vignette condition; SCH = Schizophrenia vignette condition.

Discussion

Findings from the current study add to the existing literature suggesting that mental illness stigma varies across disorders. Expanding on previous research, we compared the perceived stigma associated with more common and severe mental disorders in the context of attribution theory, accounting for a broader range of stigmatizing stereotypes, emotional reactions and discriminatory behaviours. The primary purpose of this study was to better understand stigma components that may be most applicable to more common mental disorders, especially SAD, such as WNS and blame attitudes, feelings of pity, and avoidance and helping behaviours. Our research findings were largely mixed: Hypotheses 1 and 2 were partially supported.

Disorder Specific Differences in Stigma Components

Firstly, it was hypothesized that WNS and blame stereotypes, feelings of pity, and helping behaviours would be more strongly endorsed for SAD and depression compared schizophrenia, with WNS attitudes being most strongly endorsed for SAD. The results indicated partial support for this hypothesis. As expected, we found that the depression vignette elicited greater attitudes of blame relative to the schizophrenia vignette. However, mean blame ratings for the SAD vignette did not differ from either depression or schizophrenia. A past study found that the UK public viewed depression and anxiety as equally blameworthy, and more so relative to schizophrenia (Wood et al., 2014). The lack of significant differences in blame attitudes between SAD and either of the other two conditions may be because the SAD vignette mean blame scores were halfway between the depression and schizophrenia scores in the current study

sample. When accounting for measurement error, the true SAD blame mean may be more similar to either that of depression or schizophrenia.

Variations in study characteristics with Wood et al. (2014) may also play a role in the observed inconsistency in results. While Wood et al. (2014) obtained a sample of the general UK population through stratified random sampling, the current study sample consisted of undergraduate students in a mid-sized Ontario university. Though many studies have found significant levels of stigma within specific student groups, few have made direct comparisons between students and the general population. One group of researchers found that medical and nursing students endorsed lower avoidance of individuals with various mental disorders compared to the general public in Pakistan (Husain et al., 2020). These discrepancies may also be due to Wood et al. (2014) measuring personal stigma whereas our study measured perceived stigma. Of note, the “patient blame” scale identified through a factor analysis by Wood et al. (2014) consisted of items such as “could pull themselves together if they wanted” and “feel different from the way we feel at times”, which while related to blame attitudes, may fit better with other stigmatizing beliefs such as WNS attitudes. Thus, the findings related to “patient blame” attitudes in Wood et al. (2014) may be confounded with other stereotypes that were investigated separately in this study.

Further, we found that public beliefs that the condition is a weakness rather than a sickness were perceived to be stronger for both SAD and depression compared to schizophrenia. This is consistent with Wood and colleague’s (2014) findings that “patient blame” attitudes were equally endorsed for SAD and depression, considering that this scale contained some WNS items as well. No difference was identified in the intensity of WNS attitudes directed towards SAD and depression, suggesting that individuals with SAD and depression are perceived as being similarly

WNS by the public. This contrasts previous research findings that WNS attitudes are more highly endorsed for SAD relative to depression (Jorm & Wright, 2008; Reavley & Jorm, 2011; Yoshioka et al., 2014). The only consistent difference between the current study and all other studies demonstrating higher WNS beliefs for SAD is sample age: these past studies sampled adolescents and young adults (aged 12-25 years) from the general population or local high schools (Jorm & Wright, 2008; Reavley & Jorm, 2011; Yoshioka et al., 2014). Though this age range overlaps with the ages of the undergraduate students recruited for our study, previous research demonstrating higher WNS attitudes for SAD were largely skewed towards younger age groups. Therefore, one explanation for the inconsistency in findings across studies is that younger people perceive greater public endorsement of WNS attitudes towards SAD compared to depression, while older people believe that the public holds similar levels of WNS attitudes towards the two.

Other potential explanations for this discrepancy stem from methodological differences. Of note, all studies used the same individual items to assess WNS beliefs; however only our study combined the three items into a single subscale. While the current study compared mean WNS ratings on this subscale across disorders, other studies compared the relative proportion of participants “agreeing” or “strongly agreeing” with the individual items (Reavley & Jorm, 2011; Yoshioka et al., 2014). Out of the three items we combined into one subscale, only the “not a real medical illness” and “sign of personal weakness” items showed significantly higher agreement rates for SAD in these studies. Therefore, the inclusion of the third item (“could snap out of it”) in the WNS subscale may have resulted in the SAD and depression groups having similar mean WNS scores. Further, it remains unclear whether both personal and perceived WNS are relatively greater for SAD. Jorm and Wright’s (2008) findings only pertain to personal stigma, as

perceived WNS attitudes were not examined separately in their research. The other two studies examined personal and perceived WNS beliefs, with Reavley and Jorm (2011) finding the effect for both types and Yoshioka et al. (2014) only finding the effect for personal WNS attitudes. Considering this, personal, but not perceived, WNS attitudes may be higher for SAD compared to depression.

Contrary to our expectations, schizophrenia elicited greater feelings of pity compared to SAD, with depression not differing from either. Similar to the findings for blame attitudes, the absence of significant differences between depression and either of the other conditions may be explained by measurement error, with the true depression sample mean being more comparable to the pitying feelings elicited by either SAD or schizophrenia. Our original hypothesis was informed by previous research findings from a representative sample of the German population that suggested schizophrenia was more likely to elicit negative emotional reactions and depression was more likely to elicit more pro-social reactions. Particularly relevant to our study, depression elicited greater pity and empathy relative to schizophrenia (Angermeyer & Matschinger, 2003).

Though not directly measured in the current study, the observed results may be explained by differences in perceptions of controllability of the disorder. In considering biological and psychosocial causes of mental illness, the German public ascribed greater importance to biological factors for schizophrenia and psychosocial factors for depression (Schomerus et al., 2006). Similarly, psychosocial causes may be attributed to other more common mental disorders such as anxiety as well. Many studies have found that greater feelings of pity are directed towards individuals who are not perceived to be in control of a negative event (Corrigan et al.,

2000). As biological causes of mental illness are likely more consistent with perceptions of low controllability, schizophrenia may have been pitied more than SAD in the current study.

In line with our hypothesis, intentions to engage in helping behaviours were greater for SAD and depression relative to schizophrenia. These findings are also consistent with Angermeyer and Matschinger (2003), who found that the German public expressed greater desire to help individuals with depression relative to schizophrenia. Our study further demonstrated that perceptions of public helping intentions towards SAD are similarly greater than those directed towards schizophrenia and equal to those towards depression.

Lastly, we found that avoidance behaviours were most strongly endorsed for schizophrenia, followed by depression, and least for SAD. It has been widely documented in the literature that, compared to other disorders in general, social distance is desired to a greater degree from individuals with schizophrenia (Angermeyer & Dietrich, 2006; Feldman & Crandall, 2007; Parcesepe & Cabassa, 2013), which was replicated in the current study. Unexpectedly, depression was associated with a greater desire for social distance compared to SAD, suggesting that the public is perceived as being more accepting of individuals with SAD. Most past research making direct comparisons between depression and SAD demonstrated no difference in endorsement of avoidance behaviours towards the two disorders (Jorm & Wright, 2008; Reavley & Jorm, 2011; Yoshioka et al., 2014). Paralleling our findings, Anderson et al. (2015) also demonstrated that depression was associated with greater desire for social distance compared to SAD.

Differences in study characteristics, specifically sample age and use of gendered language in the vignettes, may be contributing to the discrepancy observed in the outcomes. As discussed earlier, Jorm and Wright (2008), Reavley and Jorm (2011), and Yoshioka et al. (2014)

sampled adolescents and young adults, while the current study and Anderson et al. (2015) recruited undergraduate students from a university population. The role of age in avoidance intentions appears to be complex. Jorm and Wright (2008) found that desire for social distance tended to decrease with age for individuals between 12-25 years, while other research findings suggest that it increased with age in adults 18 years or older (Schomerus et al., 2015). Because the age range of the present sample (16-50 years) overlaps with both studies, it is difficult to hypothesize how those findings may inform our study results. Also, whether the relationship between age and social distance further varies by type of mental illness has not been well examined in the literature, which is vital information to contextualize the discrepancy observed across studies. Thus, while differences in sample age may be contributing to these discrepant results, it is difficult to deconstruct the nature of its function.

Further, studies that identified greater avoidance behaviours towards depression, such as the current study, used gender neutral language in the wording of the vignettes. The studies that did not demonstrate such a difference used gendered language and either matched the gender of the participants to the individual depicted in the vignette or randomly assigned participants to a vignette describing either a male or female (Jorm & Wright, 2008; Reavley & Jorm, 2011; Yoshioka et al., 2014). Previous research has demonstrated that the gender of the individual being stigmatized, perceived gender of the disorder, and type of mental disorder interacts with each other to have differential effects on resulting stigma (e.g., Boysen et al., 2014; Boysen 2017; Wirth & Bodenhausen, 2009). In cases where gender neutral language is used, participants are free to imagine the individual being described in any way, which may have influenced social avoidance ratings.

Alternatively, perceptions that individuals with SAD are avoided the least may be explained by degree of mental health literacy. Previous research determined that perceived stigma towards depression (Lynch et al., 2021) and generalized anxiety (Calear et al., 2017) was associated with higher literacy levels about that condition. Interestingly, Lynch et al. (2021) found that less than 50% of a sample of adolescents accurately identified a vignette describing someone with SAD. Considering this, young adults may also have less knowledge about SAD and thus be less likely to perceive that the public would prefer to avoid those individuals. Similarly, perceptions of blame attitudes towards SAD may also have been attenuated due to lower levels of SAD literacy. As we did not assess whether participants could correctly identify the disorder being depicted in the vignettes, these possibilities could not be explored further in the current study.

Relationships Between Stereotypes and Prejudice

Another objective of our study was to identify stereotypes that predict stigmatizing affective reactions in general. Dangerousness and WNS beliefs predicted greater perceived prejudicial emotional reactions when data from the three disorders were pooled together. Based on the results of the Potthoff analysis, disorder condition accounted for a significant amount of variance in prejudice composite scores, suggesting that the predictors of prejudice differ across depression, SAD, and schizophrenia. Consistent with Hypothesis 2, higher WNS attitudes predicted more negative affective reactions; a finding that was exclusive to SAD. Thus, though WNS attitudes are equally endorsed for SAD and depression, they appear to play a unique role in the perceived stigma towards SAD exclusively. In terms of depression, we found that beliefs that the individual is to blame for their condition predicted greater perceived prejudice. This converges with previous research demonstrating that blame-based accounts of mental illness

were associated with higher negative affective reactions compared to non-blame-based accounts (Zwickert & Rieger, 2013).

The final regression model also showed that perceived dangerousness consistently predicted greater stigmatizing affective reactions for all disorders. The literature has commonly reported that schizophrenia is associated with perceptions of dangerousness (Angermeyer & Dietrich, 2006; Jorm et al., 2012; Parcesepe & Cabassa, 2013). Path and mediation models have also identified that dangerousness stereotypes lead to reactions of fear specifically towards people with schizophrenia (Corrigan et al., 2003) and general “mental illness” (Corrigan et al., 2002). People with depression are more commonly viewed as being a danger to themselves (Parcesepe & Cabassa, 2013), and our results suggest that this belief further predicts increased negative affect towards such individuals. In terms of SAD, it is unclear why perceptions of dangerousness would predict greater prejudice. Though it is reasonable for dangerousness to predict negative affective reactions in general, the presence of this relationship in the context of SAD is more perplexing. In line with our findings, past studies have also identified perceptions of dangerousness as a predictor of greater desire for social distance within SAD (Anderson et al., 2015; Jorm & Wright, 2008). One explanation is that, similar to depression, individuals with SAD may also be considered a danger to themselves. This possibility should be investigated in future research.

Since the use of composite scores as the outcome variable limits our understanding of specific affective reactions, we also conducted an exploratory regression examining predictors of perceived pity. Only blame attitudes predicted feelings of pity when all disorders were collectively analyzed, though the Potthoff analysis indicated that the predictors of pity differed across disorders. The final regression model accounting for disorder differences yielded

interesting results: WNS stereotypes predicted higher perceptions of pity and blame attitudes predicted lower perceptions of pity towards individuals with SAD. This is consistent with past research showing an association between higher blame stereotypes and lower feelings of pity (Corrigan et al., 2002; Corrigan et al., 2003; Menec & Penny, 1998). Of note, no significant predictors were identified for depression and schizophrenia, with the overall regression model accounting for only 7% of the variance in perceived pity. Thus, feelings of pity appear to be influenced by a variety of other factors that were not measured in the current study. Angermeyer and Matschinger (2003) identified a range of sociodemographic factors, causal attributions, and personal attributes that predict pity in schizophrenia and depression. In contrast to our findings, this study identified perceived dangerousness/unpredictability as a significant predictor of pity for both depression and schizophrenia (Angermeyer & Matschinger, 2003).

Relationships Between Prejudice and Discriminatory Behaviours

The final objective of this study was to identify which affective reactions predict perceived discrimination across the three disorders. In the total sample, higher discriminatory behaviours were predicted by greater fear and anger. This regression model also differed across the three disorders, with the only consistent predictor being perceived fear. Past research has similarly demonstrated that endorsement of fear is associated with greater discrimination towards general “mental illness” (Corrigan et al., 2002) and schizophrenia (Corrigan et al., 2003). Like the findings around dangerousness as a predictor of prejudice, it is unclear why fear would predict discriminatory behaviours in SAD and depression. In this case, the type of discriminatory behaviours assessed may explain these results, as two of the four scales comprising the discrimination composite were coercion and segregation. Fear is likely to be associated with

these forms of discrimination, even if they aren't as applicable to less severe disorders like depression and SAD.

Further, the unstandardized regression coefficients for fear were similar in the SAD and schizophrenia conditions and both were significantly greater than the fear coefficient for depression. Oddly enough, this implies that the amount of variance in perceived discriminatory behaviours accounted for by feelings of fear in SAD is equal to that of schizophrenia and greater than that of depression. Of note, there was greater variation in scores on the fear, coercion, segregation and overall discrimination composite scales within the SAD condition relative to depression. The variations in score ranges across conditions may have contributed to the SAD condition having a relatively higher fear coefficient than depression.

Differences were observed between disorders across the other prejudice predictors. Specifically, feelings of anger predicted higher levels of perceived discrimination for SAD and depression. Contrary to Hypothesis 2, pity was only a significant predictor for schizophrenia: greater feelings of pity were associated with decreased discriminatory behaviours. This pattern of results may be better understood while taking controllability attributions into consideration. As discussed earlier, feelings of pity are likely to be elicited if schizophrenia is perceived as being less controllable (Corrigan et al., 2000). On the other hand, depression and SAD may be viewed as controllable conditions, which would prompt feelings of anger.

Though the current study did not assess controllability attributions, the analysis examining the stereotypes that predict prejudicial reactions did demonstrate that blame and WNS attitudes were significant predictors for the depression and SAD conditions respectively. Corrigan and colleagues (2000) suggested that ascribing higher levels of controllability to a condition leads to attitudes of blame and personal responsibility, which elicits feelings of anger

and more punishing behaviours. WNS beliefs may play a similar role to blame attitudes in this process for SAD. Future research should examine the relationship between controllability attributions, WNS attitudes, feelings of anger, and discriminatory behaviours within SAD.

To better understand the relationships between affective reactions and specific types of discriminatory behaviours, exploratory multiple regressions were conducted for helping and avoidance behaviours. In terms of perceived helping intentions, all three prejudicial reactions (i.e., fear, pity, and anger) were significant predictors in the total sample. Once again, the affective reactions predicting perceived intentions to help differed by type of mental illness. Fear predicted lower helping intentions and pity was associated with greater helping intentions towards individuals with schizophrenia. For depression, willingness to help was predicted by greater pity and lower anger. The literature is inconsistent on whether anger, pity, or both are associated with helping behaviours for mental illness, with studies assessing drug addictions (Menec & Perry, 1998), learning disabilities (Hill & Dagnan, 2002), general “mental illness” (Corrigan et al., 2002) and schizophrenia (Corrigan et al., 2003; Obonsawin et al., 2013) showing mixed results. Our research suggests that type of mental illness may account for some of the inconsistent findings around the role of pity and anger.

The regression model identified for SAD was unusual, as fear was the only significant predictor of perceived intentions to help. A trend towards anger predicting lower willingness to help was also identified. It is difficult to explain why fear would be associated with helping behaviours for SAD. To make sense of these results, items on the AQ-27 Fear subscale were reviewed bearing in mind that feelings of “fear” exist on a spectrum ranging from more milder forms (e.g., uneasiness), to more intense forms (e.g., terror). This result would be more comprehensible if the subscale included more milder types of “fear”. However, items on the AQ-

27 Fear subscale very clearly relate to more extreme forms, as the language used on this subscale consist of words like “scared”, “frightened” and “terrified”.

While the existing literature on helping intentions does not provide any context for these unusual results in the current study, it does highlight other factors that may influence an individual’s decision to help another in general. Corresponding to our findings, one study examining predictors of helping behaviours for various mental disorders demonstrated that the predictors differed for each disorder, with female gender being the only consistent predictor (Rossetto et al., 2014). Additionally, Rosetto and colleagues (2014) found that being younger than 30 years old and greater WNS attitudes were associated with less help, while higher mental health literacy positively predicted helping behaviours for SAD. Another study demonstrated that vignettes containing implicit information on a target individual’s personality influences affective reactions (Stein & Weiner, 1999). A vignette describing an individual with AIDS that also made negative inferences about that person’s personality was associated with less pity and more anger. Personality traits such as agreeableness and neuroticism have also found to be generally associated with helping behaviours (Ucho et al., 2013).

In interpreting the findings around helping intentions, it is important to consider that different forms of help may differentially relate to stigma. Pertaining to helping intentions towards individuals with depression, Amarasuriya et al. (2017) demonstrated that WNS attitudes were positively correlated with providing support (e.g., providing emotional comfort and advice), but negatively correlated with recommending help from other informal or professional sources (e.g., friends, family, and mental health professionals). Thus, helping behaviours consist of a broad range of actions that can be broken down into more specific categories varying in quality and appropriateness. This study also highlights that the diverse forms of helping

intentions may have distinct, and potentially opposite, relationships to other stigma components. If some types of helping behaviours are associated with stigmatizing attitudes, those resulting behaviours may not always be positive; instead, they may be perpetuating stigma. Since the AQ-27 measures intentions to engage in broadly defined “help”, ratings on this subscale may be confounded by both positive and negative helping behaviours depending on each participant’s interpretation of “help”. Considering this, future stigma research should consider teasing apart the positive vs. negative forms of helping behaviours.

In the exploratory regression examining perceived avoidance, fear was the only significant predictor in the total sample. The Potthoff analysis indicated that the predictors of avoidance differed across the three disorders, with fear predicting greater perceived avoidance for SAD and schizophrenia only. This finding converges with past research demonstrating that feelings of fear are associated with avoidance for general “mental illness” (Corrigan et al., 2002) and schizophrenia (Corrigan et al., 2003). No predictors were identified for depression, though there was a trend towards feelings of pity predicting less avoidance. As there were some issues with heteroscedasticity for this regression, the relationship between affective reactions and avoidance behaviours should be re-examined in future research.

Limitations & Future Directions

The generalizability of these findings to other populations is limited. As the current study was conducted in a mid-sized Ontario university with a sample of primarily female and Caucasian university undergraduate students, these results may not be extrapolated to the general population. The gender distribution of the study sample may have also impacted our regression results. Many past studies have found that the gender of an individual affects the stigma they direct towards others (e.g., Jorm & Wright, 2008; Lynch et al., 2021; Rossetto et al., 2014), with

males generally endorsing greater public stigma relative to females. On the other hand, females were found to perceive greater stigma in others compared to males (Jorm & Wright, 2008; Lynch et al., 2021). However, sex was not a significant predictor in any of the analyses examining prejudicial reactions or discriminatory behaviours in the current study, potentially due to the small number of male participants resulting in low statistical power. As this is one of the first studies to examine the stigma associated with more common mental disorders in the context of attribution theory, this research area would benefit from replication, especially in more diverse populations.

Additionally, we only assessed the stigma associated with three types of mental illnesses which, as suggested by our results, are likely not generalizable to other mental disorders. Our understanding of mental illness stigma would greatly benefit from research on other mental disorders. Similarly, the perceived and personal stigma associated with specific disorders appear to differ both quantitatively and qualitatively (e.g., Lynch et al., 2021; Reavley & Jorm, 2011; Yoshioka et al., 2014). Therefore, it would be inappropriate to assume that perceptions of public stigma, as measured in the current study, are equivalent to actual public stigma.

Though the vignettes used in our research were developed based on DSM criteria, they were not validated. While some past studies validated their vignettes through review by clinical psychologists, the current study's vignettes were only reviewed by the research team. Considering this, there is a possibility that our vignettes may not be as representative of the disorders they were meant to portray even though they were based on diagnostic criteria.

A major limitation of this study is the use of the AQ-27 to assess the stigma associated with more common mental disorders. The original AQ-27 was constructed for schizophrenia stigma specifically (Corrigan et al., 2003; Corrigan et al., 2004). Thus, some of the comprising

subscales (e.g., fear, coercion, segregation) are applicable to more severe mental disorders but not common ones. Some of the AQ-27 subscales (blame and pity) also had questionable internal consistency in the current study, implying that the items on these scales are not consistent and so may not be measuring the same construct. Moreover, one study examining the psychometric properties of the original AQ-27 suggests that, instead of the nine original subscales, the measure actually consists of 6 factors: Fear/Dangerousness, Help/Interact, Responsibility, Forcing Treatment, Empathy, and Negative Emotions (Brown et al., 2008). The fact that we used separate subscales for dangerousness and fear may have contributed to the odd regression results relating to these components for SAD. Similarly, the use of separate helping behaviour and social distance subscales may have affected the avoidance and helping behaviour regression results.

We utilized the AQ-27 in spite of its limitations because it was the most comprehensive measure of stigma available. Disorder-specific stigma measures do exist, such as the Generalised Anxiety Stigma Scale (Griffiths et al., 2011). However, there are several limitations to these measures: they do not assess all three stigma components; there is no clear division of items based on category of stereotype or discriminatory behaviour; and only a subset of relevant attitudes and behaviours are measured, while emotional reactions are entirely excluded.

Related to this, another limitation of our study is the use of composite prejudice and discrimination scores to obtain an estimate of stigmatizing affective reactions and behaviours in general. As the global prejudice and discrimination estimates consisted of only three and four specific emotions and behaviours respectively, each measured emotion likely exerted a great deal of influence on which predictors were significant in the regression models. Therefore, the predictors identified in the analyses using composite scores as the outcome variable would have

likely differed if other affective reactions and discriminatory behaviours were included in the composite scores.

Considering this, it is vital to direct future research efforts towards exploring the stigmatizing attitudes, affective reactions and discriminatory behaviours directed towards other mental disorders. As a starting point, qualitative research would be helpful to better understand the public's views on specific disorders. This information can then inform the development of stigma measures that are more applicable to more common mental illnesses. As there is a dearth of scales assessing all three stigma components, especially affective reactions (Fox et al., 2018), special attention should be directed towards constructing measures that address this gap.

Implications

Despite its limitations, the current study makes important contributions to the mental illness stigma literature. The key takeaway from our research is that the dimensions and intensity of perceived public stigma towards individuals with mental illness largely depend on the disorder. It also emphasizes the important role of affective reactions in conceptualizing stigma. Building upon the small extant literature on WNS beliefs and SAD, the current study is the first to demonstrate a relationship between WNS attitudes and affective reactions that is exclusive to perceived SAD stigma. Further, our findings support previous research identifying specific path and mediation models based on the stereotype-emotion-behaviour sequence (e.g., Corrigan et al., 2002; Corrigan et al., 2003). They also add to this literature by suggesting that the inconsistent research around the blame-anger-pity-helping behaviours model may relate to disorder type, with anger being more relevant to depression and pity being more relevant to schizophrenia. The current study can also inform the development of path models describing the stigmatization

process for SAD. In particular, the relationships between WNS attitudes, anger, and discriminatory behaviours should be further examined in future studies.

Recent years have seen the proliferation of anti-stigma campaigns, a necessary step forward in improving outcomes for those living with mental illness. However, without a clear understanding of the harmful stereotypes and perceptions related to specific mental disorders, it is unclear how successful such efforts will be in achieving the desired goal. The development of effective campaigns would be well informed by research examining relevant dimensions of stigma for individual disorders. Our research suggests that anti-stigma campaigns for common mental disorders such as SAD and depression should target WNS and blame attitudes. By identifying negative stereotypes pertinent to specific disorders, we will be better able to target them and consequently reduce the discriminatory actions individuals with mental illness often encounter, both in their daily interactions and at an institutional level.

Addressing perceived stigma may be particularly important for mental illnesses like SAD. These individuals are less likely to seek treatment due to fear of what others may think (Olfson et al., 2000), and thus are likely more sensitive to perceived stigma and more vulnerable to its negative effects (Ociskova et al., 2013). Perceived WNS attitudes and the associated social consequences may be one such area of concern for individuals with SAD. Discussions around such concerns can be integrated into anti-stigma campaigns, self-stigma interventions, and/or diagnostic practices. These efforts can empower individuals to participate more fully in society, increasing their self-esteem, self-efficacy, and overall quality of life (Rüsch et al., 2005).

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Appendix A – Basic Demographics Questionnaire

Please provide the following information about yourself:

Age: _____

Sex: Male Female Other Prefer not to Answer

Ethnicity (check one):

- | | |
|---|--|
| <input type="checkbox"/> Indigenous (First Nations, Métis, Inuit) | <input type="checkbox"/> Asian (South Asian, East Asian, South East Asian) |
| <input type="checkbox"/> Black/Afro-Caribbean/African | <input type="checkbox"/> Bi-racial/Multicultural |
| <input type="checkbox"/> White/European | <input type="checkbox"/> Other (specify _____) |
| <input type="checkbox"/> Hispanic/Latin American | |

Year of Study: _____

Name of Undergraduate Study Major/Program: _____

Appendix B – Level of Contact Questionnaire

Please read each of the following statements carefully. After you have read all the statements below, place a check by the statements that best depict your exposure to persons with a severe mental illness.

I have watched a movie or television show in which a character depicted a person with mental illness.

My job involves providing services/treatment for persons with a severe mental illness.

I have observed, in passing, a person I believe may have had a severe mental illness.

I have observed persons with a severe mental illness on a frequent basis.

I have a severe mental illness.

I have worked with a person who had a severe mental illness at my place of employment.^[1]

I have never observed a person that I was aware had a severe mental illness.

My job includes providing services to persons with a severe mental illness.

A friend of the family has a severe mental illness.

I have a relative who has a severe mental illness.

I have watched a documentary on the television about severe mental illness.

I live with a person who has a severe mental illness.

Appendix D – Modified Social Distance Scale

Based on the description of the individual above, please rate the following statements on the following scale:

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

1. How would you feel about renting a room in your home to this person?
2. How about as a worker on the same job as this person?
3. How would you feel having this person as a neighbour?
4. How about as the caretaker of your children for a couple of hours?
5. How about having your children marry someone like this person?
6. How would you feel about introducing this person to a young woman you are friendly with?
7. How would you feel about recommending this person for a job working for a friend of yours?

Scoring: Sum the respondent's scores on all items to obtain the total scale score.

Appendix E – Disorder Vignettes

SAD

Imagine an individual who feels anxious when they interact with other people. They are worried that they will say or do something embarrassing and be judged or rejected by others. Because of this, the person avoids attending social gatherings and engaging in situations that require them to speak or perform in front of a group of people. If the person is unable to avoid these types of situations, they stutter, feel shaky, have sweaty palms, and go red in the face and ears. Though the individual acknowledges that these feelings and reactions to social situations are unreasonable, they have trouble controlling them.

Depression

Imagine an individual who has consistently been feeling sad and hopeless for a while. They find that they have lost interest in doing everything, including hobbies that they used to enjoy engaging in before. If they do bring themselves to participate in something, they are unable to concentrate. This has had a negative impact on their productivity and makes them feel guilty and worthless. Though this person feels exhausted all the time and has trouble getting out of bed, they also have trouble sleeping every night. Since they began feeling this way, they haven't been eating as much and have lost weight.

Schizophrenia

Imagine an individual who has become withdrawn over the past while. They often seem to be engaged in conversation or arguing with other people who are not actually there. They have almost entirely cut contact with their family and friends, and rarely tend to their personal hygiene and grooming needs. On the few occasions they interact with others, they appear preoccupied, avoid eye-contact, and mumble about being spied on. They have been hospitalized a few times due to these symptoms, and drug tests revealed they were not taking drugs.