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THE EFFECTS OF STEREOTYPE DISCONFIRMING INFORMATION AND SELF-
DISCLOSURE ON STEREOTYPE ENDORSEMENT, PREJUDICE, AND SOCIAL
TOLERANCE OF SCHIZOPHRENIA AND MAJOR DEPRESSIVE DISORDER

By

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B.A.,University of Louisville, 2008

A Thesis

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A Thesis Approved on

November 28, 2011

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DEDICATION

This thesis is dedicated to

Ronaldo "Chip" Cheng and his family.

ACKNOWLEDGEMENTS

ABSTRACT

THE EFFECTS OF STEREOTYPE DISCONFIRMING INFORMATION AND SELF-

DISCLOSURE ON STEREOTYPE ENDORSEMENT, PREJUDICE, AND SOCIAL

TOLERANCE OF SCHIZOPHRENIA AND MAJOR DEPRESSIVE DISORDER

Nicole Meyer

November 30, 2011

The current study examined how Disclosure, Stereotype Disconfirming Information, and Stereotype Disconfirming Information and Disclosure Combined) influences an individual's stigma (stereotype endorsement, emotional reactions, and discrimination) against individuals with Schizophrenia and Depression. The results of this experiment suggest that both Stereotype Disconfirming Information and Disclosure are successful in reducing stereotypes, emotional reactions, and social distance in the context of an interpersonal encounter. Self-disclosure, however, is stronger in increasing Pity and decreasing the desire for Social Distance than Stereotype Disconfirming Information. The combination of Stereotype Disconfirming Information and Disclosure provided the strongest stigma reduction, suggesting that Disclosure can benefit from the addition of Stereotype Disconfirming Information. However, our study also suggests that these strategies may have different effects depending on the disorder in question. The implication of these results and directions for future studies will be discussed.

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CHAPTER I:

INTRODUCTION

Mental Illness Stigma: An Individual Cognitive Model

A recent report issued from the National Institutes of Mental Health (NIMH)

(2008) stated that 6% of the U.S. population currently suffers from severe mental

illnesses (henceforth abbreviated as SMIs). Individuals who have been diagnosed with

SMIs such as schizophrenia and major depressive disorder must cope with the chronic

occurrence of symptoms and mixed recovery prognoses as well as endure an additional

"second illness": that is, the *stigma* attached to their disorder (Harrison & Gill, 2010;

Rüsch et al., 2005; Wright et al., 2000). Stigma, which will be extensively defined in the

next section, can be broadly defined as public cognitions (stereotypes), emotional

responses (prejudice), and behaviors (discrimination) that result in the rejection of an

individual based on characteristics that are perceived to be socially undesirable.

The stigma associated with SMIs reduces overall quality of life (Evans et

al.,2007; Fontenelle et al., 2010); limits access to societal opportunities such as stable

employment, safe housing, and proper medical treatment (Corrigan et al., 2001); lowers

self-esteem and self-efficacy (Blankertz, 2001; Link et al., 2001; Lundberg et al., 2009;

Moses, 2009a; Wright et al.,2000); facilitates and reinforces feelings of shame, isolation,

and loneliness (Wright et al., 2000); facilitates social rejection that hinders interpersonal

relationships and support networks (Andonian, 2010; Lloyd et al., 2005; Schön et al., 2009; Salokangas, 2001); and potentially exacerbates symptoms leading to increased risks for anxiety and suicide (Markowitz, 1998; Palmer et al., 2005; Siris, 2001).

According to the Surgeon General of the United States, stigma is the "most formidable obstacle to future progress in the arena of mental illness and mental health (Hinshaw, 2007)." National mental health organizations such as National Association on Mental Illness (NAMI) and NIMH, alongside social psychologists, have developed successful strategies to reduce SMI stigma through programs that educate the public by disconfirming the stereotype regarding the origin, symptoms, and treatment of SMIS and encourage positive contact with individuals with SMIs in order to reduce prejudice and discrimination. Although these strategies work well in addressing certain aspects of public stigma, to the author's knowledge they do not address how individuals with SMIs can change the stigma in their own interpersonal relationships. In the current study, we posit individuals may be able to proactively influence the stigma of their interaction partners by utilizing two psychosocial aspects of education and contact: stereotype disconfirming information and self-disclosure. Although effective individually, when combined these strategies may be highly effective at reducing the stereotype endorsement, prejudice, and the desire for social distance that people experience when interacting with a person who has been diagnosed with an SMI.

Stigma it is a multi-faceted construct that has been redefined over decades of research. According to Goffman (1963), *stigma* can be simply understood as a mark (i.e. a physical or behavioral condition) that is socially undesirable and excludes an individual from established normality. This mark subsumes the individual's personal identity, thus

transforming them from a whole and "normal" person to a deviant or "spoiled" person in the eyes of society. Goffman grouped potentially "spoiling" conditions into three main categories: Physical abominations of the body (e.g., blindness, eczema, obesity); blemishes of individual character (e.g., substance abuse, homelessness, mental illness, or a criminal record); and tribal stigmas (e.g. race, age, or gender). Jones et al. (1984) expanded upon these categories and proposed six elements that determine the level of stigma associated with a given condition: the *concealability* of the condition or how salient it is to others; The *course* of the condition's lifespan and whether is reversible or permanent; *the disruptiveness* of the condition or how it affects interpersonal relationships; the *aesthetics* of the condition or how appealing it is to the senses of others; the *origin* of the condition and whether it is deemed as the individual's responsibility or otherwise; and how the condition evokes feelings of *peril*, or danger, in others. Who and what is stigmatized differs depending on era, location, and established norms. However, bearing a stigmatic mark discredits an individual as a legitimate member of society and excludes them from full participation (Elliot, et al., 1982). Thus, stigma filters individuals from certain in-groups ("us" or "the public") into marginalized out-groups ("them" or "outsiders") (Link and Phalen, 2001).

On the surface, classic conceptualizations of stigma share commonalities with psychosocial theories of prejudice and stereotyping (Jones et al., 1984). Indeed, some social psychologists use the constructs interchangeably. However, the current theories of stigma promote a framework wherein stigma is described as a *process* that links an undesirable mark to negative social responses such as prejudice, stereotyping, and discrimination (Corrigan, 2000; 2007b; Link and Phalen, 2001; Rüsch et al., 2005; Sayce,

1998; Thornicroft et al., 2007). Although there are several models that explain stigma within different contexts (see Corrigan et al., 2005 for review), this study focuses on the process of stigma as it occurs within the mind of the *stigmatizing individual* and utilizes the Individual Cognitive Model of Mental Illness Stigmatization (henceforth abbreviated to ICMMIS) (See Table 1). According to Corrigan and colleagues (2000; 2007a; 2005) the ICMMIS describes stigma as the co-occurrence of four social psychological processes: *cues*, *stereotypes*, *prejudice*, and *discrimination*.

Table 1.

An individual cognitive model of mental illness stigma (ICMMIS) *

Cue: Markers that indicate mental illness such as:

Psychiatric symptoms (hallucinations, mood swings, etc.)
Social-skill deficits (anti-social behavior, inappropriate affect, poor interpersonal skills)
Physical appearance (lack of grooming and hygiene, dirty or improperly worn clothes)
Labels (e.g., 'schizophrenia', 'major depression', 'borderline personality disorder')

Leads to ↓

Stereotype: Negative beliefs about a mental illness such as:

Onset Controllability Pessimism ("Mental disorders are caused by a person's weak character rather than their biology.")
Competency Pessimism ("People with mental disorders cannot function in society independently.")
Dangerousness ("People with mental disorders are unpredictable and potentially dangerous.")
Treatability Pessimism ("Mental disorders cannot be medically treated or cured like physical illnesses.")

Leads to ↓

Prejudice: Agreement with mental illness stereotypes and/or negative emotional reaction to stereotypes such as:

Anger ("People with mental disorders are dangerous and untreatable! They should be all locked away in a nut house!")

Fear ("I'm afraid of people with mental disorders because they might physically hurt me.")

Leads to ↓

Discrimination: Behavioral responses to mental illness prejudice such as:

Denial of employment and/or housing opportunities

Denial of medical treatment or other forms of aid

Interpersonal rejection (co-workers, acquaintances, friends, romantic partners, family members, etc.)

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*Corrigan et al., 2000; 2001; 2004; Link and Phalen, 2001; Rüsch et al., 2005.

According to the ICMMIS, the first step in the stigma process requires a person to recognize four *cues* (similar to Goffman's "marks") that indicate an individual has a SMI: *psychiatric symptom display* (e.g. hallucinations, disorganized behavior, uncontrollable crying, etc.), *social-skill deficits* (e.g. anti-social behavior, blunt affect, apathy), *physical appearance* (specifically a chronically unkempt, unhealthy appearance), and *labels* (e.g. a diagnosis of a SMI such as 'schizophrenia' or 'major depressive disorder') (Penn & Martin, 1998; Schumacher et al., 2003). Although a bizarre physical appearance and certain social-skill deficits may indicate an otherwise healthy yet eccentric personality (Overton & Medina, 2008), SMI cues such as diagnostic labels (i.e. schizophrenia or major depressive disorder) provoke or reinforce *stereotypes* associated with SMIs that ultimately exacerbate the stigma process (Corrigan, 2007). For example, Martinez et al., (2011) found that individuals presented with a mental illness label (e.g. schizophrenia)

were perceived as less human, more dangerous, and more of a personal threat when compared to an individual with a physical illness label.

Once SMI cues are recognized an individual then has the opportunity to attribute *stereotypes* to these cues. Stereotypes are generalized cognitive systems that members of an in-group use to characterize members of an out-group (Coon, 1994; Lindgren, 1994; Olson & Zanna, 1993). Typically, mentally ill persons are negatively stereotyped to be responsible for the development and continuation of their illness (*Onset controllability pessimism*), unpredictable and potentially dangerous (*Dangerousness*), and incapable of living independently and functioning competently in a social environment (*Incompetency*) (Angermeyer et al., 2003; Corrigan, 2000; 2007a; 2002; Crisp et al., 2000; Hayward & Bright, 1997; Jorm & Oh, 2008; Martin, & Tuch, 2000; Monahan, 1992). Furthermore, the public tends to believe that individuals with mental illness suffer from disorders that are not adequately treatable and ultimately incurable (*Treatability Pessimism*) (Feldman & Crandall, 2007; Hayward & Bright, 1997). These stereotypes often differ in their application and severity between mental disorders (Feldman & Crandall, 2007). For example, individuals diagnosed with psychotic disorder labels (e.g. schizophrenia) are more likely to be perceived as dangerous than individuals with mild mood disorders (e.g. non-major depression) (Angermeyer & Matschinger, 2005; Markham, 2003; Pescosolido et al., 1999). Furthermore, the episodic reoccurrences of major depressive disorder are not often blamed on the complexities of the disorder itself but rather on the perceived weak personal character and inability of the diagnosed to "snap out of it" (Goldstein & Rosselli, 2003; Torrey, 1995; Wang and Lai, 2008). In the process of mental illness stigma, Thornicroft et al., (2007) claim stereotypes are

"problems of knowledge" or, in other words, stereotypes reinforce misinformation to the general public regarding the diagnosis of, treatment of, and behaviors associated with mental disorders which lead to conscious and unconscious *prejudice* (Corrigan, 2007b; Johnstone, 2001). These negative stereotypes are commonly distributed through channels of mass media, wherein fictional characters who are labeled "mentally ill" stand-out among others as social outcasts and are depicted as untrustworthy, unpredictable, and potentially homicidal (Wahl, 1995; 2003; Wilson et al., 2000).

Unlike stereotypes, *prejudice* is the negative emotional response toward a particular group based on the stereotypes associated with that group (Bergen, 2001; Overton & Medina, 2008). Emotional responses to people with SMIs are not necessarily negative and include feelings of *fear* ("People with mental disorders scare me."), *anger* ("People with mental disorders annoy me."), and *pity* ("I want to help people with mental disorders.") (Angermeyer & Matschinger, 1996; 2006; Angermeyer et al. 2010; Angermeyer and Matschinger, 2003; Brohan et al., 2010; Corrigan et al., 2007b; 2006; Krueger, 1996; Overton & Medina, 2008). People respond to individuals with SMIs with positive emotions (pity) primarily and anger and fear less frequently (Angermeyer and Matschinger, 2003; Angermeyer et al.,2010). However, individuals tend to react to conditions that are seen as onset-controllable, specifically mental-behavioral disorders, with anger and little pity (Weiner, Perry, and Magnuson, 1988) compared to those that are seen as onset-uncontrollable (i.e. physical conditions like heart disease, and blindness).

Certain aspects of an individual's background and personality may influence the type of emotional reactions evoked in response to interaction with a person with a SMI

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label. Familiarity, or *prior contact*, with a person with an SMI has been shown to decrease fear and an increase of positive emotions (Angermeyer et al.,2010). According to Thornicroft et al., (2007), emotional reactions such as fear, anger, and uncertainty indicate the prejudice component of mental illness stigma, and are "problems of attitude" which may lead to "problems of behavior", or *discrimination,* against individuals with mental disorders.

The final, and arguably the most harmful, step in the stigma process is the outcome of *discrimination,* or the actions taken by in-groups against stereotyped out-groups as a behavioral response to the emotions generated by prejudice (Corrigan 2007b). *Social distance,* as conceptualized by Bogardus (1925), involves any act, intentional or otherwise, which is based in the desire to avoid individuals associated with a stereotyped out-group. Actions taken to avoid individuals with mental disorders can range from refusing to sit next to such persons on a bus, to avoiding living in a neighborhood where such persons reside, to refusing to enter into romantic relationship with such persons. The justification for, as well as the breadth of this distance, often differs between stigmatized mental disorders. For example, SMIs that are considered high in perceived dangerousness and unpredictability illicit greater desire for social distance than non-severe mental illnesses (such as non-major depression) (Crandall & Feldman, 2007; Kasow & Weisskirch, 2010; Marie & Miles, 2008; Phelan & Basow, 2007; Read et al., 2006).

For an individual with a SMI, social distancing can occur either through *enacted* stigma: direct experiences of social rejection from interaction partners; or *felt stigma*: the feelings of shame associated with having a mental illness and the expectancy of experiencing stigma-related social distance and rejection from interaction partners

(Jacoby 1994; Scrambler & Hopkins 1990). Therefore, social distance can occur when one avoids mentally ill individuals due to stigmatizing attitudes or when a person with a mental illness avoids others due to the desire to avoid stigmatization and rejection (Wright et al., 2000). This distance succeeds in creating barriers between the general public and mentally ill persons that reduce opportunities for full societal participation (Crandall, 1994; Feldman & Crandall, 2007; Markham, 2003).

The Social Effects of Stigma

Stigma, according to the ICMMIS, can be understood as the outcome of a person's negative cognitions (*stereotypes*), emotional responses (*prejudice*), and behaviors (*discrimination*) toward people that they recognize as mentally ill (*cues*) (see Table 1). Ultimately, the negative effects of stigma manifest through discriminating acts against such people that are systemically and interpersonally debilitating. Social distancing, the primary form of discrimination against the mentally ill, creates barriers to self-sufficiency and social well-being such as gainful employment, secure, safe and affordable housing, proper treatment, self-efficacy, fulfilling relationships, and stable support networks.

Originally, the deinstitutionalization and re-integration of mentally ill persons from segregated institutions (e.g. asylums) into society was considered to be the most promising way of reducing stigma (Wright et al., 2000). However, acceptance and tolerance of mentally ill individuals remains generally low. Employers are reticent to engage in relations with and are hesitant to hire individuals who admit to seeking psychiatric treatment (Corrigan et al., 2001; Link, 1982) on the assumption that they will be absent often and exhibit potentially disruptive or violent behavior in the workplace

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(Green et al., 2003). Furthermore, Farina and Ring (1965) found that employees prefer to work alone rather than with co-workers with known mental disorders, and are more likely to blame such co-workers for any difficulties encountered during group tasks. In somewhat of a self-fulfilling prophecy, the stereotype that individuals with SMIs are less competent than the general public (e.g. they are unable to obtain or maintain a job) reduces the likelihood that landlords will rent to someone with a mental disorder (Penn et al., 1994). Indeed, a large portion of homeless populations in the U.S. suffer from mental illness and substance addictions (Substance Abuse and Mental Health Services Administration, 2003). Such individuals face potential stigma inside and outside of the medical system, limiting their access and adherence to treatment that hinders attempts at recovery.

Stigma-related factors are also thought to contribute to the failure of individuals with SMIs to obtain sought after treatment (Martin, 2000). For example, individuals who suffer from undiagnosed SMIs may avoid diagnosis and recommended treatments if they feel it may jeopardize their reputation, and thus, their employment or relationships. Furthermore, the fear of possible stigmatization may also limit access to social support networks which are important, if not crucial, for treatment adherence and recovery (Andonian, 2010; Ertugrul & Ulug, 2004; Hendryx et al., 2009). Ironically, the medical professionals who have been trained specifically to diagnose and treat individuals with mental disorders (psychiatrists, clinical psychologists, nurses, social workers, etc.) may also adopt stereotypical thinking regarding the dangerousness of mental disorders, which may lead to the avoidance of their patients, the improper treatment of their patients, or coercive action that force such persons into unnecessary treatment or hospitalization

(Corrigan et al., 2005; Rao et al., 2009; Schulze, 2007). Regarding the costs of mental health services in the United States in particular, the financial strain of unemployment (an aforementioned consequence of stigma) and lack of insurance may also lead to problems accessing and adhering to treatment (Druss et al., 1998; Overton & Medina, 2008).

For individuals with SMIs, however, developing and maintaining successful, healthy interpersonal relationships is a "persistent challenge" (Wright et al., 2007) that is further strained by prejudice and discrimination (Harris et al., 1992). Indeed, poor social functioning and relationship disruption is considered a "hallmark" of SMIs and is often deterring to primary and secondary others (Day et al., 2007). Despite this, people with SMIs consider such relationships to be crucial for their own wellbeing (Redmond et al., 2010). There is also suggestion that the stereotype threat of social incompetency associated with SMIs may exacerbate poor social functioning (Henry, von Hippel, & Shapiro, 2010).

Strategies to Reduce Stigma

Approaches that aim to reduce an individual's stereotype endorsement, prejudice and discrimination against individuals with SMIs involve protest, education, and positive contact with mentally ill individuals (Corrigan et al., 2001; 2005). *Protest* is the active suppression of negative stereotypes, held by members of the general public, regarding individuals with SMIs by mental health advocates (e.g., "You should be ashamed that you think all people with mental illness are dangerous!"). Unfortunately, protest may result in defiance (e.g. "You can't tell me what to think!") and the strengthening of

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stigmatizing attitudes (Corrigan et al., 2001). For this reason, we focus on education and contact as potentially successful methods for reducing stigma.

Prejudiced and discriminatory reactions to persons with mental illnesses may result from the endorsement of stereotypes that stem from the public's overall lack of knowledge and understanding of SMIs (Corrigan, 2005; Jorm, 2000; Thornicroft et al., 2007). A common strategy for stigma reduction is public *education*. Social psychologists and organizations such as the National Institute for Mental Health (NIMH) and the National Alliance for the Mentally Ill (NAMI) attempt to reduce stigmatizing attitudes and behaviors through education programs, or programs that inform the public about SMIs by disconfirming stereotypes about the origin, symptoms, and treatment of SMIs.

Stereotypes "not only function to efficiently predict future interactions, but also represent whether it is useful to approach or to avoid social category member (Forster et al., 2000)." As complex cognitive systems, stereotypes prove difficult to change, however, the *conversion model of stereotype change* (Rothbart, 1981) states that stereotypes can be instantly altered if the stereotype endorser is presented with convincing stereotype disconfirming information about a target group. This information causes the endorser to revise their belief systems about the target group. However, disconfirming stereotypes about a single group has been known to lead to what is known as *subtyping*, or when a member is differentiated from their once stereotyped group (i.e. "I think people with mental disorders are dangerous, but you're not like them, you're *different*") (Wyer and Srull, 1994; Wyer et al.,2002). Generally, when subtyping occurs stereotype change may have succeeded for the individual but not for the overall target group, therefore, *overall* stereotypes about an out-group remain intact. If a person has the

goal of mitigating interpersonal social rejection, this subtyping phenomenon may be a welcome outcome.

The use of stereotype disconfirming information regarding individuals with SMIs has differed in effectiveness against stigma depending on the type of information presented. For example, when first informed about the negative stereotypes (dangerousness, unpredictable, treatability, etc.) and then presented accurate information regarding SMIs, individuals who participated in a study by Corrigan and colleagues were less likely to perceive a fictional person with schizophrenia as dangerous. The participants were also less likely hold social distancing attitudes toward this character compared those who were informed about the links between SMIs and violence or a control group (Corrigan et al., 2007a). In a similar study, individuals who displayed low pre-test knowledge of the diagnosis, symptoms, and prognosis of major depressive disorder and a high pre-test desire for social distance from individuals with the disorder displayed a substantial increase in knowledge and decrease in the desire for social distance after they participated in a web-based educational program (Finkelstein & Lapshin, 2007).

Conversely, in a study conducted by Penn and colleagues, students who were informed about stereotype congruent information (psychotic symptoms associated with schizophrenia) displayed an increase in stigmatizing attitudes toward individuals with the disorder while students educated about post-treatment, supervised living situations for stereotype incongruent individuals with schizophrenia displayed a reduction in stigmatizing attitudes (Penn et al., 1994). Similarly, Corrigan and colleagues (2006) found that informing students about the stereotypes and prejudice regarding SMIs

changed perceptions of the responsibility of mental illness only, but not perceptions of dangerousness, feelings of fear, pity, anger, or the desire for social distance. Therefore although some educational programs have shown some promise for reducing stereotype endorsement, prejudice, and discrimination, according to Couture and Penn (2003), the stereotype disconfirming information provided through education alone is primarily effective in changing stigmatizing cognition (i.e. stereotyping) and least effective on subsequent prejudice and discriminatory behaviors (i.e. social distancing).

Contact is the most widely suggested psychosocial technique for reducing prejudice and discrimination toward stigmatized out-groups (Olson & Zanna, 1993). Indeed, people who have had prior contact with individuals with SMIs (typically people in the medical field, social work, or with familial connections) tend to display positive attitudes toward these individuals, (Alexander & Link, 2003; Eack & Newhill, 2008). Furthermore, members of in-groups who rank high in perspective-taking ability and empathetic concern, the ability of an individual to adopt the mental and emotional point of view of others and to (Davis, 1980), have displayed lower stereotype endorsement after communicating with member of a stereotyped out-group (Vescio et al.,2003).

In a positive contact scenario, people who interact with an individual with a SMI will encounter stereotype disconfirming information which should result in positive attitudes toward the individual (Couture & Penn, 2003). Programs that encourage positive contact, such as a brief interaction or even a developing friendship with persons with SMIs, have been shown to reduce negative attitudes and desire for social distance towards these persons in general (Couture & Penn, 2003; 2006). Furthermore, these programs have been found to be more effective in changing prejudice and discriminatory

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behaviors toward persons with SMIs than stereotype disconfirming information alone (Corrigan et al., 2006; 2010; Reinke et al., 2004).

An emerging approach to stigma-reduction through one-on-one contact is strategic *self-disclosure*, the gradual revelation of personal information that was once hidden, unknown, and unexpected. Self-disclosure can also be considered an effective social strategy for influencing the impressions and attitudes of others (Berg & Archer, 1982). The disclosure of guarded information indicates a level of intimacy and trust and may be construed as a desire for friendship rather than antipathy by the recipient (Steel, 1991; Lynn 1978). The receipt of this information through often leads to positive feelings toward and increased liking of the discloser (Collins & Miller, 1994). Furthermore, self-disclosure is considered a natural, prosocial behavior and the lack thereof may illicit negative reactions from interaction partners (Papsdorf & Alden, 1998). More importantly, the disclosure of an out-group status to a member of an in-group has been found to reduce the in-group biases that normally hinder relations with out-group members (Ensari & Miller, 2002). Thus, although limitedly explored in the context of SMI stigma, self-disclosure may be a powerful method for altering stigmatizing attitudes and behaviors toward persons with SMIs.

The decision to disclose the diagnosis of a SMI may result in beneficial or detrimental consequences. For example, disclosing a SMI may relieve stress and allow for individuals to request accommodations that may be otherwise overlooked or turned down by others (Roberts et al., 1995). However, simply revealing that one has a mental illness may lead to the unintentional evocation of SMI cues through *self-labeling* (i.e. the adoption of and identification with terms such as "schizophrenic") (Moses, 2009b). For

instance, Mowbray et al. (2002) found that college students who disclosed a mental

illness label to their peers were socially ostracized, belittled, pitied, or considered socially

inept. In two similar studies, individuals who disclosed a mental disorder to their

employers felt as though they were being treated unfairly compared to their co-workers

(e.g. given more work or unjustifiably terminated) and experienced increased levels of

stress afterwards (Goldberg, Killeen, & O'Day, 2005; Rollins, et al., 2002;). Furthermore,

once an individual has adopted a diagnosis as a self-label they may be susceptible to

adopting the negative stereotypes associated with that label (e.g., social ineptitude, self-

blame for the onset and trajectory of the illness, etc.). This process, termed *self-stigma,*

(Corrigan et al., 2006; 2010; Link et al., 1991) becomes "a social force in and of itself

that diminishes mental patient's motivation and abilities to make it in mainstream society

(Wright et al., 2001)" and often leads to depression, lowered self-esteem, isolation, and

reluctance to seek treatment.

Conversely, choosing not to disclose a mental disorder (non-disclosure) can be

similarly detrimental. A person with a mental illness may decide it is easier to "stay in the

closet" in order to hide their stigmatizing condition (Corrigan, 2004a; Corrigan et al.,

2010). This decision may in turn cause the individual to adopt dysfunctional means of

avoiding the stress of direct stigma or self-stigma by withdrawing into secrecy and by

avoiding the "institutions that mark them (Corrigan et al., 2010)." In other words, by

hiding a mental disorder a person may not seek out others who they believe will

stigmatize them or they will avoid much needed treatment as they attempt to avoid the

stigma associated with seeking mental health care. These strategies often have negative

impact on the person's employment, social support networks, intimate relationships, and

the course of recovery (Ertugrul & Ulug, 2004; Kleim et al., 2008).

According to Tröster (1997) the disclosure of a mental illness "depends on the perceived risk that the interaction partner may find out about the disease and on the anticipated social consequences of disclosure." A person may choose to disclose their disorder if they believe that it will result in understanding, increased knowledge of their disorder, and certainty. Conversely, a person may choose to conceal their disorder if they believe it will result in stigmatization, rejection, pity, unwanted assistance, or uncertainty in their interaction partner (Tröster, 1997). Concurrently, discussing unpleasant details of a mental disorder (such as unpleasant symptomatic episodes, unusual personal experiences, or disturbing aspects of treatment) may provoke negative reactions from conversational partners that may facilitate feelings of rejection after disclosure (Nisenson et al., 2001). Bos et al., (2009) suggest that individuals should opt to *selectively disclose* mental disorders to close others (i.e. family members, intimate partners) instead of acquaintances and colleagues as they are likely to experience less social rejection and receive more social support. However, they leaven this suggestion by stating that "selective disclosure implies that people still have to conceal their stigma in certain situations, which may induce stress."

Self-disclosure has been tested primarily to reduce stigma-related social rejection across various chronic physical and non-severe mental disorders yielding primarily positive results. For example, rejecting attitudes toward diabetes, cystic fibrosis, attention deficit/hyperactivity disorder (ADHD) and Tourette's syndrome (Berlin et al., 2002; 2005; Jastrowski et al., 2007; Marcks et al, 2007) were minimized through self-disclosure when compared to non-disclosure. However, in the case of the hair-pulling disorder

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trichotillomania, disclosure of the disorder resulted in greater social rejecting attitudes than non-disclosure (Marcks et al., 2005) possibly due to the physical markers associated with the disorder (i.e. random, visible bald spots on the scalp). Marcks et al (2005) suggest that when dealing with severe behavioral or mental disorders, which exhibit serious psychiatric cues, self-disclosure may benefit from an additional *educational* component rather than relying on disclosure alone.

When to disclose the diagnosis of a SMI within a developing relationship is also particularly challenging for individuals with such disorders. As mentioned in the disclosure section, self-disclosure can be considered a unique social strategy for managing the impressions and attitudes of others (Berg & Archer, 1982). Although disclosure of a stigmatizing label may be powerful for changing negative attitudes and behaviors, the timing (or order) of this disclosure in relation to the disclosure of other information may also exacerbate these negative attitudes (Golebiowska, 2003).

Research regarding impression formation has shown that the order in which information about an individual is presented often determines the overall attitudes regarding that individual (Luchins & Luchins, 1984; Steininger & Eisenberg, 1976). Information that is revealed first tends to dominate overall impressions through primacy effects (Asch, 1946; Crano, 1977; Dennis and Ahn, 2001; Fiske and Neuberg, 1990; Jones, 1990), or a person's "tendency to judge a social target predominantly on the basis of early information and to remain relatively unpersuaded by later information (Richter, & Kruglanski, 1998)." If negative information about a person (e.g. he is lazy) is presented before positive information (e.g. he is intelligent) people tend to associate that person with the negative information (in this case, laziness). It may be the case that if the

disclosure of a SMI diagnosis evokes a negative cue (i.e. the label of "schizophrenia" or "major depressive disorder") early on in the relationship before other, positive information is received the former information will most likely continue to negatively shape the recipient's attitudes (stereotyping and prejudice) and actions (social distancing) throughout the relationship. Therefore an individual with a SMI may want to *delay* the disclosure of their disorder until they provide their partners with positive, stereotype disconfirming information.

Study Overview and Hypotheses

The purpose of this study is to investigate the single and combined effects of two stigma reducing strategies (stereotype disconfirming information and disclosure) on an individual's cognitive stigma (the process of stereotyping, prejudice, and discrimination as conceptualized in the ICMMIS) toward a person with an SMI label (schizophrenia and major depressive disorder). Drawing from stigma, impression formation, and stereotyping research, we propose that individuals with SMIs may be able to proactively influence the reactions of their interaction partners by first providing information that disconfirms stereotypes regarding the (a) *Onset Controllability Pessmism*, (b) *Dangerousness*, (c) *Incompetency*, and (d) *Treatability Pessimism* associated with an SMI before disclosing a diagnosis of a SMI. Although it is expected that stereotype disconfirming information and self-disclosure alone will provide some positive benefits, we predict that only stereotype disconfirming information and self-disclosure combined will have a maximal effect in reducing stereotype endorsement, prejudice, and the desire for social distance.

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H1: Empathetic Concern will inversely predict negative stereotype endorsement, Emotional Reactions, and social tolerance. Specifically, participants who rank high in empathetic concern will report less Onset Controllability Pessimism (H1a), Recovery Pessimism (H1b), Violent stereotype endorsement (H1c), Unpredictable stereotype endorsement (H1d), less Fear (H1e) and Anger (H1f), more pity (H1g), and a lesser desire for social distance (H1h).

H2: Prior Contact will inversely predict negative stereotype endorsement, Emotional Reactions, and social tolerance. Specifically, participants who rank high in Prior Contact will report less Onset Controllability Pessimism (H2a), Recovery Pessimism (H2b), Violent stereotype endorsement (H2c), Unpredictable stereotype endorsement (H2d), less Fear (H2e) and Anger (H2f), more pity (H2g), and a lesser desire for social distance (H1h).

H3: Stereotype Disconfirming Information (SDI) will provide a strong reduction in Onset Controllability Pessimism (H3a), Recovery Pessimism (H3b), Violent stereotype endorsement (H3c) and Unpredictable stereotype endorsement (H3d) when compared to the Control group and the Disclosure. This treatment will also provide a low to moderate reduction in Anger (H3e) and Fear (H3f), a low increase in pity (H3g) and a low to moderate reduction in the desire for Social Distance (H3h) when compared to the control group and the Disclosure only.

H4: Disclosure only (Disc) will provide a low to moderate reduction in Onset

Controllability Pessimism (H4a), Recovery Pessimism (H4b), Violent stereotype

endorsement (H4c) and Unpredictable stereotype endorsement (H4d) when compared to

the Control group and the Stereotype Disconfirming Information. This treatment will also

provide a strong reduction in Anger (H3e) and Fear (H3f), a strong increase in Pity (H3g)

and a moderate reduction in the desire for Social Distance (H3h) when compared to the

Control group and the Stereotype Disconfirming Information group.

H5: Stereotype Disconfirming Information and Disclosure combined (SDI+Disc) will

produce a strong reduction in Onset Controllability Pessimism (H5a), Recovery

Pessimism (H5b), Violent stereotype endorsement (H5c) and Unpredictable stereotype

endorsement (H5d) when compared to the Control group, Stereotype Disconfirming

Information group, and the Disclosure group. This treatment will also provide a strong

reduction in Anger (H5e) and Fear (H5f), a strong increase in Pity (H5g) and a moderate

reduction in the desire for Social Distance (H5h) when compared to the Control group,

Stereotype Disconfirming Information group, and the Disclosure group.

H6: There will be no difference in the effects hypothesized for Onset Controllability

Pessimism (H6a), Recovery Pessimism (H6b), Violent Stereotype Endorsement (H6c),

Unpredictable stereotype endorsement (H6d), Fear (H6e), Anger (H6f), Pity (H6g), and

social distance (H6h) between Schizophrenia and Depression.

CHAPTER II:

METHOD

Participants and Procedure

Ethical approval was obtained through the University of Louisville's IRB

(Approval # 11.0279) and participants were asked to provide informed consent by

signing the University of Louisville Informed Consent Form before beginning the

experiment. Participants were offered extra credit in their respective course as an

incentive for participating.

40 participants were non-randomly assigned to the combined conditions during a

pilot study that tested the manipulation strength and scale reliabilities. To reduce the

possibility of sampling error these participants were replaced in the final analyses.

A convenience sample of 240 undergraduate and graduate students over the age of

18 were recruited from various communication and psychology courses and asked to

participate in an experiment about "impression formation". Participants who qualified

were then randomly assigned to one of the 6 experimental groups (R) or the Control

group. Before they were given the experimental stimulus, participants were be asked a

series of questions regarding demographic (age, gender, race, college status, employment

status, and prior contact) and personality information (empathetic concern). Next, the

participants were asked to complete a pre-test (O1) questionnaire that measured the

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dependent variables (stereotype endorsement, emotional responses, and social distance).

After completing the pre-test, participants were instructed to read the experimental

stimulus in the form of a narrative with 1 or 2 scenarios containing the independent

variables (X_1, X_2, X_3, X_1X_2, or X_3X_4). These scenarios described a life-like encounter

with a fictional, androgynous person named Pat who is recovering from either

Schizophrenia or Depression or is experiencing common stress (Control) (see Appendix

A). Once they had read the scenario, participants were asked to take time to reflect on the

scenario and write a few sentences about their feelings toward Pat before moving on.

After finishing their reflective task, the participants were instructed to complete a post-

test questionnaire measuring the three dependent variables (stereotype endorsement,

emotional responses, and social distance). Participants who were assigned to the Control

group completed the pre-test and post-test items regarding both schizophrenia and major

depression. The manipulation checks were measured only after the experimental or

Control scenario had been given.

Independent Variables

Each participant received a booklet containing a narrative composed of a vignette

displaying one of 6 possible combinations of experimental stimuli or a control stimuli: 1.

Schizophrenia Stereotype Disconfirming Information; 2. Schizophrenia Disclosure; 3.

Schizophrenia Stereotype Disconfirming Information and Schizophrenia Disclosure; 4.

Depression Stereotype Disconfirming Information; 5. Depression Disclosure; 6.

Depression Stereotype Disconfirming Information and Depression Disclosure; 7. Control.

For experimental groups 1, 2, 4 and 5 only one experimental stimulus was observed, while experimental groups 3 and 6 observed the combined effects of the two stimuli. Group 7 was a control group.

Stereotype Endorsement

According to the individual cognitive model of mental illness stigma (Corrigan et al., 2000; 2001; 2004; Link and Phalen, 2001; Rüsch et al., 2005.), negative stereotype endorsement may lead to prejudiced attitudes and ultimately to discriminatory behaviors. Negative stereotype endorsement regarding the *Onset Controllability Pessimism, Treatability Pessimism, Incompetency*, and *Dangerousness* associated with schizophrenia and major depressive disorder was measured using an 8-item Stereotype Endorsement Scale derived from two reviews on mental illness stigma by Hayward and Bright (1997) and Overton and Medina (2008). Participants will be asked to indicate their level of agreement with each item from 1= strongly disagree to 7=strongly agree.

Emotional Reactions

Interacting with individuals with SMIs may evoke certain positive and negative emotional reactions. Prejudiced reactions include *anger and fear* while the most common positive emotion is *pity* (Angermeyer & Matschinger, 1996; 2004; 2006; Angermeyer et al. 2010; Brohan et al., 2010; Corrigan et al., 2004; 2006; Day et al., 2007; Krueger, 1996; Overton & Medina, 2008). For this study, emotional reactions to schizophrenia and major depressive disorder were measured using a 10-item scale derived from Angermeyer & Matschinger's (2003) Emotional Reactions to the Mentally Ill Scale

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(ERMIS). Participants were be asked to indicate their level of agreement with each item from 1= strongly disagree to 7=strongly agree.

Social Distance

Social Distance was measured using a 10-item scale derived from the original Bogardus Social Distance Scale (1924) and Coyne's (1976) Desire for Future Interaction Scale. For the pre-test, participants were asked to rate their level of agreement with items such as "I would take advice from a person who has schizophrenia." to "I would consider a long term romantic relationship with a person who has schizophrenia." In the post-test, these items will be reworded to include Pat with items such as "I would take advice from a person who has schizophrenia like Pat." 3 items were discarded from the original Bogardus Social Distance Scale ("citizens in my country," "visitors in my country," and "excluded from my country") as these items address social intolerance for a person of international status. Participants will be asked to indicate their level of agreement with each item from 1= strongly agree to 7= strongly disagree.

Empathetic Concern

An individual's ability to feel empathetic concern for others will be measured using a 7-item sub-scale derived from Davis' (1980) Interpersonal Reactivity Index. Participants will be asked to rate their level of agreement with items such as "When I see someone being taken advantage of, I feel kind of protective towards them" and "I often have tender, concerned feelings for people less fortunate than me." Participants will be

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asked to indicate their level of agreement with each item from 1= strongly disagree to 7=strongly agree.

Prior Contact

Prior contact with people who have a SMI (schizophrenia or major depressive disorder) will be measured using the 11-item Level of Contact Report (Holmes et al., 1999). Each item on the scale varies in level of intimacy with persons with severe mental illnesses and each item is weighted. Items range from "I have never interacted with a person that I was aware had a severe mental illness" which is weighted as 1, to "I have a severe mental illness" which is weighted as 11. Participants will be asked to select all statements that apply to them, however, as in the original scale (Holmes et al., 1999) the participant's final score will be the same as the weighted score of the most intimate situation selected. Thus, if the participant selects "I live with a person who has a severe mental illness." (10), "I have watched a documentary on the television about a person with a severe mental illness." (4), and "My job involves providing services/treatment for persons with a severe mental illness" (7), their final score will be 10 as living with an individual with a SMI is the most intimate situation of the three selected.

Data Analysis

The analyses in this study were conducted using SPSS statistics software package ver. 19. Five sets of analyses were conducted for descriptive, data reduction, and hypothesis testing purposes. In the first set of analyses, the study's participants are described based upon age, gender, ethnicity, college status, employment status, average

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Empathetic Concern score, and Prior Contact. Next, the scales used to measure the two

personality variables and eight dependent variables were validated and factor analysis

was conducted to reduce the questionnaire items into unique variables for further

analyses. The third set of analyses addressed hypotheses 1 and 2 by testing the predictive

effects of Empathetic Concern and Prior Contact on Stereotype Endorsement, Emotional

Reaction, and Social Distance. The fourth set of analyses tested group equivalence on

pre-test scores across the 4 information conditions and 2 mental disorder groups. The

final set of analyses tested Hypotheses 3-6 by comparing group differences on Onset

Controllability, Recovery Pessimism, Violent stereotype endorsement, Unpredictable

stereotype endorsement, Fear, Anger, Pity, and Social Distance pretest and posttest scores

across the information and disorder conditions.

CHAPTER III:

RESULTS

Participants

Participants' (N= 240) ages ranged between 18-19 (40%), 20-21 (33.3%), and 22-29 (22.9%) with a small percent ranging between ages 30-49 (3.3%). Sixty two percent of the participants were female and 37.9% were male. The majority were Caucasian in race and ethnicity (73.3%), followed by African American (14.2%), Latino or Hispanic (7.5%), and a smaller amount of participants were from other ethnic groups (5%). Regarding college status, participants were primarily freshmen (27.9%) and juniors (26.7%), followed by seniors (21.7%) and sophomores (20.4%), with a small amount of graduate and other standings (2.5%). Participants were mainly unemployed at the time of the study (60.8%).

Out of a possible score of 49, participants ranked high in empathetic concern (M= 38.40 SD= 6.89), with females (M= 39.62, SD= 6.21) reporting higher levels of trait empathy than males (M= 36.38, SD= 7.71), $F(1, 238) = 12.70$ p <.001. For Prior Contact, there was a significant difference between Schizophrenia (M= 4.02, SD= 2.13) and Depression (M= 7.03 SD= 2.70), $F(1, 238) = 92.31$, p <.001. Specifically, the participants' average Prior Contact experience for Schizophrenia involved a documentary or a television show involving a character with schizophrenia. For Depression, the

participants' average contact experience involved having a coworker with major depression. Thus, the participants were more likely to have had closer contact with a person who has been diagnosed with major depression.

Factor Analyses

Before the factor analyses were conducted, bivariate correlations were run between items in the 7 item Empathetic Concern scale, the 8 item Stereotype Endorsement scale, the 10-item Emotional Reactions scale, and the 9- item Social Distance scale, respectively. All the items correlated significantly (and above the .30 level) with at least one other item in their respective scale, suggesting reasonable factorability. Table 2 and Table 3 display the factor loadings for the Stereotype Endorsement and Emotional Reactions scale.

As Empathetic Concern is a subscale of Davis' (1980) Interpersonal Reactivity Index (IRI) the items were expected to load on one factor. A principle-components factor analysis, with Varimax rotation, of the 7-item Empathetic Concern scale was conducted with only one factor explaining 57% of the variance. The first factor had an initial eigenvalue of 4.04, while a second factor had an eigenvalue below one (.71), explaining 10% or less of the total variance. Composite scores were created by summing the total of the items within one factor and Davis' label "Empathetic Concern" ($\alpha = .87$) was retained. High scores represent the tendency of an individual to exhibit high empathy toward an individual with an SMI.

Stereotype Endorsement was expected to load on 4 factors: Treatability Pessimism, Incompetence, Dangerousness, and Onset Controllability Pessimism. A

principle-components factor analysis, with Varimax rotation, of the 8 item Stereotype

Endorsement scale was conducted using pretest scores with only three factors explaining

69% of the variance (Table 3). The first, second, and third factor had initial eigenvalues

of 3.05, 1.43, and 1.06 respectively. The fourth factor had an eigenvalue under one (.76),

explaining roughly 9% of the total variance. Although Treatability and Incompetence

were expected to load on two separate, orthogonal factors, the items loaded on one factor.

A person's ability to adhere to psychiatric treatment (i.e. medication and therapy) and to

live independently are crucial aspects of recovery. A recent U.S. mental health report

(U.S. Department of Health and Human Services [USDHHS] 2003) states that recovery is

"the process in which people are able to live, work, learn, and participate fully in their

communities. For some individuals, recovery is the ability to live a productive life despite

a disability. For others, recovery implies the reduction or complete remission of

symptoms" thus the first factor was relabeled Recovery Pessimism (pretest α = .82,

posttest α = .88). Individuals who endorse this stereotype assume that individuals with a

SMI will not likely recover from their illness. The second and third factors were relabeled

Dangerousness (pretest α = .33, posttest α = .73)[1] and Onset Controllability Pessimism

(α = .78, posttest α = .84). The Dangerousness factor was excluded from further analyses

due to unacceptable reliability on the pretest scores, however, the individual items for

Violent ("I believe all people who have schizophrenia or major depression are violent.")

and Unpredictable ("I believe people who have schizophrenia or major depression are

unpredictable.") are theoretically interesting and were used in further analyses as single

items. The posttest scores displayed comparable factors. Composite scores were created

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[1] In hindsight, the Violent and Unpredictable stereotypes should have been measured as separate constructs. Violent and Unpredictable results should be interpreted with caution.

by summing the total of the items within the factor and creating a new variable for each

using a compute statement. High scores represent the tendency to endorse negative

stereotypes that label a person with a SMI as responsible for the onset of their illness,

unable to recover from their illness, violent, and unpredictable.

Table 3.

Factor Loadings for Stereotype Endorsement

Item	RP	OCP	D
1. I believe there are no effective medications that can help people who have schizophrenia or major depression.	.84		
2. I believe there are no effective treatments that can help people who have schizophrenia or major depression.	.84		
3. I believe people who have schizophrenia or major depression cannot take care of themselves.	.81		
4. I believe people who have schizophrenia or major depression can never live independently	.66		
5. I believe people who have schizophrenia or major depression are responsible for the cause of their illness.		.89	
6. If someone has schizophrenia or major depression it is his/her own fault.		.89	
7. I believe people who have schizophrenia or major depression are unpredictable.			.89
8. I believe all people who have schizophrenia or major depression are violent.	.36		.58

Note. RP = Recovery Pessimism; OCP = Onset Controllability Pessimism; D = Dangerousness. Coefficients of .20 or below are not shown.

Participants received items that referred only to depression or only to schizophrenia.

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The Emotional Reactions scale, previously validated by Angermeyer and

Matschinger (2003), was theorized to load on three orthogonal factors: Fear, Anger, and

Pity. A principle-components factor analysis, with Varimax rotation, of the 10 item

Emotional Reactions scale was conducted, with three factors explaining 66% of the

variance (Table 4). The first factor, second, and third factor had initial eigenvalues of

3.07, 2.27, and 1.36, respectively. The fourth factor had an eigenvalue just under one

(.91), explaining only 9% of the variance. The three factors extracted were consistent

with Angermeyer and Matschinger (2003)'s factor labels and were retained. The posttest

scores displayed comparable factors. Composite scores were created by summing the

total of the items within each factor and were labeled Fear (pretest α = .82, posttest α =

.77), Anger (pretest α = .68, posttest α = .66)[2], and Pity (pretest α = .80, posttest α = .79)

using a compute statement. According to Angermeyer and Matschinger (2003), high

scores represent the tendency of an individual to react with Fear, Anger, and Pity,

respectively.

Table 3.

Factor Loadings for Emotional Reactions

Item	Fear	Anger	Pity
1. If I met someone who has schizophrenia or major depression			
I would worry that they might harm me physically	.83		
2. If I met someone who has schizophrenia or major depression			
I would be afraid of them.	.82		

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[2] Anger has modest reliability on pretest and posttest scores, so further analyses should be interpreted with caution.

3. If I met someone who has schizophrenia I would feel unsure

about what to say or do.   .78

4. If I met someone who has schizophrenia or major depression

I would feel uncomfortable around them.   .76

5. If I met someone who has schizophrenia or major

depression I would want to help them.*   .80

6. If I met someone who has schizophrenia or major depression

I would sympathize with them.*   .80

7. If I met someone with schizophrenia or major depression I

would feel sorry for them.*   .80

8. If I met someone who has schizophrenia or major depression

I would feel compassion for them.*   .76

9. If I met someone who has schizophrenia or major depression

I would feel angry with them.   .88

10. If I met someone who has schizophrenia or major

depression I would feel annoyed by them.   .21   .83

Note. * Indicates items that were reversed scored. Coefficients were suppressed at the .20 level. Participants received items that referred only to Depression or only to Schizophrenia.

Social Distance was expected to load on one factor. A principle-components factor analysis, with Varimax rotation, of the 9-item Social Distance scale, was conducted using pretest scores with only one factor explaining 59% of the variance. The first factor had an initial eigenvalue of 5.40 while a second factor had an eigenvalue value below one (.96), explaining roughly 10%. The posttest scores displayed comparable factors. Composite scores were created by summing the total of the items within one factor and creating the variable Social Distance (pretest α = .91, posttest α = .94). High scores represent the tendency of an individual to exhibit low social inclusion or, in other words, the desire for social distance toward an individual with an SMI.

Group Equivalence on Pretest Scores

A 2 (Depression vs. Schizophrenia) x4 (Information Condition) ANOVA was conducted to ensure that the conditions were equivalent in pre-test scores based on Stereotype Endorsement, Emotional Reactions, and Social Distance. No significant differences were found between the information conditions in terms of Empathy, $F(3, 236) = .23$, p= .63, Prior Contact, $F(3, 236) = 1.04$, p= .38, Onset Controllability Pessimism pretest scores, $F(3, 236) = .33$, p= .80, Recovery Pessimism pretest scores, $F(3, 236) = .23$, p= .87, Violent pretest scores, $F(3, 236) = .40$, p= .75, Unpredictable pretest scores, $F(3, 236) = .39$, p= .76, Fear pretest scores, $F(3, 236) = .98$, p= .40, Pity pretest scores $F(3, 236) = .03$, p= .99, and Social Distance pretest scores $F(3, 236) = .73$, p= .53.

A significant difference was found between the Schizophrenia (M= 14.90, SD= 5.31) and Depression (M= 11.63, SD= 4.19) conditions in terms of Fear pretest scores, $F(3, 238) = 28.13$, p <.001. Furthermore, there was a significant difference in the pretest scores for the Schizophrenia (M= 42.97, SD= 9.86) and Depression (M= 40.40, SD= 9.63) conditions on Social Distance $F(1, 238) = 4.16$, p <.05. Thus, participants reported higher pretest levels of Fear and the desire for Social Distance toward individuals with Schizophrenia than individuals with Depression, which is consistent with the findings in previous research (Angermeyer & Schulze, 2001; Corrigan et al., 2002; Link et al., 1999). There was a marginal difference in pretest Anger between the Information conditions, $F(3, 236) = 2.12$, p= .10; simple contrasts revealed that there was a significant difference between the Stereotype Disconfirming Information group (M=

4.70, SD= 2.69 p <.05) and the Control group (M= 5.78, SD= 2.65 p <.05) and between

the Stereotype Disconfirming Information group (M= 4.70, SD= 2.69 p <.05) and the

combined group (M= 5.7, SD= 2.57 p <.05). Furthermore the difference between

Schizophrenia (M= 4.05, SD= 2.71) and Depression (M= 4.80, SD= 3.34) on the pretest

Onset Controllability variable, $F(1, 238) = 3.36$, p= .06 also was marginal, indicating a

trend for major depression to be seen as more controllable. Therefore, pretest scores for

all DVs were included as a covariate in the final model.

A MANOVA was conducted with gender, race, and age entered as the three IVs

and Onset Controllability Pessimism, Recovery Pessimism, Violent stereotype

endorsement, Unpredictable stereotype endorsement, Fear, Anger, Pity, and Social

Distance entered as the DVs (See Appendix F). Out of 24 possible effects, only one was

statistically significant: Race had a significant impact on Fear such that Asian participants

(N=7, M= 16.86, SD= 3.89) reported the highest level of fear and African American

participants reported the lowest level of fear (N=34, M= 11.17, SD= 4.06). There also

were six marginal effects: Gender had a marginal impact on pretest Onset Controllability,

and Age category had a marginal impact on Recovery Pessimism, Violent stereotype

endorsement, Unpredictable stereotype endorsement, Fear, and Pity. In light of these

scattered and small effects, demographics will be disregarded for the remainder of the

analyses

Manipulation Checks

In order to assess the effectiveness of the Stereotype Disconfirming Information,

Disclosure, and the Combined manipulations, participants were given 2 multiple choice

questions. The first question asked whether the character (Pat) in the scenario provided the participant with objective information regarding (a) anxiety disorders, (b) major depression, (c) schizophrenia or (d) None of the above. The second question asked whether Pat disclosed that he/she had an (a) anxiety disorder, (b) major depression, (c)schizophrenia, or (d) none of the above.

When asked what disorder information the character in the scenario (Pat) provided, 80% of the participants in the Control group (N=60) correctly reported receiving objective information about none of the disorders listed, 10% reported anxiety information, 3% reported Schizophrenia information, and 0% reported major depression information. When asked what disorder Pat disclosed, 85% correctly perceived no disclosure, and 15% reported a disclosure of anxiety.

Confirming a successful manipulation of Schizophrenia Stereotype Disconfirming Information , 100% of the participants (N=30) in that condition correctly reported receiving Schizophrenia information. When asked what disorder Pat disclosed, 80% correctly perceived no disclosure, and 20% perceived a disclosure of Schizophrenia. Eighty percent of the participants (N=30) in the Schizophrenia Disclosure condition correctly reported receiving no objective information while 20% reported receiving information about Schizophrenia. When asked about Pat's disclosure, 83% correctly perceived a disclosure of Schizophrenia and 16% reported receiving no disclosure, confirming a successful manipulation of Schizophrenia Disclosure. One hundred percent of the participants in the Schizophrenia Combined condition (N=30) correctly reported receiving Schizophrenia information. When asked what disorder Pat disclosed, 93% correctly perceived disclosure of Schizophrenia while 6% reported receiving no

disclosure. Thus, manipulation of Schizophrenia Stereotype Disconfirming Information and Disclosure combined was also successful.

Of the participants in the Depression Stereotype Disconfirming Information condition (N=30), 90% correctly reported receiving information about major depression, 7% reported receiving information about anxiety, 3% reported receiving information about Schizophrenia, confirming a successful manipulation of Depression Stereotype Disconfirming Information. For the participants in the Depression Disclosure condition (N=30), 83% correctly reported receiving no objective information, while 16% reported receiving information about major depression. Confirming a successful manipulation of Depression Disclosure, 86% correctly perceived a disclosure of major depression while 13% perceived no disclosure. For the participants in the Depression Combined condition (N=30), 93% correctly reported receiving information about major depression, while 6% reported receiving information about anxiety. When asked what disorder Pat disclosed, 83% correctly perceived a disclosure of major depression while 6% perceived no disclosure. Thus, manipulation of the Depression Stereotype Disconfirming Information and Disclosure combined also was successful.

Table 4.

Intercorrelations Among DV Pretest scores.

	EC	PC	OCP	RP	V	UP	F	A	P
PC	.07								
OCP	-.04	.19**							
RP	-.06	-.02	.26**						
V	-.13*	-.07	.02	.31**					

UP	-.06	-.11	.01	.11	.20**				
F	-.03	-.32**	.02	.28**	.04	.15*			
A	-.12	-.06	.12	.16*	.07	.18**	.23**		
P	.43**	.06	.01	.01	.06	-.04	-.20**	-.21**	
SocDist	-.17**	-.19**	.01	.08	.05	.08	.24**	.22**	-.10

Note. EC = Empathetic Concern; PC = Prior Contact; OCP = Onset Controllability Pessimism; RP = Recovery Pessimism; V = Violent Stereotype Endorsement; UP = Unpredictable; F = Fear; A= Anger; P = Pity; SocDist = Social Distance. Empathetic Concern and Prior Contact were pretest measures only.
*p <.05
**p <.01

Bivariate correlations for the two personality variables and the pretest scores for the eight dependent variables are presented in Table 4. Regarding the two personality measures, Empathetic Concern was negatively correlated with Violent Stereotype Endorsement (r = -.13, p< .05), positively correlated with Pity (r = .43, p< .01), and negatively correlated with Social Distance (r = .17, p< .01) while Prior Contact was positively correlated with Onset Controllability (r = .19, p< .01), and negatively correlated with Fear (r = -.32, p< .01) and Social Distance (r = -.19, p< .01).

Regarding the dependent variables, Recovery Pessimism was positively correlated with Onset Controllability Pessimism (r = .26, p< .01), Violent stereotype endorsement (r = .31, p< .01), Fear (r = .28, p< .01), and Anger (r = .16, p< .05). Furthermore, Unpredictable stereotype endorsement was positively correlated with Violent stereotype endorsement (r = .20, p< .01), Fear (r = .15, p< .05) and Anger (r = .18, p< .01). Pity negatively correlated with Fear (r = - .20, p< .01), Anger (r = -.21, p< .01) while Social Distance was positively correlated Fear (r = .24, p< .01) and Anger (r = .22, p< .01). These results indicate that when a person highly endorses the stereotypes that individuals

with SMIs have a low possibility of recovery, are responsible for the onset of their disorder, violent and unpredictable they will also experience high levels of fear and anger toward these individuals. Furthermore, a person's desire for social distance toward individuals SMIs increases as their fear and anger toward these individuals increases. However, when a person's pity toward individuals with SMIs increases, their fear and anger also decreases. It must be noted that the r coefficients suggest that these relationships were modest.

Because there were notable differences in the pretest scores between Schizophrenia and Depression, intercorrelations among the pretest and posttest scores for two personality variables and the eight dependent variables were also examined between the two disorders. For the pretest scores (Appendices B and D), Empathetic Concern was positively correlated with Pity for Schizophrenia and ($r = .52$ $p < .01$) and Depression ($r = .36$ $p < .01$). This relationship indicates that when a person has high empathy they will also have higher amounts of pity toward a person with Schizophrenia and Depression, although the relationship is stronger for Schizophrenia. Empathetic Concern was also negatively correlated with Recovery Pessimism ($r = -.27$, $p < .05$), and Anger ($r = -.21$, $p < .05$) for Depression, but not for Schizophrenia (Recovery Pessimism ($r = -.09$, $p = .49$, and Anger ($r = -.11$, $p = .42$) indicating that when a person has high empathy they will also be less likely to endorse the stereotype that people with Depression are incapable of recovering from their disorder and they will have less amounts of anger toward these individuals. Prior Contact was negatively correlated with Fear for Schizophrenia ($r = -.24$, $p < .01$) and Depression ($r = -.15$, $p < .05$), indicating that Prior Contact with a person with Schizophrenia and major depression will ultimately decrease anger. Prior contact

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was also positively correlated with Onset Controllability Pessimism for Depression ($r =$ .24, p <.01) but not for Schizophrenia Onset Controllability Pessimism ($r =$ -.10, p =.41), indicating that prior contact with a person with major depression will increase an individual's belief that they are responsible for the onset of their disorder.

Both Schizophrenia ($r =$ .26, p< .01) and Depression ($r =$ .34, p< .01) pretest scores displayed positive correlations between Recovery Pessimism and Onset Controllability Pessimism. Furthermore, when a person highly endorses the stereotype that people with major depression are responsible for the onset of their disorder they also highly endorse the stereotype that such individuals will never recover from their illness. Recovery Pessimism and Violent stereotype endorsement were also positively correlated for Schizophrenia ($r =$ .24, p< .01) and Depression ($r =$ .36, p< .01. These results indicate that when a person endorses the stereotype that individuals with Schizophrenia and major depression will not recover from their disorder they will also believe that these individuals are violent. Pity was negative correlated with Anger for Schizophrenia ($r =$ -.21, p< .01) and Depression ($r =$ -.34, p< .01). Therefore, individuals who express more pity toward individuals with major depression will also express less anger toward these individuals. For Schizophrenia, Social Distance was positively correlated Fear ($r =$ .25, p< .01) and Anger ($r =$ .28, p< .01). However, in the Depression Condition Social Distance was positively correlated with Anger ($r =$ .18, p< .05) but the relationship between Social Distance and Fear ($r =$ .17, p< .12) was weaker for Depression compared to Schizophrenia. Thus the more fear and anger one feels toward a person with Schizophrenia, the more likely they will desire distance from these individuals. Furthermore, the more anger one feels toward an individual with major depression the

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more likely they will desire social distance from these individuals.

Table 5.

Intercorrelations Among DV Posttest scores

	EC	PC	OCP	RP	V	UP	F	A	P
PC	.07								
OCP	-.04	.02							
RP	-.06	-.02	.63**						
V	-.13*	-.07	.43**	.56**					
UP	-.06	-.11	.37**	.51**	.58**				
F	-.03	-.32**	.29**	.44**	.36**	.48*			
A	-.12	-.06	.34**	.32**	.37**	.39**	.38**		
P	.43**	.06	-.20**	-.23*	-.26**	-.31**	-.36**	-.29**	
SocDist	-.17**	-.19**	.22**	.29**	.32**	.39**	.41**	.33**	-.35**

Note. EC = Empathetic Concern; PC = Prior Contact; OCP = Onset Controllability Pessimism; RP = Recovery Pessimism; V = Violent; UP = Unpredictable; F = Fear; A= Anger; P = Pity; SocDist = Social Distance. Empathetic Concern and Prior Contact were pretest measures only.

*p <.05
**p <.01

Bivariate correlations for the two personality variables and the posttest scores for the eight dependent variables are presented in Table 5. The results indicate that all variables were significantly intercorrelated at the p <.05 level or lower. In contrast to the pretest correlations, Recovery Pessimism was moderately correlated with Onset Controllability Pessimism (r = .63, p <.01), Violent stereotype endorsement (r = .56, p <.01) Unpredictable Stereotype Endorsement (r = .51, p <.01), Fear (r = .44, p <.01) and Anger (r = .32, p <.05). However, in contrasts to the pretest scores Violent stereotype

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endorsement was moderately correlated with Unpredictable stereotype endorsement ($r =$ .58, p <.01), Onset Controllability Pessimism ($r = $ .43, p <.01) Fear ($r = $ .36, p <.01) and Anger ($r = $ .37, p <.01. Pity was negatively and moderately correlated with Fear ($r = $ - .36, p< .01), however, the correlation with Anger was only slightly stronger but still modest (r = -.29, p< .01). The correlations between Social Distance, Fear ($r = $ .41, p <.01), and Anger ($r = $ .33, p <.01 were only moderately stronger for the posttest scores.

Regarding Schizophrenia and Depression posttest correlations (Appendix C and E), the correlation between Recovery Pessimism and Onset Controllability Pessimism were moderately stronger than the pretest correlation for Schizophrenia (pretest $r = $ .26 p <.01, posttest $r = $ .52 p <.01) and Depression (pretest $r = $ .34 p <.01, posttest $r = $ .71, p <.01). There was a stronger positive correlation between Onset Controllability Pessimism and Anger for Depression ($r = $ .43, p <.01) than Schizophrenia ($r = $ .18, p <.05). Correlations in the Depression condition were stronger than the same relations in the Schizophrenia condition for Onset Controllability and Pity (Schizophrenia $r = $ -.06, p =.87 Depression $r = $ -34, p <.01) and the positive correlation with Social Distance (Depression $r = $ .35, p <.01, Schizophrenia $r = $ .07, p =.45. Similarly, the negative correlation between Recovery Pessimism and Pity was stronger for Depression ($r = $ -.32, p <.01) than Schizophrenia ($r = $ -.14, p =.05). The positive correlation between Violent stereotype endorsement and Fear was also stronger for Depression ($r = $ .47, p <.01) than Schizophrenia ($r = $ .23, p< .29. However, the positive correlation between Unpredictable stereotype endorsement and Fear was stronger for Schizophrenia (Schizophrenia $r = $ .58, p <.01) than Depression ($r = $ .36, p <.01) but the positive correlation between Unpredictable stereotype endorsement and Anger was stronger for Depression ($r = $ .38, p

<.01) than Schizophrenia (r = .18, p <.05). Lastly, the negative correlation between Pity and Fear was stronger for Schizophrenia (r = -46, p <.01) Depression (r = -.21, p <.01`).

As indicated by these results the three components of Interpersonal Stigma—stereotypes, emotional reactions, and social distance—were all significantly intercorrelated for both Schizophrenia and Depression. The results provide further evidence of mental illness stigma as a multidimensional construct (as theorized in the ICMMIS) that is consistent between two SMIs. However, certain patterns of correlations did differ between variables for pretest and posttest scores. For both Schizophrenia and Depression the positive correlation between Onset Controllability and Recovery Pessimism increased after the experimental manipulation. Furthermore, the positive correlation between Recovery Pessimism and Violence and Fear was stronger for posttest scores for both Schizophrenia and Depression. Fear was also strongly correlated with Social Distance for both disorders. This pattern reveals the possible role of the emotional reaction variable Fear as a possible mediator between the three stereotypes- Onset Controllability Pessimism, Recover Pessimism, and Violence- and the desire for Social Distance.

Tests of Hypotheses

Hypotheses 1 and 2 stated that participants who rank high in Empathetic Concern and Prior Contact will report less Onset Controllability Pessimism, Recovery Pessimism, Violent stereotype endorsement, Unpredictable stereotype endorsement, less Fear and Anger, more pity, and a lesser desire for social distance. These hypotheses were tested via linear regression analysis with Empathetic Concern and Prior contact entered as the

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independent variables and Onset Controllability Pessimism, Recovery Pessimism,

Violent, Unpredictable, Fear, Anger, Pity, and Social Distance pretest scores entered as

the dependent variables in eight multiple regression analyses.

The results of the analyses were similar to the significant correlations, indicating

that Empathetic Concern predicted participants' pretest level of Pity (β = .43, t = 7.45, p

< .001), and inversely predicted participant's pretest level of Violent Stereotype

endorsement (β = -.13, t = 2.06, p < .05), Pity (β = .43, t = 7.44, p < .001), and Social

Distance (β = -.17, t = -2.70, p < .01). However, pretest levels of Onset Controllability

Pessimism, Recovery Pessimism, Unpredictable, Fear, and Anger were not inversely

predicted by Empathetic Concern. For posttest scores, the results of the regression

analyses were similar to the significant correlations, indicating that Empathetic Concern

inversely predicted participants' posttest level of Pity (β = .29, t = 4.74, p < .001), and

inversely predicted Recovery Pessimism, (β = -.125, t = -1.95, p < .05), Fear (β = -.150, t

= -2.32, p < .05), and Social Distance (β = -.15, t = -2.37, p < .05). However, posttest

levels of Onset Controllability Pessimism, Violent stereotype endorsement,

Unpredictable stereotype endorsement, and Anger were not inversely predicted by

Empathetic Concern. Therefore, hypotheses 1g and 1h were supported, hypotheses 1b,

1c, and 1e were partially supported, and hypotheses 1a, 1d, and 1f were not supported.

These results indicate that high Empathetic Concern ultimately increase the amount of

Pity one feels toward individuals with SMIs and decrease the desire for Social Distance

toward a person with a SMI.

Prior Contact inversely predicted Fear (β = -.32, t = -5.31, p <.001), and Social

Distance (β = -.19, t = -3.06, p <.01). However, Prior Contact did not inversely predict

the participant's pretest levels of Onset Controllability Pessimism, Recovery Pessimism, Violent, Unpredictable, Anger, or Pity. Unexpectedly, Prior Contact also predicted Onset Controllability (β = .19, t = 3.01, p <.01), indicating that more prior contact with a person with a SMI will increase the endorsement of the stereotype that a person with a SMI is responsible for the onset of their disorder. For posttest scores, Prior Contact inversely predicted Fear (β = -1.72, t = -2.69, p <.01), and Social Distance (β = -.12, t = -1.96, p <.05). However, Prior Contact did not inversely predict the participant's pretest levels of Onset Controllability Pessimism, Recovery Pessimism, Unpredictable stereotype endorsement, Anger, or Pity. These results indicate that prior contact with a person with a SMI will ultimately decrease fear and the desire for social distance.

We also tested the predictions for Prior Contact, as they may have differed between the Schizophrenia and Depression conditions. Schizophrenia Prior Contact also inversely predicted Fear pretest scores (β = .24, t = 2.74, p < .05), Anger pretest scores (β = .18, t = 2.03, p < .05), and marginally inversely predicted Social Distance pretest scores (β = -.21, t = -1.65, p = .10). However, Prior Contact did not inversely predict Fear posttest scores (β = .12, t = -1.16, p = .25), Anger posttest scores, (β = -.33, t = -.40, p = .72) but marginally inversely predicted Social Distance posttest scores (β = -.19, t = -1.47, p = .15). Prior Contact also did not inversely predict pretest or posttest scores for Onset Controllability Pessimism, Recovery Pessimism, Unpredictable stereotype endorsement, nor did it predict the pretest or posttest scores for Pity. Depression Prior Contact predicted Onset Controllability Pessimism for pretest (β = .23, t = 2.57, p < .05) and posttest scores (β = .26, t = 2.70, p < .05). Prior Contact also predicted Unpredictable pretest scores (β = -.20, t = -2.25, p < .05) but not posttest scores (β = -.11, t = -1.22, p =

.22). Prior Contact only marginally inversely predicted Fear pretest scores (β = -.15, t = -1.62, p = .11) and posttest scores (β = -.13, t = -1.45, p = .15). For Social Distance, Prior Contact did not inversely predict pretest scores (β = -.1.32, t = -1.01, p = .32) or posttest scores (β = -.044, t = -.34, p = .74). However, Prior Contact did not inversely predict pretest or posttest scores for Recovery Pessimism, Violent stereotype endorsement or Anger, nor did it predict pretest or posttest Pity.

These results suggest that Empathetic Concern and Prior Contact are more complexly related to stereotyping, emotional reactions, and Social Distance than hypothesized. This will be further highlighted in the discussion section.

Onset Controllability Pessimism

Table 6.

ANOVA for the Effects of Disorder, Stereotype Disconfirming Information and Disclosure on Onset Controllability Pessimism.

Measure	Condition	SS	MS	df	F	p	η^2
Onset Controllability Pessimism							
	Pretest	244.37	244.37	1	52.47*	.00	.18
	Disorder	3.18	3.18	1	.68	.41	.00
	SDI	124.06	124.06	1	26.64	.00	.10
	Disclosure	27.99	27.99	1	6.01	.01	.02
	SDI X	4.07	4.07		.87	.35	.00

Disorder			1			
Disc X Disorder	14.01	14.01	1	3.09	.08	.01
SDI X Disc	.47	.47	1	.10	.75	.00
SDI X Disc X Disorder	.48	.48	1	.10	.75	.00

Note. SDI = Stereotype Disconfirming Information; Disc = Disclosure; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined. * Indicates a significant correlation between pretest scores and posttest scores.

Table 7.

Means and Standard Deviations for Onset Controllability Pessimism across Information Condition and Disorder.

Measure	Disorder	Experimental Group							
		Control		SDI		Disclosure		SDI + DISC	
Onset Controllability		PRE	POST	PRE	POST	PRE	POST	PRE	POST
		M (SD)	M(SD)	M (SD)	M(SD)	M (SD)	M(SD)	M (SD)	M(SD)
		4.73(3.08)	4.95(3.11)$_a$	4.23(3.07)	3.42(1.94)$_b$	4.30(2.95)	4.17(2.69)$_c$	4.45(3.16)	2.82(1.49)$_{bd}$
	SCHIZ	4.53(2.54)	4.76(2.74)$_{a1}$	3.97 (3.06)	2.89(.91)$_{b2}$	3.97(2.83)	4.39(2.75)$_{c4}$	3.73(2.42)	2.78(.85)$_{bd5}$
	MD	4.93 (3.58)	5.13(3.46)$_{a1}$	4.47 (3.11)	3.95(2.45)$_{b3}$	4.63(3.08)	3.96(2.67)$_{b4}$	5.12(3.66)	2.86(1.92)$_{c5}$

Note. OCP = Onset Controllability Pessimism; SDI = Stereotype Disconfirming Information Only; SDI +Disc = Stereotype Disconfirming Information and Disclosure combined; SCHIZ = Schizophrenia; MD = Depression. Posttest scores were adjusted to reflect the covariate (pretest) influence. Means in different information conditions in the same row that do not share alphabetical subscripts (a,b,c,d, etc) differ significantly. Means in different disorder conditions in the same column that do not share numerical subscripts (1, 2, 3, 4, etc) differ significantly

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Figure 1.

Mean pretest and posttest scores within Information Conditions for Onset Controllability
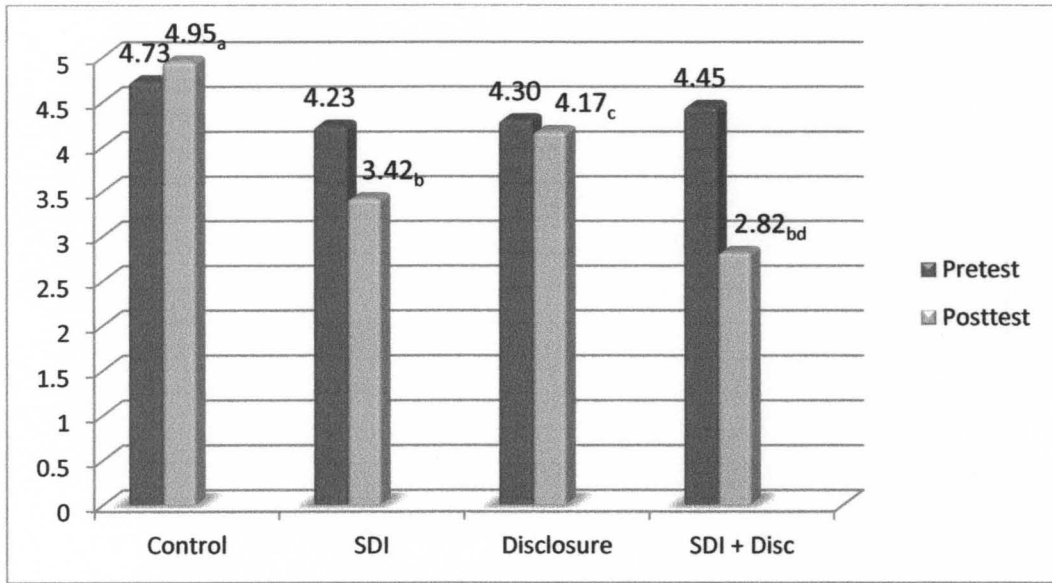
Pessimism

Note. SDI = Stereotype Disconfirming Information Only; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined. Posttest scores were adjusted to control for the covariate (pretest) influence. Means in the same row that do not share subscripts differ significantly.

Figure 2.

Mean posttest scores for Onset Controllability Pessimism as a function of information condition and disorder.

Note. SDI = Stereotype Disconfirming Information Only; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined. Posttest scores were adjusted to control for the covariate (pretest) influence. Means in different information conditions in the same row that do not share alphabetical subscripts (a,b,c,d, etc) differ significantly. Means in different disorder conditions in the same column that do not share numerical subscripts (1, 2, 3, 4, etc) differ significantly.

Hypotheses 3a-6a stated that Stereotype Disconfirming Information will provide a strong reduction in Onset Controllability Pessimism when compared to the Control group and the Disclosure group, while the Combined group will have the strongest effect compared to the other three groups. Furthermore, it was expected that there will be no difference in these effects between Schizophrenia and Depression. To test these hypotheses, main effects and interaction effects were examined via a 2 (Schizophrenia vs.

Depression) x 2 (SDI vs. Disclosure) ANOVA, with Onset Controllability Pessimism

pretest scores entered as the covariate.

As shown in Table 6, there were no significant effects for the

Disorder condition, $F(1, 238)$ = .68, p= .41, confirming hypothesis 6a. Significant main

effects were found for both the SDI, $F(1, 238)$ = 26.64, p <.001, and Disclosure

conditions, $F(3, 238)$ = 6.01, p <.01. Most interaction effects were not significant,

however, the Disc X Disorder interaction displayed a trend and will be discussed below.

Descriptive statistics for the Onset Controllability pretest and posttest scores across the

four information conditions- Control, Stereotype Disconfirming Information, Disclosure,

and the Combined condition- and the two disorder conditions- Schizophrenia and

Depression- are presented in Table 7. Note that a high mean indicates a high level of

Onset Controllability Pessimism, that is, that a person with a SMI is responsible for the

onset of their disorder.

Simple contrasts (Figure 1) revealed that the group receiving Stereotype

Disconfirming Information had significantly lower posttest scores in Onset

Controllability Pessimism when compared to the Control group. Although posttest scores

in the Disclosure only group were significantly lower than those in the Control group,

they did not differ from the Stereotype Disconfirming Information group. Furthermore,

posttest scores in the Combined group were significantly lower compared to the Control

group and the Disclosure group, however, the posttest scores did not differ compared to

the Stereotype Disconfirming Information. Therefore, hypotheses 3a and 3b were

supported and 3c was not supported.

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As Figure 2 displays, there was a marginal two-way Disc X Disorder $F(1, 238) =$ 3.09, p= .08. When provided with Stereotype Disconfirming Information, participants in the Schizophrenia condition had significantly lower Onset Controllability Pessimism compared to participants in the Depression condition. When provided with Disclosure, the Onset Controllability Pessimism for participants in the Schizophrenia condition did not differ from those in the Control condition. Furthermore, there was no difference in the Depression posttest scores between Stereotype Disconfirming Information only treatment and the Disclosure only treatment. When provided with the Combined treatment, posttest scores for the Schizophrenia condition did not differ from the Stereotype Disconfirming Information group. This may be due to the content of the Stereotype Disconfirming Information and Disclosure manipulation, which will be highlighted in the discussion section.

Recovery Pessimism

Table 8.

ANOVA for the Effects of Disorder, Stereotype Disconfirming Information and Disclosure on Recovery Pessimism

Measure	Condition	SS	MS	df	F	p	η^2
Recovery Pessimism							
	Pretest	1187.70	1187.70	1	105.79*	.00	.31
	Disorder	.42	.42	1	.04	.85	.00
	SDI	508.40	508.40	1	45.28	.00	.16

Disclosure SDI X	259.89	259.89	1	23.15	.00	.09
Disorder Disc X	12.06	12.06	1	1.07	.30	.00
Disorder SDI X	1.97	1.97	1	.18	.67	.00
Disc SDI X Disc X	24.54	24.54	1	2.19	.14	.01
Disorder	1.09	1.09	1	.10	.75	.00

Note. SDI = Stereotype Disconfirming Information; Disc = Disclosure SDI + Disc = Stereotype Disconfirming Information and Disclosure combined. * Indicates a significant correlation between pretest scores and posttest scores.

Table 9.

Means and Standard Deviations for Recovery Pessimism across Information Condition and Disorder.

Measure	Disorder	Experimental Group							
		Control		SDI		Disclosure		SDI + DISC	
Recovery Pessimism		PRE M (SD)	POST M(SD)	PRE M (SD)	POST M(SD)	PRE M (SD)	POST M(SD)	PRE M (SD)	POST M(SD)
		11.41(4.47)	11.40(4.94)$_a$	11.13(4.05)	7.84(3.72)$_b$	11.72(4.44)	8.68(4.13)$_b$	11.15(4.34)	6.40(3.00)$_c$
	SCHIZ	11.43(3.85)	11.29(4.25)$_{a1}$	10.67(2.97)	8.05(5.61)$_{b2}$	12.87(4.81)	8.25 (2.99)$_{b3}$	11.03 (4.43)	6.56(4.39)$_{c5}$
	MD	11.40(5.56)	11.51(4.11)$_{a1}$	11.60(4.90)	7.64(4.21)$_{b2}$	10.57(3.77)	9.11 (2.31)$_{c4}$	11.27(4.32)	6.24(3.54)$_{bd5}$

Note. SDI = Stereotype Disconfirming Information Only; SDI +Disc = Stereotype Disconfirming Information and Disclosure combined; SCHIZ = Schizophrenia; MD = Depression. Posttest scores were adjusted to reflect the covariate (pretest) influence. Means in different information conditions in the same row that do not share alphabetical subscripts (a,b,c,d, etc) differ significantly. Means in different disorder conditions in the same column that do not share numerical subscripts (1, 2, 3, 4, etc) differ significantly.

Figure 3.

Mean pretest and posttest scores within Information Conditions for Recovery Pessimism.
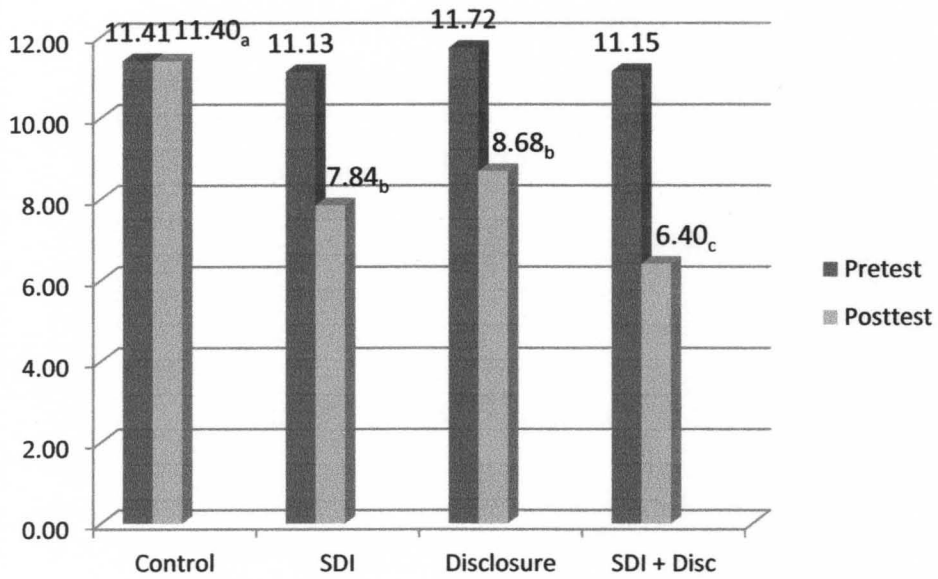
Note. SDI = Stereotype Disconfirming Information Only; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined. Posttest scores were adjusted to control for the covariate (pretest) influence. Means in the same row that do not share subscripts differ significantly.

Figure 4.

Mean posttest scores for Recovery Pessimism as a function of information condition and disorder.

Note. SDI = Stereotype Disconfirming Information Only; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined. Posttest scores were adjusted to control for the covariate (pretest) influence. Means in different information conditions in the same row that do not share alphabetical subscripts (a,b,c,d, etc) differ significantly. Means in different disorder conditions in the same column that do not share numerical subscripts (1, 2, 3, 4, etc) differ significantly.

Hypotheses 3b-6b stated that Stereotype Disconfirming Information will provide a strong reduction in Recovery Pessimism when compared to the Control group and the Disclosure group while the combined group will have the strongest effect compared to the Control group, the Stereotype Disconfirming Information group, and the Disclosure group. Furthermore there will be no difference in these effects between Schizophrenia and Depression. To test these hypotheses, main effects and interaction effects were

examined first via a 2 (Disorder) x 2 (SDI vs. Disclosure) ANOVA with Recovery

Pessimism pretest scores entered as the covariate.

As shown in Table 8 significant main effects were found for both the SDI, $F(1,$

$238) = 45.28$, p <.001, and Disclosure conditions, $F(3, 238) = 23.15$, p <.01, but not the

Disorder condition $F(1, 238) = .04$, p= .85, confirming hypothesis 6b. Most interaction

effects were not significant, however, there was a marginal SDI X Disorder interaction

effect that will be discussed below. Descriptive statistics for the Recovery Pessimism

pretest and posttest scores across the four information conditions- Control, Stereotype

Disconfirming Information, Disclosure, and SDI+Disc- and the two disorder conditions-

Schizophrenia and Depression- are presented in Table 8 (p.51). Note that a high mean

indicates a high level of Recovery Pessimism, that is, that a person with a SMI will be

incapable of recovering from their illness.

Simple contrasts (Figure 3) revealed that the group receiving Stereotype

Disconfirming Information experienced a significant decrease in Recovery Pessimism

when compared to the Control group. Although posttest scores in the Disclosure only

group differed significantly from the Control group, they did not differ from the

Stereotype Disconfirming Information group. As predicted, Recovery Pessimism posttest

scores in the combined group were significantly lower compared to the control group, the

Stereotype Disconfirming Information, and the Disclosure only group. Hypothesis 3b was

supported while 4b were partially supported.

Figure 4 displays the graph of means for Recovery Pessimism. There was a

marginal two-way SDI X Disorder interaction, $F(1, 238) = 2.19$, p= .14, with participants

in the Schizophrenia condition and Depression condition experiencing a strong decrease

in Recovery Pessimism compared to participants in the Control condition when provided

with Stereotype Disconfirming Information. However, when provided with Disclosure,

the Recovery Pessimism posttest scores for participants in the Schizophrenia and

Depression conditions differed significantly, with the Schizophrenia condition showing

lower Recovery Pessimism than the Depression condition. Furthermore, there was no

difference in the Depression condition between the Stereotype Disconfirming

Information condition and the Disclosure condition, indicating that Disclosure had an

effect similar to Stereotype Disconfirming Information for Depression but not for

Schizophrenia. This may be due to the nature of the Disclosure manipulation and will be

further explained in the discussion section.

Violent Stereotype Endorsement

Table 10.

ANOVA for the Effects of Disorder, Stereotype Disconfirming Information and

Disclosure on Violent stereotype endorsement.

Measure	Condition	SS	MS	df	F	p	η^2
Violent							
	Pretest	53.52	53.52	1	46.49	.00	.17
	Disorder	.59	.59	1	.51	.47	.00
	SDI	61.80	61.80	1	53.68	.00	.19
	Disclosure	66.96	66.96	1	58.16	.00	.20
	SDI X	.11	.11		.10	.76	.00

Disorder			1			
Disc X Disorder	.33	.33	1	.29	.59	.00
SDI X Disc	21.94	21.94	1	19.06	.00	.08
SDI X Disc X Disorder	.25	.25	1	.21	.64	.00

Note. SDI = Stereotype Disconfirming Information; Disc = Disclosure; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined. * Indicates a significant correlation between pretest scores and posttest scores.

Table 11.

Means and Standard Deviations for Violent Stereotype Endorsement across Information Condition and Disorder.

Measure	Disorder	Experimental Group							
		Control		SDI		Disclosure		SDI + DISC	
		PRE	POST	PRE	POST	PRE	POST	PRE	POST
		M(SD)	M(SD)	M(SD)	M(SD)	M (SD)	M(SD)	M(SD)	M(SD)
Violent		3.63(1.82)	3.49(1.83)$_a$	3.53(1.72)	1.89(1.01)$_b$	3.85(1.58)	1.83(0.86)$_b$	3.60(1.53)	1.43(.86)$_c$
	SCHIZ	3.67(1.67)	3.63(1.71)$_{a1}$	3.53(1.61)	1.90(.82)$_{b2}$	4.13(1.50)	1.83(1.0)$_{b3}$	3.87(1.55)	1.44(.57)$_{c4}$
	MD	3.64(1.99)	3.35(1.95)$_{a1}$	3.53 (1.85)	1.83(1.21)$_{b2}$	3.57(1.63)	1.82(.71)$_{b3}$	3.33(1.49)	1.39(.53)$_{c4}$

Note. SDI = Stereotype Disconfirming Information Only; SDI +Disc = Stereotype Disconfirming Information and Disclosure combined; SCHIZ = Schizophrenia; MD = Depression. Posttest scores were adjusted to reflect the covariate (pretest) influence. Means in different information conditions in the same row that do not share alphabetical subscripts (a,b,c,d, etc) differ significantly. Means in different disorder conditions in the same column that do not share numerical subscripts (1, 2, 3, 4, etc) differ significantly.

Figure 5.

Mean pretest and posttest scores within Information Conditions for Violent stereotype
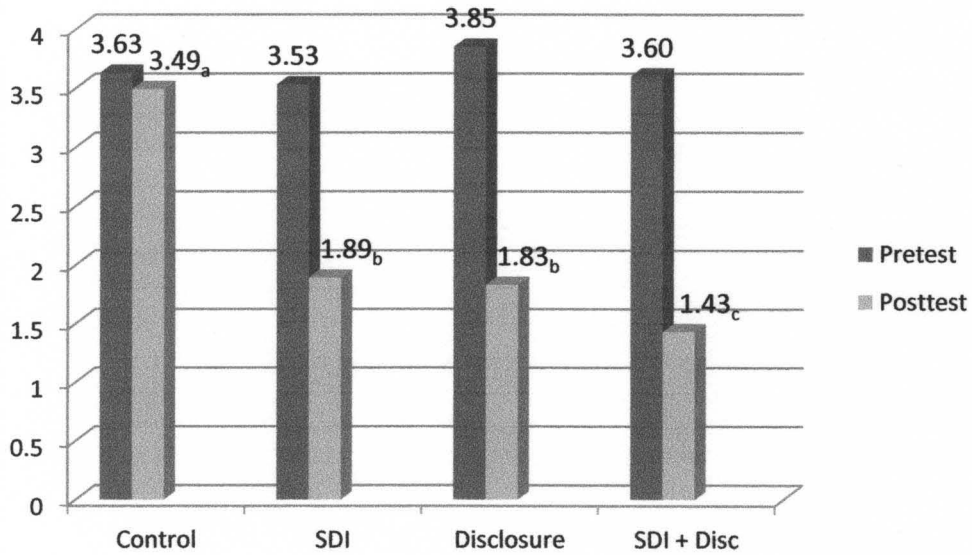
endorsement.

Note. SDI = Stereotype Disconfirming Information Only; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined. Posttest scores were adjusted to control for the covariate (pretest) influence. Means in the same row that do not share subscripts differ significantly.

Figure 6.

Mean posttest scores for Violent stereotype endorsement as a function of information

condition and disorder.

Note. SDI = Stereotype Disconfirming Information Only; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined. Posttest scores were adjusted to control for the covariate (pretest) influence. Means in different information conditions in the same row that do not share alphabetical subscripts (a,b,c,d, etc) differ significantly. Means in different disorder conditions in the same column that do not share numerical subscripts (1, 2, 3, 4, etc) differ significantly.

Hypotheses 3c-6c stated that Stereotype Disconfirming Information will provide a strong reduction in Violent stereotype endorsement when compared to the Control group and the Disclosure group while the combined group will have the strongest effect compared to the Control group, the Stereotype Disconfirming Information group, and the Disclosure group. Furthermore it is expected that there will be no difference in these effects between Schizophrenia and Depression. To test these hypotheses, main effects

and interaction effects were examined first via a 2 (Disorder) x 2 (SDI vs. Disclosure) ANOVA with Violent stereotype endorsement pretest scores entered as the covariate.

As shown in Table 10, there were no significant effects for the Disorder condition, $F(1, 238) = .51$, p= .47, confirming hypothesis 6b. Significant main effects were found for both the SDI, $F(1, 238) = 53.68$, p <.001, and Disclosure conditions, $F(3, 238) = 58.16$, p <.01, as well as the two-way SDI X Disc interaction $F(1, 238) = 19.06$, p <.001. Descriptive statistics for the Violent stereotype endorsement pretest and posttest scores across the four information conditions- Control, Stereotype Disconfirming Information, Disclosure, and SDI+Disc- and the two disorder conditions- Schizophrenia and Depression- are presented in Table 11 Note that a high mean indicates a high level of Violent stereotype endorsement, that is, that a person with a SMI is violent. Simple contrasts revealed that the group receiving Stereotype Disconfirming Information experienced a significant decrease in Violent stereotype endorsement when compared to the control group. Although posttest scores in the Disclosure only group differed significantly from the control group, they did not differ from the Stereotype Disconfirming Information group. As predicted, posttest scores in the combined group were significantly lower compared to the control group, the Stereotype Disconfirming Information, and the Disclosure only group. Thus, hypothesis 5c was supported while 3c and 4c were partially supported.

Figure 6 displays the graph of means for Violent stereotype endorsement. As noted above, the SDI X Disc was significant, with participants in the Schizophrenia condition and the Depression condition experiencing a strong decrease in Violent stereotype endorsement compared to participants in the Control condition when provided

with Stereotype Disconfirming Information. However, when provided with Disclosure only, the reduction for participants in the Schizophrenia and Depression conditions did not differ from that for the participants in the Stereotype Disconfirming Information group. When provided with the Combined treatment, both participants in the Schizophrenia and Depression condition had lower Violent stereotype endorsement than the control group, the Stereotype Disconfirming Information group, and the Disclosure group, but the drop in perceived Violence was not twice that of the two information conditions,. This interaction effect will be further interpreted with the interaction results for Unpredictable stereotype endorsement.

Unpredictable Stereotype Endorsement

Table 12.

ANOVA for the Effects of Disorder, Stereotype Disconfirming Information and Disclosure on Unpredictable stereotype endorsement

Measure	Condition	SS	MS	df	F	p	η^2
Unpredictable							
	Pretest	46.29	46.29	1	21.82*	.00	.09
	Disorder	.43	.43	1	.20	.65	.00
	SDI	73.99	73.99	1	34.87	.00	.13
	Disclosure	102.93	102.93	1	48.51	.00	.17
	SDI X Disorder	.17	.17	1	.08	.78	.00

Disc X Disorder	1.40	1.40	1	.66	.41	.00
SDI X Disc	14.88	14.88	1	7.01	.01	.03
SDI X Disc X Disorder	1.42	1.42	1	.67	.41	.00

Note. SDI = Stereotype Disconfirming Information Only; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined. * Indicates a significant correlation between pretest scores and posttest scores.

Table 13.

Means and Standard Deviations for Violent Stereotype Endorsement across Information Condition and Disorder.

Measure	Disorder	Experimental Group							
		Control		SDI		Disclosure		SDI + DISC	
Unpredictable		PRE M(SD)	POST M(SD)	PRE M(SD)	POST M(SD)	PRE M(SD)	POST M(SD)	PRE M(SD)	POST M(SD)
		4.25(1.60)	$4.45(1.83)_a$	4.28(1.71)	$2.85(1.03)_b$	4.03(1.76)	$2.65(0.86)_b$	4.02(1.67)	$2.03(0.56)_c$
	SCHIZ	4.43(1.67)	$4.53(1.90)_{a1}$	4.37(1.65)	$2.71(1.48)_{b2}$	3.83(1.91)	$2.71(1.50)_{b3}$	4.27(1.87)	$2.20(1.28)_{c4}$
	MD	4.07 (1.72)	$4.39(1.71)_{a1}$	4.20 (1.789)	$2.99(1.72)_{b2}$	4.23(1.60)	$2.58(1.43)_{b3}$	3.77(1.69)	$1.86(.93)_{c4}$

Note. SDI = Stereotype Disconfirming Information Only; SDI +Disc = Stereotype Disconfirming Information and Disclosure combined; SCHIZ = Schizophrenia; MD = Depression. Posttest scores were adjusted to reflect the covariate (pretest) influence. Means in different information conditions in the same row that do not share alphabetical subscripts (a,b,c,d, etc) differ significantly. Means in different disorder conditions in the same column that do not share numerical subscripts (1, 2, 3, 4, etc) differ significantly.

Figure 7.

Mean pretest and posttest scores within Information Conditions for Unpredictable
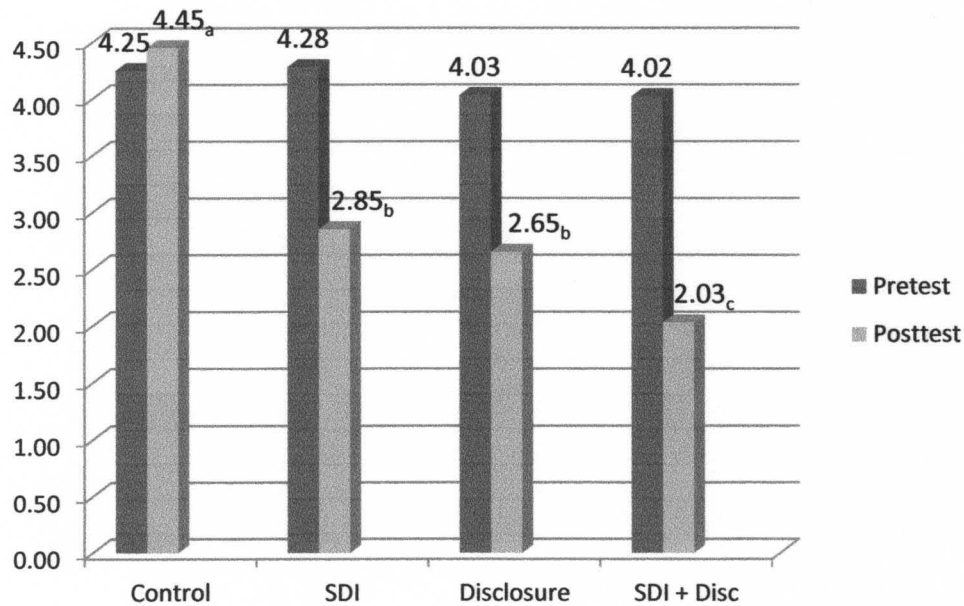
stereotype endorsement.

Note. SDI = Stereotype Disconfirming Information Only; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined. Posttest scores were adjusted to control for the covariate (pretest) influence. Means in the same row that do not share subscripts differ significantly.

Figure 8.

Mean posttest scores for Unpredictable stereotype endorsement as a function of

information condition and disorder.
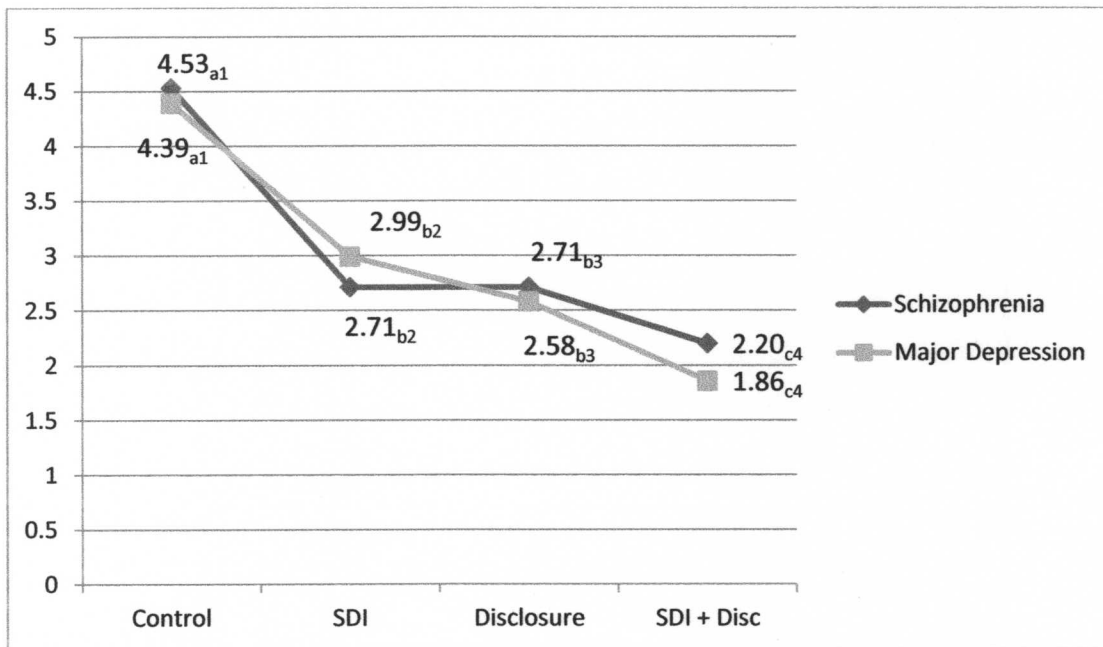
Note. SDI = Stereotype Disconfirming Information Only; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined. Posttest scores were adjusted to control for the covariate (pretest) influence. Means in different information conditions in the same row that do not share alphabetical subscripts (a,b,c,d, etc) differ significantly. Means in different illness conditions in the same column that do not share numerical subscripts (1, 2, 3, 4, etc) differ significantly.

Hypotheses 3d-6d stated that Stereotype Disconfirming Information will provide a strong reduction in Unpredictable stereotype endorsement when compared to the Control and Disclosure while the combined treatment will have the strongest effect compared to the Control, the Stereotype Disconfirming Information, and Disclosure. Furthermore it was hypothesized that there will be no difference in these effects between Schizophrenia and Depression. To test these hypotheses, main effects and interaction

effects were examined first via a 2 (Disorder) x 2 (SDI vs. Disclosure) ANOVA with

Unpredictable stereotype endorsement pretest scores entered as the covariate.

As shown in Table 12, there were no significant effects for the Disorder

condition, $F(1, 238) = .20$, p= .65, confirming hypothesis 6d. Significant main effects

were found for both the SDI, $F(1, 238) = 34.87$, p <.001, and Disclosure conditions, $F(3,

238) = 48.51$, p <.01, as well as the two-way SDI X Disc interaction, $F(1, 238) = 7.01$, p

<.05. Descriptive statistics for the Unpredictable stereotype endorsement pretest and

posttest scores across the four information conditions- Control, Stereotype Disconfirming

Information, Disclosure, and the Combined group- and the two disorder conditions-

Schizophrenia and Depression- are presented in Table 13 Note that a high mean indicates

a high level of Unpredictable stereotype endorsement, that is, that a person with a SMI is

unpredictable.

Simple contrasts (Figure 7) revealed that the group receiving Stereotype

Disconfirming Information experienced a significant decrease in Unpredictable

stereotype endorsement when compared to the control group. Although posttest scores in

the Disclosure group differed significantly from the control group, they did not differ

from the Stereotype Disconfirming Information group. As predicted, Unpredictable

stereotype endorsement was significantly lower in the combined group compared to the

control group, the Stereotype Disconfirming Information, and the Disclosure only group.

Thus, hypothesis 5d was supported while 3d and 4d were partially supported.

Figure 8 displays the graph of means for Unpredictable stereotype endorsement.

The two-way SDI X Disc was significant, with participants in the Schizophrenia

condition and the Depression condition experiencing a strong decrease in Unpredictable

stereotype endorsement compared to participants in the Control condition when provided

with Stereotype Disconfirming Information. However, when provided with Disclosure

only, the reduction in for participants in the Schizophrenia and Depression conditions did

not differ from the participants in the Stereotype Disconfirming Information group. In the

Combined group, participants in the Schizophrenia and Depression condition had

significantly lower Violent stereotype endorsement than the Control group, the

Stereotype Disconfirming Information group, and the Disclosure group, but the

Combination did not produce an additive effect that was two or more times greater than

either condition separately, thereby causing the interaction effect.

Fear

Table 14.

ANOVA for the Effects of Disorder, Stereotype Disconfirming Information and

Disclosure on Fear

Measure	Condition	SS	MS	df	F	p	η^2
Fear							
	Pretest	1181.00	1181.00	1	90.40*	.00	.28
	Disorder	4.23	4.23	1	.32	.57	.00
	SDI	177.14	177.14	1	13.56	.00	.05
	Disclosure	433.39	433.39	1	33.17	.00	.13
	SDI X Disorder	60.16	60.16	1	4.60	.03	.02
	Disc X Disorder	54.96	54.96	1	4.21	.04	.02

SDI X Disc	.02	.02	1	.00	.97	.00
SDI X Disc X Disorder	14.27	14.27	1	1.09	.30	.00

Note. SDI = Stereotype Disconfirming Information Only; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined.* Indicates a significant correlation between pretest scores and posttest scores.

Table 15.

Means and Standard Deviations for Fear across Information Condition and Disorder.

Measure	Disorder	Experimental Group							
		Control		SDI		Disclosure		SDI + DISC	
Fear		PRE	POST	PRE	POST	PRE	POST	PRE	POST
		M(SD)	M(SD)	M(SD)	M(SD)	M(SD)	M(SD)	M(SD)	M(SD)
		13.18(5.24)	12.97(1.83)$_a$	12.43(4.63)	11.23(1.03)$_b$	13.93(5.16)	10.26(.86)$_b$	13.55(5.14)	8.55(.56)$_c$
	SCHIZ	15.13(5.46)	14.06(5.69)$_{a1}$	13.57(5.30)	10.83(4.41)$_{b3}$	15.77(5.11)	9.89(3.19)$_{c4}$	15.17(5.38)	7.68(4.15)$_{d5}$
	MD	11.23(4.25)	11.89(4.44)$_{a2}$	11.27(3.57)	11.64(4.35)$_{ab3}$	12.10(4.59)	10.61(3.49)$_{b4}$	11.93(4.41)	9.43(3.82)$_{c6}$

Note. SDI = Stereotype Disconfirming Information Only; SDI +Disc = Stereotype Disconfirming Information and Disclosure combined; SCHIZ = Schizophrenia; MD = Depression. Posttest scores were adjusted to reflect the covariate (pretest) influence. Means in different information conditions in the same row that do not share alphabetical subscripts (a,b,c,d, etc) differ significantly. Means in different disorder conditions in the same column that do not share numerical subscripts (1, 2, 3, 4, etc) differ significantly.

Figure 9.

Mean pretest and posttest scores within Information Conditions for Fear.
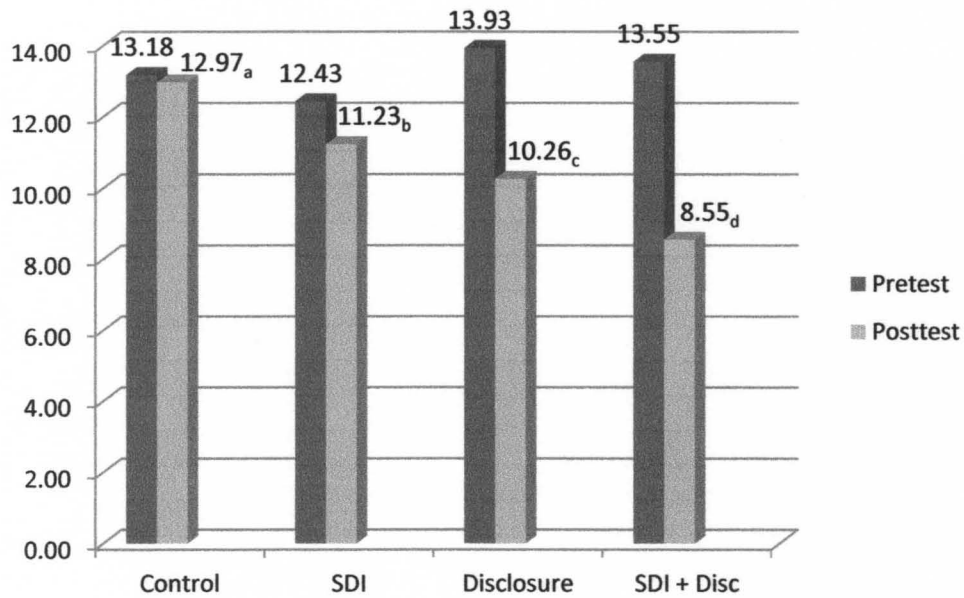
Note. SDI = Stereotype Disconfirming Information Only; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined. Posttest scores were adjusted to control for the covariate (pretest) influence. Means in the same row that do not share subscripts differ significantly.

Figure 10.

Mean posttest scores for Fear as a function of information condition and disorder.
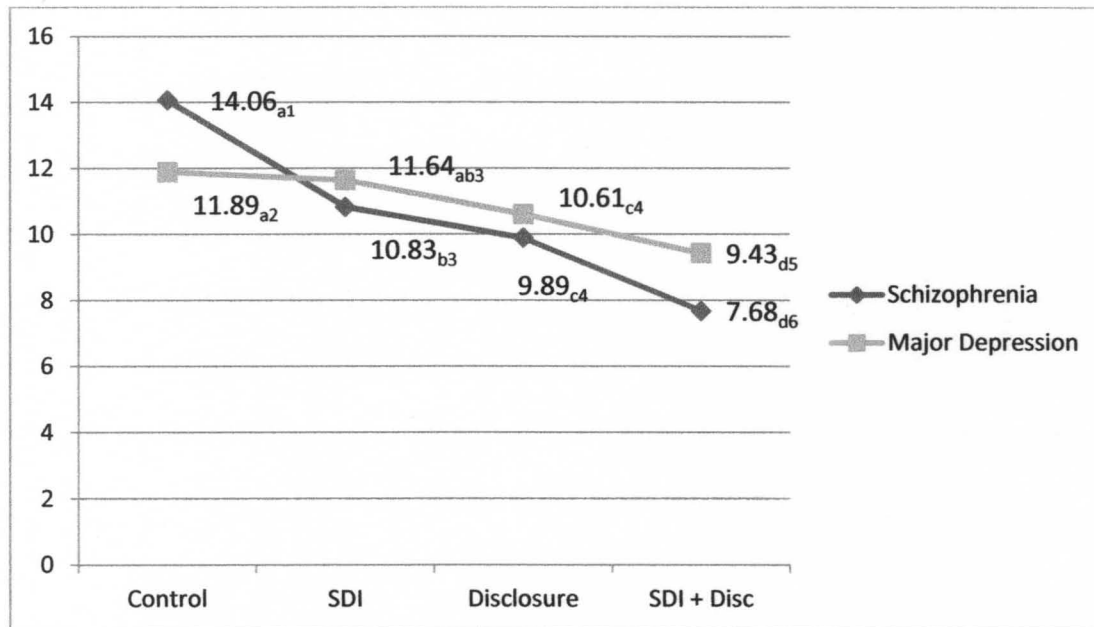
Note. SDI = Stereotype Disconfirming Information Only; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined. Posttest scores were adjusted to control for the covariate (pretest) influence. Means in different information conditions in the same row that do not share alphabetical subscripts (a,b,c,d, etc) differ significantly. Means in different disorder conditions in the same column that do not share numerical subscripts (1, 2, 3, 4, etc) differ significantly.

Hypotheses 3e-6e stated that Disclosure will provide a strong reduction in Fear when compared to the Control and Stereotype Disconfirming Information while the combined treatment will have the strongest effect compared to the Control, Stereotype Disconfirming Information, and Disclosure. Furthermore it was hypothesized that there will be no difference in these effects between Schizophrenia and Depression. To test these hypotheses, main effects and interaction effects were examined first via a 2

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(Disorder) x 2 (SDI vs. Disclosure) ANOVA with Fear pretest scores entered as the covariate.

Descriptive statistics for Fear pretest and posttest scores across the four information conditions- Control, Stereotype Disconfirming Information, Disclosure, and SDI+Disc- and the two disorder conditions- Schizophrenia and Depression- are presented in Table 14. Note that a high mean indicates a high level of fear toward individuals with SMIs. As shown in Table 15, there were no significant main effects for the Disorder condition, $F(1, 238) = .32$, p= .57, however, the significant main effects were found for both the Stereotype Disconfirming Information condition, $F(1, 238) = 13.56$, p <.001, and Disclosure conditions, $F(3, 238) = 33.17$, p <.001. Simple pairwise contrasts (Figure 9) revealed that the group receiving Stereotype Disconfirming Information experienced a significant decrease in Fear when compared to the control group. Although posttest scores in the Disclosure only group differed significantly from the control group, they did not differ from the Stereotype Disconfirming Information group. Fear was significantly lower in the combined group compared to the control group, the Stereotype Disconfirming Information, and the Disclosure only group, as predicted. Thus, hypothesis 5e was supported while 3e and 4e were partially supported.

SDI x Disorder interaction, $F(1, 238) = 4.60$, p <.05, and the , Disc X Disorder $F(1, 238) = 4.21$, p <.05, interaction were significant, indicating a difference between Schizophrenia and Depression. Therefore hypothesis 6e was only partially confirmed. The significant two-way SDI X Disorder and Disc X Disorder interaction effects for Fear were further investigated by examining the individual graphs of means. As Figure 10 (p. 69) illustrates, when participants received no treatment (control), participants expressed

more posttest Fear toward an individual with Schizophrenia than an individual with Depression. However, when participants in the Schizophrenia condition received Stereotype Disconfirming Information, Fear posttest scores were significantly lower than in the Control condition. But when participants in the Depression condition received Stereotype Disconfirming Information, Fear posttest scores were not lower than Control scores (they also were not lower than scores in the comparable Schizophrenia condition). Participants in both Disorder conditions reported less posttest Fear scores when receiving Disclosure information compared to those in the Control condition, and did not differ from each other. But, in the Combined condition participants reported less Fear toward an individual with Schizophrenia than an individual with Depression. This will be further highlighted in the discussion section.

Anger

Table 16.

ANOVA for the Effects of Disorder, Stereotype Disconfirming Information and Disclosure on Anger

Measure	Condition	SS	MS	df	F	p	η^2
Anger							
	Pretest	306.91	306.91	1	82.96*	.00	.26
	Disorder	9.09	9.09	1	2.46	.12	.01
	SDI	37.96	37.96	1	10.26	.00	.04
	Disclosure	76.83	76.83	1	20.77	.00	.08
	SDI X	.19	.19		.05	.82	.00

Disorder Disc X			1			
Disorder SDI X	6.28	6.28	1	1.69	.19	.01
Disc SDI X Disc X	.17	.17	1	.04	.83	.00
Disorder	19.04	19.04	1	5.15	.02	.02

Note. SDI = Stereotype Disconfirming Information Only; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined.* Indicates a significant correlation between pretest scores and posttest scores.

Table 17.

Means and Standard Deviations for Fear across Information Condition and Disorder.

Measure	Disorder	Experimental Group							
		Control		SDI		Disclosure		SDI + DISC	
Anger		PRE M(SD)	POST M(SD)	PRE M(SD)	POST M(SD)	PRE M(SD)	POST M(SD)	PRE M(SD)	POST M(SD)
		5.78(2.65)	5.31(1.83)$_a$	4.67(2.67)	4.55(2.60)$_b$	5.33(2.60)	4.22(.86)$_b$	5.70(2.57)	3.34(.56)$_c$
	SCHIZ	5.57(2.21)	5.58(2.42)$_{a1}$	4.80(2.60)	4.22(2.09)$_{b2}$	5.80(2.40)	3.61(1.30)$_{b3}$	5.67(2.26)	3.27(1.59)$_{bc5}$
	MD	6.00(3.05)	5.03(2.60)$_{a1}$	4.60(2.81)	4.90(2.63)$_{a2}$	4.83(2.74)	4.83 (2.48)$_{a4}$	5.73(2.87)	3.48 (2.39)$_{b5}$

Note. SDI = Stereotype Disconfirming Information Only; SDI +Disc = Stereotype Disconfirming Information and Disclosure combined; SCHIZ = Schizophrenia; MD = Depression. Posttest scores were adjusted to reflect the covariate (pretest) influence. Means in different information conditions in the same row that do not share alphabetical subscripts (a,b,c,d, etc) differ significantly. Means in different disorder conditions in the same column that do not share numerical subscripts (1, 2, 3, 4, etc) differ significantly.

Figure 11.

Mean pretest and posttest scores within Information Conditions for Anger
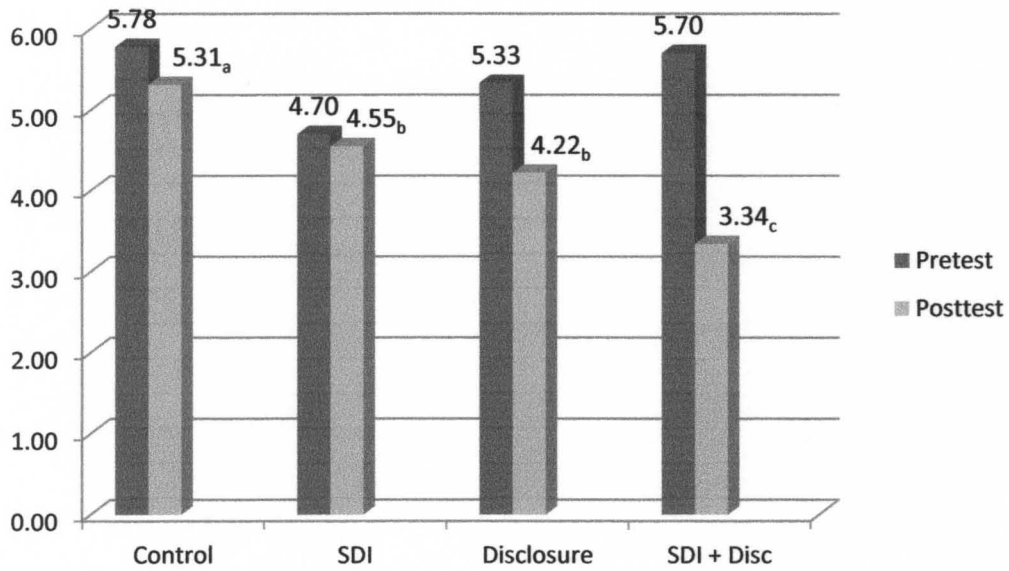
Note. SDI = Stereotype Disconfirming Information Only; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined. Posttest scores were adjusted to control for the covariate (pretest) influence. Means in the same row that do not share subscripts differ significantly.

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Figure 12.

Mean posttest scores for Anger as a function of information condition and disorder.
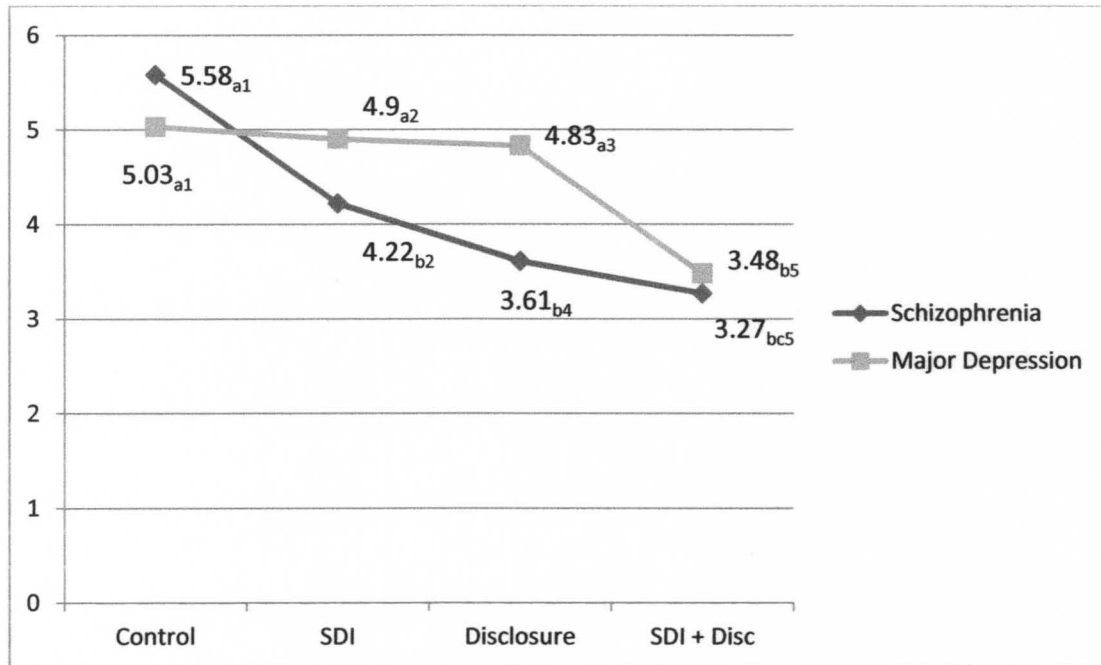
Note. SDI = Stereotype Disconfirming Information Only; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined. Posttest scores were adjusted to control for the covariate (pretest) influence. Means in different information conditions in the same row that do not share alphabetical subscripts (a,b,c,d, etc) differ significantly. Means in different disorder conditions in the same column that do not share numerical subscripts (1, 2, 3, 4, etc) differ significantly.

Hypotheses 3f-6f stated that Disclosure will provide a strong reduction in Anger when compared to the Control and Stereotype Disconfirming Information while the combined treatment will have the strongest effect compared to the Control, Stereotype Disconfirming Information, and Disclosure. Furthermore it was hypothesized that there will be no difference in these effects between Schizophrenia and Depression. To test these hypotheses, main effects and interaction effects were examined first via a 2

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(Disorder) x 2 (SDI vs. Disclosure) ANOVA with Anger pretest scores entered as the covariate.

As shown in Table 16 there were no significant main effects for the Disorder condition, however, there was a marginal trend, $F(1, 238) = 2.46$, p= .12. Furthermore, the three-way SDI X Disc X Disorder interaction, $F(1, 238) = 5.15$, p <.05, was significant, indicating that the information conditions had differing effects as a function of the Schizophrenia and Depression conditions. Therefore hypothesis 6e was not confirmed. Significant main effects were found for both the Stereotype Disconfirming Information condition, $F(1, 238) = 10.26$, p <.001, and Disclosure conditions, $F(3, 238) = 20.77$, p <.001. Descriptive statistics for Anger pretest and posttest scores across the four information conditions- Control, Stereotype Disconfirming Information, Disclosure, and the Combined group- and the two disorder conditions- Schizophrenia and Depression- are presented in Table 17. Note that a high mean indicates a high level of anger toward individuals with SMIs. Simple contrasts (Figure 11) revealed that the group receiving Stereotype Disconfirming Information experienced a significant decrease in Anger when compared to the control group. Although posttest scores in the Disclosure only group differed significantly from the control group, they did not differ from the Stereotype Disconfirming Information group. Anger was significantly lower in the combined group compared to the control group, the Stereotype Disconfirming Information, and the Disclosure only group, as predicted. Thus, hypothesis 5f was supported while 3f and 4f were partially supported. These results, however, are qualified by the 3-way interaction effect interpreted below.

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As Figure 12 illustrates, when participants received no treatment (Control) and the single treatments (Stereotype Disconfirming Information or Disclosure), participants reported more posttest Anger toward an individual with depression than an individual with Schizophrenia. Furthermore, the Schizophrenia condition showed differences from the Control condition in both single Information groups, whereas the Stereotype Disconfirming Information and Disclosure conditions had little to no effect on Anger toward individuals in the Depression condition compared to the Control group. However, when participants were given the Combined treatment, the level of Anger was significantly lower for both Schizophrenia and Depression compared to the Stereotype Disconfirming Information and Disclosure groups, with no difference between the h Schizophrenia and Depression conditions. One possible reason for this outcome may be the influence of Prior Contact and Onset Controllability Pessimism, which will be highlighted further in the discussion section.

Pity

Table 18.

ANOVA for the Effects of Disorder, Stereotype Disconfirming Information and Disclosure on Pity

Measure	Condition	SS	MS	df	F	p	η^2
Pity							
	Pretest	1069.57	1069.57	1	132.11*	.00	.36
	Disorder	10.84	10.84	1	1.34	.25	.01
	SDI	99.52	99.52	1	12.29	.00	.05

Disclosure SDI X	372.98	372.98	1	46.07	.00	.17
Disorder Disc X	.07	.07	1	.01	.93	.00
Disorder SDI X	3.13	3.13	1	.39	.53	.00
Disc SDI X Disc X	3.89	3.89	1	.48	.49	.00
Disorder	5.36	5.36	1	.66	.42	.00

Note. SDI = Stereotype Disconfirming Information Only; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined.* Indicates a significant correlation between pretest scores and posttest scores.

Table 19.

Means and Standard Deviations for Pity across Condition.

Measure	Disorder	Experimental Group							
		Control		SDI		Disclosure		SDI + DISC	
Pity		PRE M(SD)	POST M(SD)	PRE M(SD)	POST M(SD)	PRE M(SD)	POST M(SD)	PRE M(SD)	POST M(SD)
		20.37(4.12)	20.01(4.49)$_a$	20.22(4.57)	21.55(3.49)$_b$	20.40(1.76)	22.76(2.65)$_c$	20.55(1.67)	23.79(3.38)$_d$
	SCHIZ	20.33(4.15)	19.73(4.72)$_{a1}$	19.30(4.31)	20.97(4.32)$_{b2}$	20.60(2.72)	22.70(3.17)$_{c3}$	20.00(4.27)	23.07(3.77)$_{d4}$
	MD	20.40(4.16)	20.23(2.51)$_{a1}$	21.40(3.57)	22.01(2.83)$_{b2}$	20.20(3.56)	22.80(4.27)$_{c3}$	21.10(3.92)	24.67(1.94)$_{d5}$

Note. SDI = Stereotype Disconfirming Information Only; SDI +Disc = Stereotype Disconfirming Information and Disclosure combined; SCHIZ = Schizophrenia; MD = Depression. Posttest scores were adjusted to reflect the covariate (pretest) influence. Means in different information conditions in the same row that do not share alphabetical subscripts (a,b,c,d, etc) differ significantly. Means in different disorder conditions in the same column that do not share numerical subscripts (1, 2, 3, 4, etc) differ significantly.

Figure 13.

Mean pretest and posttest scores within Information Conditions for Pity.
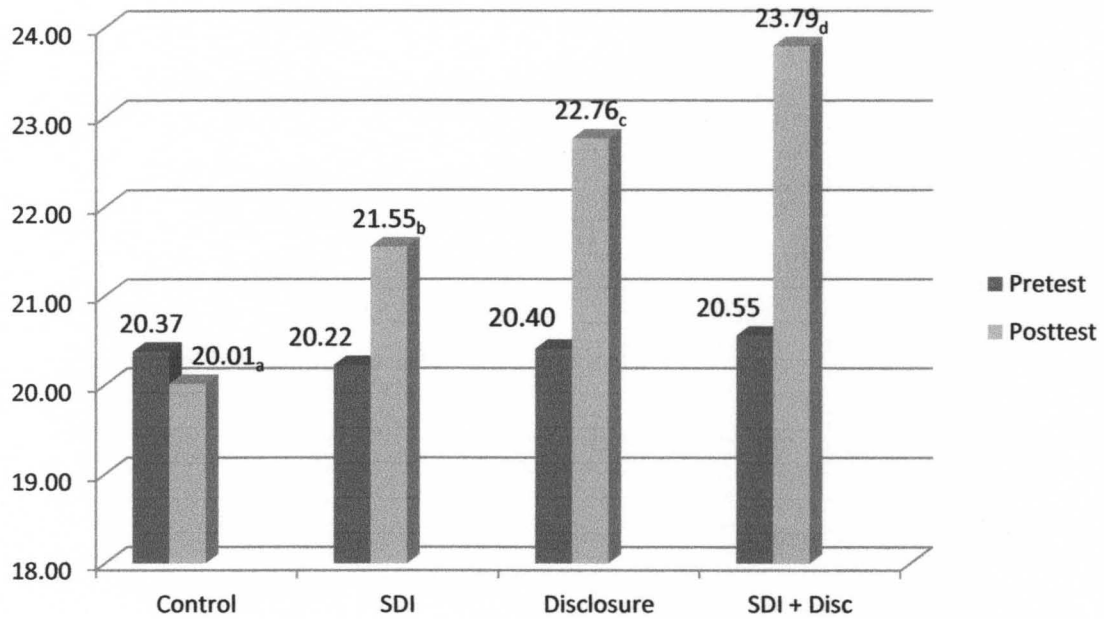
Note. SDI = Stereotype Disconfirming Information Only; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined. Posttest scores were adjusted to control for the covariate (pretest) influence. Means in the same row that do not share subscripts differ significantly.

Figure 14.

Mean posttest scores for Pity as a function of information condition and disorder.
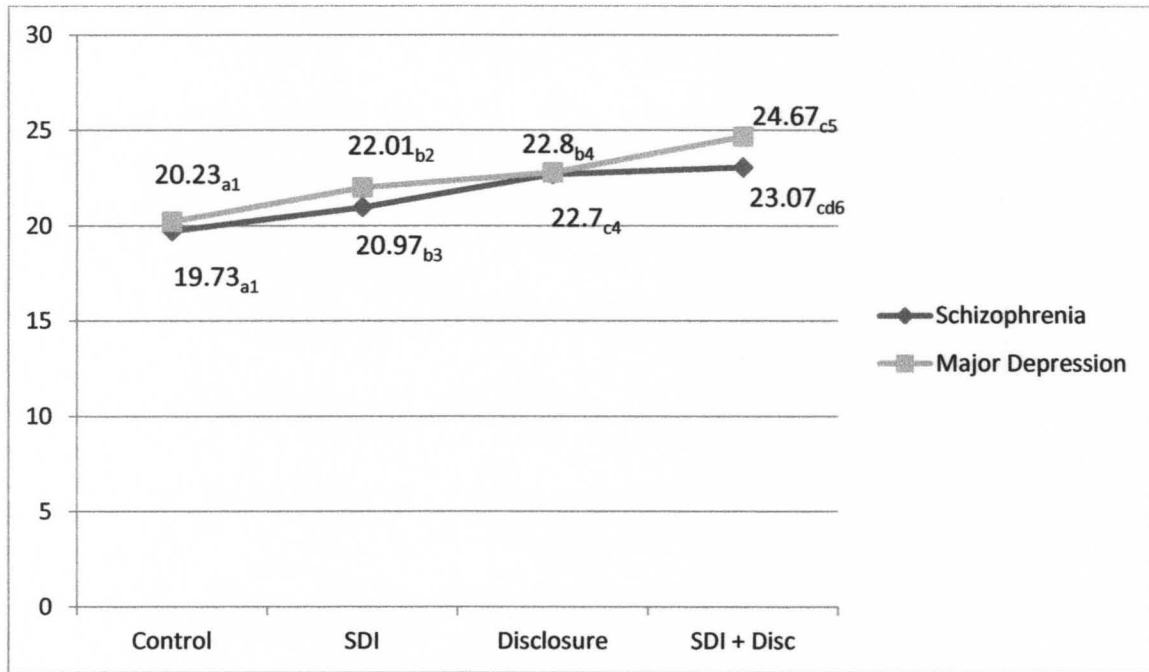
Note. SDI = Stereotype Disconfirming Information Only; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined. Posttest scores were adjusted to control for the covariate (pretest) influence. Means in different information conditions in the same row that do not share alphabetical subscripts (a,b,c,d, etc) differ significantly. Means in different disorder conditions in the same column that do not share numerical subscripts (1, 2, 3, 4, etc) differ significantly.

Hypotheses 3g-6g stated that Disclosure will provide a strong increase in Pity when compared to the Control and Stereotype Disconfirming Information while the combined treatment will have the strongest effect compared to the Control, Stereotype Disconfirming Information, and Disclosure. Furthermore it was hypothesized that there will be no difference in these effects between Schizophrenia and Depression. To test these hypotheses, main effects and interaction effects were examined first via a 2

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(Disorder) x 2 (SDI vs. Disclosure) ANOVA with Pity pretest scores entered as the covariate.

As shown in Table 20 and Figure 14, there were no significant main effects or interaction effects for the Disorder condition, $F(1, 238) = 1.34$, p= .25, confirming hypothesis 6g. Significant main effects were found for both the Stereotype Disconfirming Information condition, $F(1, 238) = 12.29$, p <.001, and Disclosure condition, $F(3, 238) = 46.07$, p <.001. Descriptive statistics for Pity pretest and posttest scores across the four information conditions- Control, Stereotype Disconfirming Information, Disclosure, and SDI+Disc- and the two disorder conditions- Schizophrenia and Depression- are presented in Table 18. Note that a high mean indicates a high level of pity toward individuals with SMIs. Simple contrasts (Figure 13) revealed that the group receiving Stereotype Disconfirming Information experienced a significant decrease in Pity when compared to the Control group. Similarly, Pity was significantly higher in the Disclosure group compared to the Control group and the Stereotype Disconfirming Information group. Ultimately, Pity was the highest in the combined group compared to the Control group, the Stereotype Disconfirming Information, and the Disclosure group, as predicted. Thus, hypotheses3g, 4g, and 5g were supported. In the SDI and Combined conditions, Pity posttest scores were higher in the Depression condition than in the Schizophrenia condition.

Social Distance

Table 20.

ANOVA for the Effects of Disorder, Stereotype Disconfirming Information and

Disclosure on Social Distance

Measure	Condition	SS	MS	df	F	p	η^2
Social Distance							
	Pretest	16078.17	16078.17	1	533.70*	.00	.79
	Disorder	106.74	106.74	1	3.54	.06	.01
	SDI	797.72	797.72	1	26.48	.00	.10
	Disclosure	3663.65	3663.65	1	121.61	.00	.34
	SDI X Disorder	4.77	4.77	1	.16	.69	.00
	Disc X Disorder	11.93	11.93	1	.40	.53	.00
	SDI X Disc	49.10	49.10	1	1.63	.20	.01
	SDI X Disc X Disorder	34.40	34.40	1	1.14	.29	.00

*Indicates a significant correlation between pretest scores and posttest scores.

Table 21.

Means and Standard Deviations for Social Distance across Information Conditions.

Measure	Disorder	Experimental Group							
		Control		SDI		Disclosure		SDI + DISC	
		PRE M(SD)	POST M(SD)	PRE M(SD)	POST M(SD)	PRE M(SD)	POST M(SD)	PRE M(SD)	POST M(SD)
Social Distance		$40.82(11.78)$	$41.02(11.92)_a$	$42.77(9.93)$	$36.46(11.49)_b$	$40.68(8.94)$	$32.30(8.86)_c$	$42.46(8.30)$	$29.55(4.44)_d$
	SCHIZ	$43.43(13.00)$	$40.37(13.60)_{a1}$	$42.17(9.45)$	$35.32(8.46)_{b3}$	$41.33(7.69)$	$31.53(9.83)_{c5}$	$44.93(8.59)$	$29.62(7.10)_{c7}$
	MD	$38.20(9.97)$	$41.68(9.96)_{a2}$	$43.37(10.51)$	$37.59(12.01)_{b4}$	$40.03(10.13)$	$33.28(8.86)_{c6}$	$40.00 (7.32)$	$29.47(8.44)_{d7}$

Note. SDI = Stereotype Disconfirming Information Only; SDI +Disc = Stereotype Disconfirming Information and Disclosure combined; SCHIZ = Schizophrenia; MD = Depression. Posttest scores were adjusted to reflect the covariate (pretest) influence. Means in different information conditions in the same row that do not share alphabetical subscripts (a,b,c,d, etc) differ significantly. Means in different disorder conditions in the same column that do not share numerical subscripts (1, 2, 3, 4, etc) differ significantly.

Figure 15.

Mean pretest and posttest scores within Information Conditions for Social Distance.
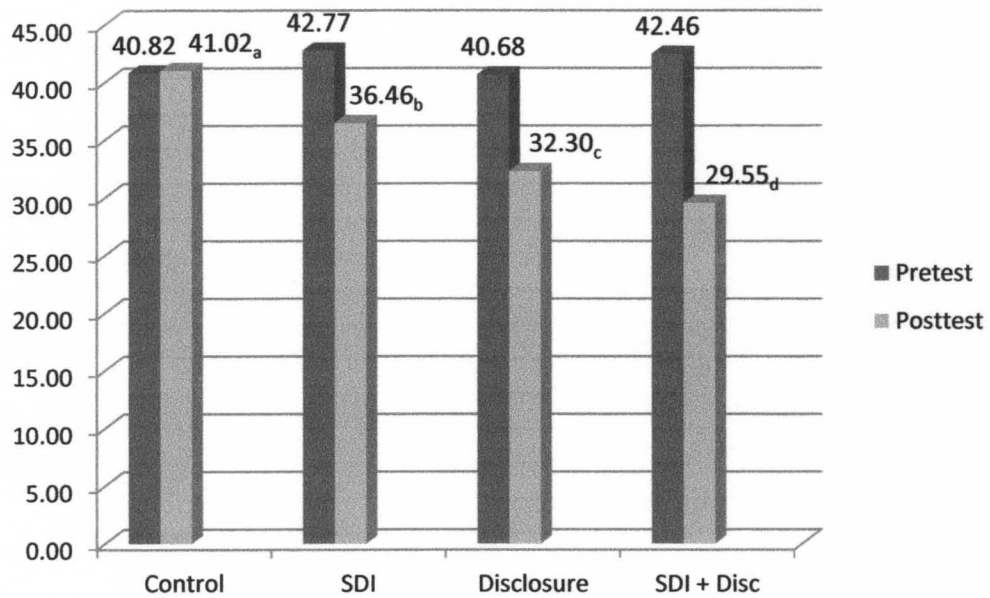
Note. SDI = Stereotype Disconfirming Information Only; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined. Posttest scores were adjusted to control for the covariate (pretest) influence. Means in the same row that do not share subscripts differ significantly.

Figure 16.

Mean posttest scores for Social Distance as a function of information condition and disorder.
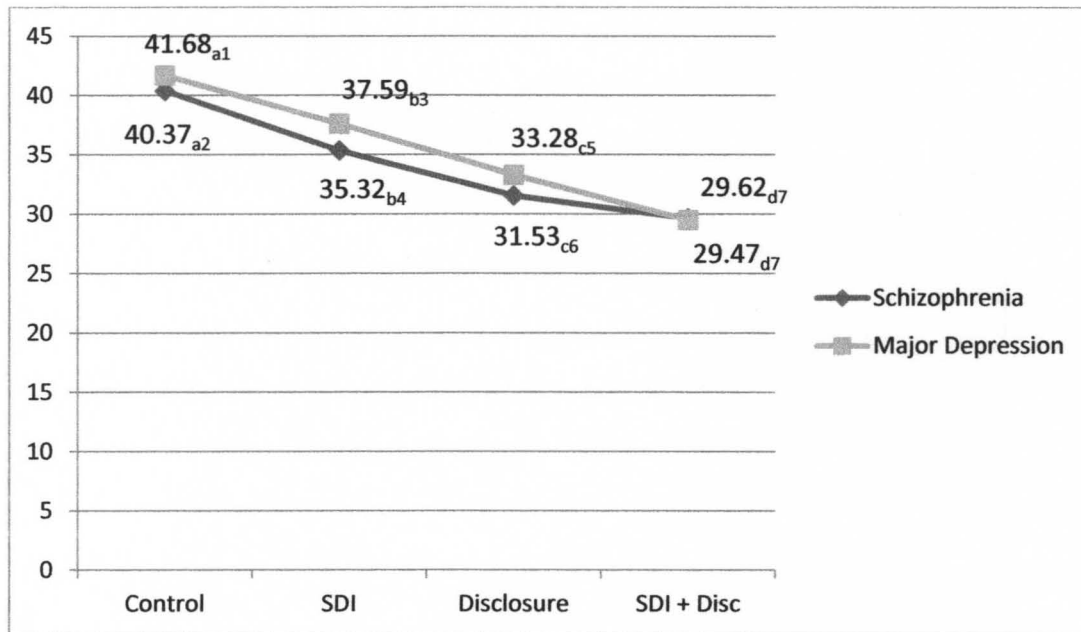
Note. SDI = Stereotype Disconfirming Information Only; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined. Posttest scores were adjusted to control for the covariate (pretest) influence. Means in different information conditions in the same row that do not share alphabetical subscripts (a,b,c,d, etc) differ significantly. Means in different disorder conditions in the same column that do not share numerical subscripts (1, 2, 3, 4, etc) differ significantly.

Hypotheses 3h-6h stated that Disclosure will provide a strong increase in Social Distance when compared to the Control and Stereotype Disconfirming Information while the combined treatment will have the strongest effect compared to the Control, Stereotype Disconfirming Information, and Disclosure. Furthermore it was hypothesized that there will be no difference in these effects between Schizophrenia and major depression. To test these hypotheses, main effects and interaction effects were examined

first via a 2 (Disorder) x 2 (SDI vs. Disclosure) ANOVA with Social Distance pretest scores entered as the covariate.

As shown in Table 20, there was a marginal effect for the Disorder condition, $F(1, 238) = 3.54$, p= .06 for Social Distance. Significant main effects were found for both the Stereotype Disconfirming Information condition, $F(1, 238) = 26.48$, p <.001, and Disclosure condition, $F(3, 238) = 121.61$, p <.001. Descriptive statistics for Social Distance pretest and posttest scores across the four information conditions- control, Stereotype Disconfirming Information, Disclosure, and the Combined group- and the two disorder conditions- Schizophrenia and Depression- are presented in Table 21. Note that a high mean indicates a strong desire for social distance from individuals with SMIs.

Simple contrasts (Figure 15) revealed that the group receiving Stereotype Disconfirming Information experienced a significant decrease in the desire for Social Distance when compared to the Control group. Similarly, the desire for Social Distance was significantly lower in the Disclosure group compared to the Control group and the Stereotype Disconfirming Information group. Ultimately, the desire for Social Distance was the lowest in the combined group compared to the Control group, the Stereotype Disconfirming Information, and the Disclosure group, as predicted. Thus, hypotheses 3h, 4h, and 5h were supported.

Figure 16 illustrates the main effect for disorder on Social Distance posttest scores. Participants who received the Stereotype Disconfirming Information only treatment reported lower desire for Social Distance when compared to the Control group. However, there were significant differences between the participants in the two disorder conditions in both the Stereotype Disconfirming Information and Disclosure conditions.

Participants expressed a lesser desire for Social Distance for individuals with

Schizophrenia and a greater desire for Social Distance towards individuals with

Depression, although both Disorder conditions differed from the Control condition. When

given the Combined treatment, however, participants in both the Schizophrenia and

Depression group were comparable, and reported a lower desire for Social Distance that

was significantly different from the Control group, the Stereotype Disconfirming

Information group and the Disclosure group. This may be due to the link between Prior

Contact and Social Distance posttest scores, which will be highlighted in the discussion

section.

CHAPTER IV:

DISCUSSION

This study investigated the single and combined effects of two stigma reducing strategies, Stereotype Disconfirming Information and Disclosure Information, on an individual's cognitive stigma processes, which involve stereotyping, prejudice, and discrimination, toward a person with schizophrenia and major depressive disorder. The results of this study suggest that Stereotype Disconfirming Information and Disclosure combined often provides a significant additive effect that is more powerful in reducing most components of SMI stigma than the two individual strategies alone. As predicted, the main effects for both Stereotype Disconfirming Information (a form of education), and Disclosure (a form of education with empathy-inducing social contact) were primarily consistent with those found in past research (Boyd et al., 2010; Corrigan et al., 2007a; Finkelstein & Lapshin, 2007, Reinke et al.,2004) as each provided some substantial reduction in stereotype endorsement, emotional reactions, and the desire for social distance. However, not all of our hypotheses concerning the differences between the three strategies were confirmed, and we will discuss these results further by first addressing the results for Empathy and Prior Contact and then by addressing each Information Condition individually.

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Empathy

Although Empathetic Concern was hypothesized to predict Pity and inversely predict Onset Controllability Pessimism, Recovery Pessimism, Violent stereotype endorsement, Unpredictable stereotype endorsement, Fear, Anger, and Social Distance not all of these hypotheses were confirmed for both pretest and posttest scores: hypotheses 1g and 1h were supported, hypotheses 1b, 1c, and 1e were partially supported, and hypotheses 1a, 1d, and 1f were not supported. Empathetic Concern predicted Pity for both pretest and posttest scores and inversely predicted Social Distance pretest and posttest scores, but not Onset Controllability Pessimism, Recovery Pessimism, Violent stereotype endorsement, Unpredictable stereotype endorsement, Fear, Anger. This is consistent with previous findings by Phalen and Basow (2007), that show Empathy is linked to a lesser desire for social distance, however, our results suggest that Empathetic Concern is not necessarily a valid predictor of other forms of SMI stigma, such as negative stereotypes and emotional reactions. Furthermore, Empathetic Concern does not, in this case, consistently predict an individual's susceptibility to stereotype, prejudice, or discrimination changing information or contact. It may be that other traits play a more important role in reducing SMI stereotypes (i.e. Perspective Taking) and emotional reactions (i.e. trust) in interpersonal contexts (Dhont & Van Hiel. 2011; Laurent and Myers, 2011).

Prior Contact

Prior Contact was hypothesized to predict Pity and inversely predict Onset Controllability Pessimism, Recovery Pessimism, Violent stereotype endorsement,

Unpredictable stereotype endorsement, Fear, Anger, and Social Distance. Not all of these hypotheses were confirmed for both pretest and posttest scores; 2e and 2h were supported while 2a, 2b, 2c, 2d, 2f, and 2g were not supported. Prior Contact inversely predicted Fear and Social Distance for pretest and posttest scores, but not Onset Controllability Pessimism, Recovery Pessimism, Violent stereotype endorsement, Unpredictable stereotype endorsement or Anger, nor did it predict Pity. This somewhat contradicts past studies that have shown that Prior Contact (also called *familiarity*) decreases prejudice attitudes, such as the belief that people with mental illnesses are dangerous (Alexander & Link, 2003; Corrigan, Green et al., 2001; Holmes et al., 1999). However, as stated by Link and Basow (2007, p.2896), "...the kind of contact participants have had with mental illness may be more important to consider than the amount." In this case, the participants in this study may have had negative experiences with persons diagnosed with a SMI that have lead them to feel negative emotions toward and endorse negative stereotypes regarding all such individuals.

Stereotype Disconfirming Information

Our predictions that Stereotype Disconfirming Information would be more effective in reducing the endorsement of negative stereotypes when compared to the Control group or Disclosure information was supported for Onset Controllability Pessimism (in the Schizophrenia condition) but not for Recovery Pessimism, Violent stereotype endorsement, and Unpredictable stereotype endorsement.

Our hypotheses predicting that there would be no difference in the effects between disorders, was not confirmed for Onset Controllability Pessimism, as these

scores were significantly lower in the Stereotype Disconfirming Information condition

for Schizophrenia than Depression. Furthermore, Onset Controllability Pessimism

posttest scores for the Depression condition did not differ between the Stereotype

Disconfirming Information condition and the Disclosure condition while the posttest

scores for the Schizophrenia condition did so. Had Depression Onset Controllability

Pessimism posttest scores decreased equally with Schizophrenia Onset Controllability

Pessimism posttest scores in the Stereotype Disconfirming Information condition, this

would not be the case. The lower effectiveness of Stereotype Disconfirming Information

on Onset Controllability posttest scores for Depression compared to Schizophrenia might

be explained by the SDI manipulation itself. Participants in this study displayed

marginally higher pretest Onset Controllability Pessimism in the Depression condition

($M= 4.80$) compared to the Schizophrenia condition ($M= 4.05$), indicating that major

depression was seen as less controllable than schizophrenia. This finding is similar to past

studies that have revealed that individuals with major depression are considered more

responsible for the onset of their disease and its symptoms compared to disorders like

schizophrenia (Dietrich et al., 2004). Stereotype Disconfirming Information scenario in

this study presented major depression as a disease of the brain with no confirmed origin,

rather than explicitly attributing the disorder to a neurological, genetic, or psychosocial

origin. This may have had a confirming effect on participants' stereotypes regarding the

cause of major depression, which may have been primarily attributed to "weak character"

(Hargarty & Golden, 2008) that lacked the capacity to control the onset of symptoms.

Although Onset Controllability Posttest scores did not differ between

Schizophrenia and Depression in the Disclosure condition, it is possible the Disclosure

manipulation revealed personal details that could have been misconstrued as stereotype disconfirming information by the participants. A further review of the manipulation checks shows that 20% of the participants in the Schizophrenia Disclosure group (N=30), for example, reported receiving objective information about Schizophrenia in addition to a personal disclosure of Schizophrenia. In the major depression disclosure group (N=30), 16% of the participants reported receiving objective information about Depression in addition to a personal disclosure of Depression. Further analyses were conducted to eliminate participants who reported receiving objective information about SMI Onset Controllability in the Disclosure condition to rule out the confounding variables within the Disclosure scenario. The results indicated that there were no significant changes regarding Onset Controllability Pessimism across the four Information Conditions and two Disorder conditions once these subjects were removed (See Appendices G and H). Thus, the lack of effectiveness of the Stereotype Disconfirming Information condition on Depression Onset Controllability Pessimism posttest scores was not due an unsuccessful manipulation of Disclosure but rather the inability of Stereotype Disconfirming Information to change Depression Onset Controllability Pessimism. It must be noted that attempting to suppress preconceived attributional beliefs about disorder controllability may not always change strongly held beliefs about the controllability of stigmatized identities (Finell, 2002; Hargarty & Golden, 2008).

Our hypothesis that Stereotype Disconfirming Information would reduce Recovery Pessimism more so than Disclosure also was not supported. Recovery Pessimism posttest scores did not differ between the Stereotype Disconfirming Information condition and the Disclosure condition. One explanation may lie in the

characteristics of the individual portrayed in the Disclosure condition scenario. This experiment included a character with a SMI who is in recovery and is functioning as a socially adept college student trying to live a "normal life" despite the illness. An individual with an SMI who is not hospitalized or dysfunctional may automatically imply that recovery is possible, to a certain extent. Thus, the Disclosure scenario, in itself, may be implicitly incongruent to most SMI stereotypes, even if Stereotype Disconfirming Information is not explicitly stated (cf. Reinke et al., 2004). However, it must be noted that receiving an implicit impression of recovery (i.e. the impression that Pat's medications are working and that he/she can take care of himself/herself) is not the same as receiving explicit information about recovery (i.e. being told by Pat that his/her medications are working and that he/she can take care of himself/herself). By contrast, if the person in the Disclosure condition were to exhibit a small amount of stereotype congruent "strange" behavior (lack of emotional affect, speech clarity, or social skills, etc.) associated with SMIs like schizophrenia or major depression (Penn et al., 2000), then objective Stereotype Disconfirming information might have been more potent in reducing stereotype endorsement than Disclosure.

Further analyses were conducted to eliminate participants who reported receiving objective information in the Disclosure condition, to rule out the confounding variables within the Disclosure scenario. The results indicated that there were no significant changes regarding Recovery Pessimism across the four Information Conditions and two Disorder conditions once these subjects were removed (See Appendices I and J)..

Disclosure

The Disclosure condition was hypothesized to produce a stronger increase in Pity and a stronger reduction in Fear, Anger, and Social Distance compared to Stereotype Disconfirming information. This hypothesis was confirmed for Pity and Social Distance. The finding for Pity is striking but consistent with prior studies (Corrigan et al., 2000;2001; Phalen and Basow, 2007), which may be due to finding that Empathetic Concern significantly predicted participant's level of Pity towards individuals with Schizophrenia and Depression. Prior studies have shown that disclosure can arouse empathy for the discloser (Bohart and Greenburg, 1997) and negate biased attitudes (Hewstone et al., 2006). In this case, these positive feelings are stronger with the Disclosure of intimate details, specifically the diagnosis of their disorder, although an individual with a SMI can induce compassion and the desire to help from their interaction partners when they provide Stereotype Disconfirming Information. Ultimately when the two strategies are combined, even more Pity is produced, which may be explained by the combination of Stereotype Disconfirming Information's unique ability to change certain stereotypes (Onset Controllability) and Disclosure's ability to change certain emotional reactions (Fear).

Although it was hypothesized that Disclosure would provide a lesser level of reduction in stereotype endorsement compared to the Control group than would the Stereotype Disconfirming Information group, it was surprising that Onset Controllability posttest scores for Schizophrenia did not differ between the Disclosure group and the Control group. The ineffectiveness of the Disclosure condition in the Schizophrenia condition might be explained by the lack of onset information in the Schizophrenia Disclosure scenario compared to the Depression Disclosure scenario. In the Depression

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Disclosure scenario, the individual reported feeling sad and losing interest in life after starting college. The onset of depression could be attributed to a combination of homesickness, loneliness and academic stress, which makes the onset seem controllable. The Schizophrenia Disclosure also followed the start of college, but of symptoms like scattered thoughts, mind going blank and hearing voices are not customarily linked to that life transition, so the onset may have seemed less controllable.

Another unexpected find was that there was a marginal difference in Recovery Pessimism posttest scores between the Schizophrenia Disclosure and the Depression Disclosure conditions. Typically, individuals are more likely to be more optimistic about the recovery prospects of an individual with major depression than an individual with schizophrenia (Day et al., 2007), however, this was not the case in this study. It must be noted that there was a strong, positive correlation between Onset Controllability Pessimism and Recovery Pessimism, and this relationship was stronger for Depression (pretest $r = .52$, $p < .01$; posttest $r = .71$, $p < .01$) compared to Schizophrenia (pretest $r = .26$, $p < .01$; posttest $r = .52$, $p < .01$). This suggests that if participants viewed Depression as controllable, but was not due to a "weak character", they also view recovery as unlikely.

Our hypothesis predicting that there would be no difference in the effects between Schizophrenia and Depression was not confirmed for Fear, Anger, or Social Distance. The difference between Fear posttest scores in the Depression condition did not differ between the Control group, the Stereotype Disconfirming Information group, and the Disclosure group, while the posttest scores for Fear in the Schizophrenia condition differed across conditions. This pattern was similar for Anger. It appears that the

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individual information manipulations were more effective on emotions pertaining to Schizophrenia compared to Depression.

For Anger, the explanation may lie in the influence of Prior Contact and Onset Controllability Pessimism. In this experiment, individuals had more experience with Depression than Schizophrenia, therefore, two standard multiple linear regression analyses was conducted with Disorder and Prior Contact entered simultaneously as the IVs and Anger pretest and posttest scores as the DVs. These results did not yield a significant model, indicating that Disorder did not significantly predict Anger pretest scores (β = -.01, t = -.14, p =.88) or posttest scores (β = .07, t = .94, p =.35). Similarly, Prior contact did not significantly predict Anger pretest scores (β = -.81, t = -1.06, p = .29) or posttest scores (β = -.01, t = -.10, p = .92). However, regarding Onset Controllability Pessimism, Depression (M= 4.80, SD= 3.34) was seen as marginally more controllable than Schizophrenia (M= 4.05, SD= 2.71) by the participants in this study. Onset-controllable disorders tend to elicit more anger and hostility (Hegarty and Golden, 2003; Rudolph et al., 2004; Weiner, Perry, and Magnusson, 1988) than those seen as onset-uncontrollable. In this study, Onset Controllability Pessimism predicted Anger in the Depression condition (pretest,r=.22; posttest r = .43) but those variables were only weakly correlated so in the Schizophrenia condition (pretest,r = .11; posttest r = .18).

The Social Distance posttest scores in the Schizophrenia and Depression conditions differed for both the Stereotype Disconfirming Information condition and the Disclosure condition, with the Schizophrenia condition displaying significantly lower Social Distance posttest scores. This will be explained further in the Stereotype Disconfirming Information and Disclosure Combined section below.

Stereotype Disconfirming Information and Disclosure Combined

As noted above, the most important theoretical finding of this research may be that the combination of Stereotype Disconfirming Information and Disclosure was generally stronger than either condition alone, increasing the positive emotion Pity and in reducing Recovery Pessimism, Violent stereotype Endorsement, Unpredictable stereotype endorsement, Fear, Anger, and the desire for Social Distance Furthermore, these combined effects generally were comparable for both Schizophrenia and Depression.

The difference between the Stereotype Disconfirming Information only condition and the Combined condition was not significant for the Onset Controllability Pessimism variable in the Schizophrenia condition. This was due to the ineffectiveness of the Disclosure manipulation to reduce Onset Controllability Pessimism regarding Schizophrenia, which were discussed earlier.

The SDI X Disc interaction effects were significant for Violent and Unpredictable stereotype endorsement due to the relatively weak Combined condition effects. It may be the case that participants could be moved to reduce their perceptions of violence and unpredictability for both Schizophrenia and Depression to some degree, but not completely. Consequently, doubling the amount of information, by providing both Stereotype Disconfirming Information and Disclosure feedback, did not produce double the change of one time of information alone.

Although the Combined treatment provided the greatest increase in Pity, posttest scores were higher in the Depression condition than in the Schizophrenia condition,

which may mean that participants see individuals with Depression as needing their help and compassion more than individuals with Schizophrenia.

Another perplexing find is that Social Distance posttest scores differed significantly between the Schizophrenia and Depression groups in the Stereotype Disconfirming Information and the Disclosure conditions but did not differ difference in the Combined condition. This may be due to the link between Prior Contact and Social Distance. Although Prior Contact inversely predicted pretest Social Distance scores for the Schizophrenia condition ($\beta = -.21$, $t = -1.65$, $p = .10$) and marginally inversely predict posttest scores in the Schizophrenia condition ($\beta = -.19$, $t = -1.47$, $p = .15$), it did not do so for pretest ($\beta = -.1.32$, $t = -1.01$, $p = .32$) or posttest scores ($\beta = -.04$, $t = -.34$, $p = .74$) in the Depression condition. This suggests that contact with someone who has schizophrenia will lessen the desire for social distance from these individuals. However, this is not the case for individuals with Depression. This indicates that individuals desire more social distance from individuals with Depression, perhaps due to the fact that participants had more prior contact experiences with individuals with major depression. Phalen and Basow (2007) also found that Prior Contact (familiarity) with major depression did not decrease the desire for social distance, which they surmised was due to the influence of negative rather than positive contact experiences.

CHAPTER V:

LIMITATIONS AND FUTURE RESEARCH

This study utilizes a convenience sample comprised of college students from various communication and psychology courses. Although questions have been raised about external validity, a student sample was chosen for this study in order to test differences between groups as they are influenced by experimental stimuli, rather than to generalize results to a broader population. It should be noted that college students may be considered a reasonable sample for this study as it concerns mental illness stigma as it occurs within interpersonal relationships. Emerging adulthood is an important developmental life stage and also happens to be when most people begin attending postsecondary education (Arnett, 2000; Dornbusch, 2000; Pratt, 2000). According to a survey conducted by NAMI, mental illness is becoming increasingly common among college populations as one in three students reported "prolonged periods of depression" and one in seven students reported "difficulty functioning at school due to mental illness (NAMI, 2004)." For students with the additional burden of SMIs like major depression or schizophrenia, the stigma surrounding mental illness may hinder the development of interpersonal relationships, which are crucial for a person's successful adjustment when faced demands of college life (Buote eal., 2007). With this note, future studies may still

need to replicate the current study using a variety of populations in order to increase the reliability and generalizability of the results.

In addition to the singular effects of stereotype disconfirming information and self-disclosure on negative stereotype endorsement, prejudice, and social tolerance, this study also addresses the combined effects of these experimental stimuli. However, the order effects of the combined stimuli were not assessed, due to the complexity of the experimental design. We chose to order the combined stimuli with positive stereotype-disconfirming information presented before self-disclosure of the SMI label (schizophrenia or major depression) for this experiment, based upon past impression formation research. Although it has been established that the order in which positive and negative information is presented can have an effect on impressions (with early information having a disproportionate influence compared to later information, thus producing a *primacy* effect), the possibility of a *recency* effect, wherein the opposite occurs, should not be ruled out (Asch, 1946; Crano, 1977; Dennis and Ahn, 2001; Fiske and Neuberg, 1990; Jones, 1990; Luchins & Luchins, 1984; Richter, & Kruglanski, 1998; Steininger & Eisenberg, 1976). Therefore, future research should test the order effects of stereotype disconfirming information and self-disclosure on SMI stigma.

Furthermore, because this study investigates the singular and combined effects of stereotype disconfirming information and self-disclosure, participants in the combined stimulus groups received more information than those in the single stimulus groups. It is possible that the difference in information between groups may account for some of the significant differences between groups. It also should be noted that while the Combined information condition was helpful, there was a diminishing impact. The Combined

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information condition did not produce twice the impact of the separate Stereotype Disconfirming and Disclosure information conditions on Recovery Pessimism, Violent, or Unpredictability, to say nothing of a synergistic, multiplicative effect.

Another important limitation s that this study only attempted to disconfirm a portion of inaccurate stereotypes regarding SMIs, such as onset and recovery symptoms, violence and unpredictability. It did not attempt to alter attitudes, emotions, and behaviors toward accurate descriptions of SMI symptoms during a mental illness episode Interestingly enough, there is a distinct lack of studies that include direct interactions with a person who displays the positive, overt symptoms of SMI when attempting to influence stereotyping, prejudice, and social tolerance. It must be recognized that such studies could be challenging to conduct. Further, although we established that the negative stereotypes regarding the onset of a SMI (Onset Controllability) and the offset of symptoms (Recovery Pessimism) were highly correlated for both Schizophrenia and Depression, we did not address active SMI symptoms as a possible mediator or moderator between the two. In the case of many SMIs, particularly schizophrenia, there is a high risk of remission during most recovery periods (Tandon et al., 2009). Even if Stereotype Disconfirming Information and Disclosure are presented beforehand, it may be that the case that contact with "a flagrantly psychotic, semi-violent person" may "change stigmatizing attitudes or behavior. Rather than disconfirm negative stereotypes, this kind of behavior might reinforce the stigma" and increase the endorsement that individuals with SMIs are incapable of recovering for their illness which may in turn increase the desire for social distance (Reinke et al., 2003, p. 379). Future studies should address whether the separate and combined stigma reducing effects of Stereotype

Disconfirming Information and the Disclosure of an SMI found in this study hold constant after an individual displays overt positive SMI symptoms in the presence of their interaction partners. Otherwise, if an individual with a SMI provides information that disconfirms only inaccurate stereotypes without addressing accurate information regarding their symptoms, they may be misleading their interaction partners. If symptoms become active, this may cause stigmatizing negative attitudes, emotions, and behaviors to develop or return later in the relationship.

Finally, this experiment did not test for the effects of Stereotype Disconfirming Information and the Disclosure of an SMI on other mental conditions, such as anxiety spectrum, autism spectrum or personality disorders. Consequently, the impact of Stereotype Disconfirming Information, Disclosure, and the two strategies combined on stigma concerning those conditions remains unknown.

CHAPTER VI:

CONCLUSION

The present results suggest that greater Empathetic Concern and Prior Contact lessens the desire for Social Distance from individuals with SMIs, but these traits do not seem to affect stereotyping or negative emotional reactions. By contrast, both Stereotype Disconfirming Information and Disclosure are successful in reducing stereotypes, emotional reactions, and the desire for social distance in the context of an interpersonal encounter. Self-disclosure, however, is stronger in increasing pity than stereotype disconfirming information. Ultimately, the combination of Stereotype Disconfirming Information and Disclosure provided the strongest stigma reduction, suggesting that Disclosure can benefit from the addition of objective information. However, our study also suggests that these strategies may have different effects depending on the SMI in question, and the specific stereotype and emotion being targeted. Therefore, future studies should test Stereotype Disconfirming Information, Disclosure, and Stereotype Disconfirming Information and Disclosure combined for their efficacy across various mental disorders and mediators.

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APPENDIX A: EXPERIMENTAL SCENARIOS

Schizophrenia stereotype disconfirming information only:

You've recently become acquainted with Pat, a student from one of your classes. As you've gotten to know Pat better, you realize that you both have a lot in common. You enjoy each other's company and you share the same hobbies. You have gone out for coffee together, and have also seen a couple of movies that you both enjoyed.

One night, you invite Pat to see a stand-up comedian. Everyone in the audience seems to be having fun and the comedian begins making jokes about a person with "schizophrenia". He jokes about the person's "multiple personalities" and how each one is "crazy". Everyone is laughing except Pat, who is clearly sad and is sighing heavily. As you leave the club, you ask what is wrong. Pat is hesitant, but eventually explains:

"'Schizophrenia' doesn't mean someone has 'multiple personalities' like that guy said. That's a completely different thing. Schizophrenia's when someone's

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thoughts are scattered - like, there's not the logical sort of A-to-B train of thought - and they hallucinate. They hear things and see things that others don't."

"But that doesn't make them, you know, violent or unpredictable or anything. With most people with schizophrenia, it pretty much all stays in their head. They keep it to themselves."

Pat shrugs.

"And they basically have to, because there's no cure for it. Schizophrenia's a brain disorder- no really knows what causes it. Could be genetics or trauma. It's not their fault that they have it, but they gotta deal with it, just like diabetes or any other chronic illness. Thing is, actually a lot of people suffer from it but you'd never know because they can keep it under control with anti-psychotic medication and therapy. They can get a job, go to school, get an apartment, you know, live independently like anyone else. It's only a big deal if they don't treat it, you know?"

Schizophrenia self-disclosure only:

You've recently become acquainted with Pat, a student from one of your classes. As you've gotten to know Pat better, you realize that you both have a lot in common. You enjoy each other's company and you share the same hobbies. You

have gone out for coffee together, and have also seen a couple of movies that you both enjoyed.

One night, you invite Pat to see a stand-up comedian. Everyone in the audience seems to be having fun and the comedian begins making jokes about a person with "schizophrenia". He jokes about the person's "multiple personalities" and how each one is "crazy". Everyone is laughing except Pat, who is clearly sad and is sighing heavily. Later as you leave the club you ask what is wrong. Pat is reluctant, but eventually explains:

"I didn't really want to bring this up so soon, but I have schizophrenia."
"It started to really get to me when I was maybe 20. I had just started college. My thoughts would be all scattered, like nothing was connected in there. And my mind would blank out a lot, sometimes for hours. Like when you take a nap and you think you've been asleep for a few minutes but it's really been hours? Yeah, except I was awake the entire time. Also sometimes I'd hear voices in my head when I was alone. I had a tough time at first, you know, keeping up with my classes."
"My parents were really worried so they set me up with a psychiatrist on campus. He put me on anti-psychotic medication and I've been in therapy for, I think, 5 years now. Yeah, I don't really hear voices or anything anymore. No more spacing out either. Plus my grades have been improving because I can focus now. All in all, I'd say I am doing alright."

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1. Schizophrenia stereotype disconfirming information and self-disclosure combined:

   You've recently become acquainted with Pat, a student from one of your classes. As you've gotten to know Pat better, you realize that you both have a lot in common. You enjoy each other's company and you share the same hobbies. You have gone out for coffee together, and have also seen a couple of movies that you both enjoyed.

   One night, you invite Pat to see a stand-up comedian. Everyone in the audience seems to be having fun and the comedian begins making jokes about a person with "schizophrenia". He jokes about the person's "multiple personalities" and how each one is "crazy". Everyone is laughing except Pat, who is clearly sad and is sighing heavily. As you leave the club, you ask what is wrong. Pat is hesitant, but eventually explains:

   "'Schizophrenia' doesn't mean someone has 'multiple personalities' like that guy said. That's a completely different thing. Schizophrenia's when someone's thoughts are scattered - like, there's not the logical sort of A-to-B train of thought - and they hallucinate. They hear things and see things that others don't."

   "But that doesn't make them, you know, violent or unpredictable or anything. With most people with schizophrenia, it pretty much all stays in their head. They keep it to themselves."

Pat shrugs.

"And they basically have to, because there's no cure for it. Schizophrenia's a brain

disorder- no really knows what causes it. Could be genetics or trauma. It's not

their fault that they have it, but they gotta deal with it, just like diabetes or any

other chronic illness. Thing is, actually a lot of people suffer from it but you'd

never know because they can keep it under control with anti-psychotic medication

and therapy. They can get a job, go to school, get an apartment, you know, live

independently like anyone else. It's only a big deal if they don't treat it, you

know?"

Pat sighs.

"I didn't really want to bring this up so soon, but I have schizophrenia."
"It started to really get to me when I was maybe 20. I had just started college. My

thoughts would be all scattered, like nothing was connected in there. And my

mind would blank out a lot, sometimes for hours. Like when you take a nap and

you think you've been asleep for a few minutes but it's really been hours? Yeah,

except I was awake the entire time. Also sometimes I'd hear voices in my head

when I was alone. I had a tough time at first, you know, keeping up with my

classes."
"My parents were really worried so they set me up with a psychiatrist on campus.

He put me on anti-psychotic medication and I've been in therapy for, I think, 5

years now. Yeah, I don't really hear voices or anything anymore. No more

spacing out either. Plus my grades have been improving because I can focus now. All in all, I'd say I am doing alright."

2. Depression stereotype disconfirming information only:

You've recently become acquainted with Pat, a student from one of your classes. As you've gotten to know Pat better, you realize that you both have a lot in common. You enjoy each other's company and you share the same hobbies. You have gone out for coffee together, and have also seen a couple of movies that you both enjoyed.

One night, you invite Pat to see a stand-up comedian. Everyone seems to be having fun and the comedian begins making jokes about a person with "depression". He says "Why did the depressed person finish their autobiography? So they could get to the end of their life!" Everyone is laughing except Pat, who is clearly sad and is sighing heavily. As you leave the club, you ask what is wrong. Pat is hesitant, but eventually explains:

"Depression' doesn't mean that people are obsessed with death like that guy said. Depression's when people have really intense sadness and they stop enjoying things they used to love, like their hobbies. Sometimes they are suicidal but that's only in extreme cases."

"But that doesn't make them, you know, violent or unpredictable or anything. With most people with depression, it pretty much all stays in their head. They keep it to themselves."

Pat shrugs.

"And they basically have to, because there's no cure for it. Depression's a brain disorder – no really knows what causes it. Could be genetics or trauma. It's not their fault they have it, but they gotta deal with it, just like diabetes or any other chronic illness. Thing is, actually a lot of people suffer from depression but you'd never know because they can keep it under control with anti-depressant medication and therapy. They can get a job, go to school, get an apartment, you know, live independently like anyone else. It's only a big deal if they don't treat it, you know?"

3. Depression self-disclosure only:

You've recently become acquainted with Pat, a student from one of your classes. As you've gotten to know Pat better, you realize that you both have a lot in common. You enjoy each other's company and you share the same hobbies. You have gone out for coffee together, and have also seen a couple of movies that you both enjoyed.

One night, you invite Pat to see a stand-up comedian. Everyone seems to be having fun and the comedian begins making jokes about a person with "depression". He says "Why did the depressed person finish their autobiography? So they could get to the end of their life!" Everyone is laughing except Pat, who is clearly sad and is sighing heavily. You ask what is wrong. Pat is reluctant, but eventually explains:

"I didn't really want to bring this up so soon, but I have major depression."

"It started to really get to me when I was maybe 20. I had just started college. I felt sad all the time and lost interest in everything, like nothing was fun anymore. And I'd sleep all day and not notice the passing of time. Like when you take a nap and you think you've been asleep for a few minutes but it's really been hours? Yeah, except this was me every day. Also sometimes I would think about suicide when I was alone. I had a tough time at first, you know, keeping up with my classes."

"My parents were really worried so they set me up with a psychiatrist on campus. He put me on anti-depressant medication and I've been in therapy for, I think, 5 years now. Yeah, I don't really feel sad or think about suicide anymore. No more sleeping all day either. My grades have been improving because I can focus now. All in all, I'd say I am doing alright."

4. Depression stereotype disconfirming information and self-disclosure combined:

You've recently become acquainted with Pat, a student from one of your classes. As you've gotten to know Pat better, you realize that you both have a lot in

common. You enjoy each other's company and you share the same hobbies. You have gone out for coffee together, and have also seen a couple of movies that you both enjoyed.

One night, you invite Pat to see a stand-up comedian. Everyone seems to be having fun and the comedian begins making jokes about a person with "depression". He says "Why did the depressed person finish their autobiography? So they could get to the end of their life!" Everyone is laughing except Pat, who is clearly sad and is sighing heavily. As you leave the club, you ask what is wrong. Pat is hesitant, but eventually explains:

"Depression' doesn't mean that people are obsessed with death like that guy said. Depression's when people have really intense sadness and they stop enjoying things they used to love, like their hobbies. Sometimes they are suicidal but that's only in extreme cases."

"But that doesn't make them, you know, violent or unpredictable or anything. With most people with depression, it pretty much all stays in their head. They keep it to themselves."

Pat shrugs.

"And they basically have to, because there's no cure for it. Depression's a brain disorder – no really knows what causes it. Could be genetics or trauma. It's not

their fault they have it, but they gotta deal with it, just like diabetes or any other chronic illness. Thing is, actually a lot of people suffer from depression but you'd never know because they can keep it under control with anti-depressant medication and therapy. They can get a job, go to school, get an apartment, you know, live independently like anyone else. It's only a big deal if they don't treat it, you know?"

Pat sighs.

"I didn't really want to bring this up so soon, but I have major depression."

"It started to really get to me when I was maybe 20. I had just started college. I felt sad all the time and lost interest in everything, like nothing was fun anymore. And I'd sleep all day and not notice the passing of time. Like when you take a nap and you think you've been asleep for a few minutes but it's really been hours? Yeah, except this was me every day. Also sometimes I would think about suicide when I was alone. I had a tough time at first, you know, keeping up with my classes."

"My parents were really worried so they set me up with a psychiatrist on campus. He put me on anti-depressant medication and I've been in therapy for, I think, 5 years now. Yeah, I don't really feel sad or think about suicide anymore. No more sleeping all day either. My grades have been improving because I can focus now. All in all, I'd say I am doing alright."

5. Control

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You've recently become acquainted with Pat, a student from one of your classes. As you've gotten to know Pat better, you realize that you both have a lot in common. You enjoy each other's company and you share the same hobbies. You have gone out for coffee together, and have also seen a couple of movies that you both enjoyed.

One night, you invite Pat to see a stand-up comedian. Everyone seems to be having fun and the comedian begins making jokes about his trip to a doctor's office. He says "The other day my doctor told me that I have an anxiety disorder, so I say 'I want a second opinion'. He said 'Okay, you're ugly too.'" Everyone is laughing except Pat, who is clearly distracted and is sighing heavily. As you leave the club, you ask what is wrong. Pat is hesitant, but eventually explains:

"I didn't really want to bring this up, but I have been stressed out all week."

"It started to really get to me during spring break. I have this huge project that's due in a few days and I've been working on it for, I dunno, weeks. I feel frazzled all the time, you know? I can't really focus and everything sort of bugs me. And I can't really sleep at night because I am too worried about failing. Like when I try to nap all I think about is that project. I'm having a tough time, you know, keeping up with my other classes."

"My parents were really worried about me so they set me up with a psychiatrist. He said I don't have an anxiety disorder so he sent me to a stress management group. We meet every week and we do things like exercise and meditate and talk about stress-reducing techniques. I think I'll be okay once I turn in the paper. Then I can relax.

APPENDIX B.

Intercorrelations Among DV Pretest scores for Schizophrenia only.

	EC	PC	OCP	RP	V	UP	F	A	P
PC	.01								
OCP	-.04	.01							
RP	-.06	-.01	.26**						
V	-.11	-.11	.07	.24**					
UP	-.01	-.00	.18*	.11	.22**				
F	-.07	-.24**	.09	.29**	.05	.25**			
A	-.03	-.18*	.11	.01	.01	.07	.15		
P	.43**	-.08	.01	.01	.55	-.06	-.11	-.21**	
SocDist	-.13	-.12	.05	.07	.05	.16	.25**	.28**	-.11

Note. N= 240. EC = Empathetic Concern; PC = Prior Contact; OCP = Onset Controllability
Pessimism; RP = Recovery Pessimism; V = Violent Stereotype Endorsement; UP =
Unpredictable; F = Fear; A= Anger; P = Pity; SocDist = Social Distance. Empathetic Concern
and Prior Contact were pretest measures only.
*p <.05
**p <.01

APPENDIX C.

Intercorrelations among DV Posttest scores for Schizophrenia only.

	EC	PC	OCP	RP	V	UP	F	A	P
PC	.07								
OCP	-.04	.19**							
RP	-.06	-.02	.52**						
V	-.13*	-.07	.43**	.57**					
UP	-.06	-.11	.34**	.48**	.20**				
F	-.03	-.32**	.29**	.46**	.47**	.58**			
A	-.12	-.06	.18*	.38**	.40**	.18**	.47**		
P	.43**	.06	-.06	-.14	-.24**	-.21*	-.48**	-.38**	
SocDist	-.17**	-.19	.07	.23*	.34**	.37**	.42**	.35**	-.37**

Note. N= 240. EC = Empathetic Concern; PC = Prior Contact; OCP = Onset Controllability Pessimism; RP = Recovery Pessimism; V = Violent Stereotype Endorsement; UP = Unpredictable; F = Fear; A= Anger; P = Pity; SocDist = Social Distance. Empathetic Concern and Prior Contact were pretest measures only.
*p <.05
**p <.01

APPENDIX D.

Intercorrelations Among DV Pretest scores for Major Depression.

	EC	PC	OCP	RP	V	UP	F	A	P
PC	.07								
OCP	-.21*	.23*							
RP	-.23*	.11	.34**						
V	-.16	.08	.07	.36**					
UP	-.18*	-.21*	.01	.11	.17				
F	-.18	-.15*	.02	.28**	.08	.01			
A	-.21*	-.04	.22**	.20*	.02	.15	.33**		
P	.36**	-.04	-.11	.15	-.10	-.09	-.27**	-.35**	
SocDist	-.22*	-.12	.00	.09	.10	.71	.18*	.17	-.84

Note. N= 240. EC = Empathetic Concern; PC = Prior Contact; OCP = Onset Controllability
Pessimism; RP = Recovery Pessimism; V = Violent Stereotype Endorsement; UP =
Unpredictable; F = Fear; A= Anger; P = Pity; SocDist = Social Distance. Empathetic Concern
and Prior Contact were pretest measures only.
*p <.05
**p <.01

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APPENDIX E.

Intercorrelations Among DV Posttest scores for Major Depression.

	EC	PC	OCP	RP	V	UP	F	A	P
PC	.07								
OCP	-.21*	.23*							
RP	-.23*	.11	.71**						
V	-.16	.08	.46**	.56**					
UP	-.18*	-.21*	.41**	.55**	.20**				
F	-.18	-.15*	.32**	.44**	.23**	.36**			
A	-.21*	-.04	.43**	.35**	.36**	.38**	.33**		
P	.36**	-.21	-.34**	-.32**	-.27**	-.42**	-.21**	-.24**	
SocDist	.22*	-.04	.35**	.36**	.36**	.38**	.40**	.33**	-.33**

Note. N= 240. EC = Empathetic Concern; PC = Prior Contact; OCP = Onset Controllability Pessimism; RP = Recovery Pessimism; V = Violent Stereotype Endorsement; UP = Unpredictable; F = Fear; A= Anger; P = Pity; SocDist = Social Distance. Empathetic Concern and Prior Contact were pretest measures only.
*p <.05
**p <.01

APPENDIX F.

Gender, race, and age effects.

The results of a one-way ANOVA revealed no significant differences between male and female participants in terms of Recovery Pessimism pretest scores, $F(3, 238)$ = 1.40, p= .24, Violent pretest scores, F(3, 236) = .46, p= .50, Fear pretest scores, $F(3, 238)$ = .13, p= .72, Anger pretest scores, $F(3, 238)$ = .78, p= .48, Pity pretest scores $F(3, 238)$ = .09, p= .76, and Social Distance pretest scores $F(3, 238)$ = .21, p= .65. Although not significant at the p <.05 level, showed a trend toward a gender difference, $F(3, 238)$ = 2.70, p= .10. Males (M= 4.80 SD= 3.22) reported higher levels of Onset Controllability Pessimism than females (M= 4.20 SD= 2.94).

There were no significant differences between the different race and ethnic groups in terms of Onset Controllability Pessimism pretest scores, $F(5, 238)$ = .81, p= .55, Recovery Pessimism pretest scores, $F(5, 238)$ = .75, p= .59, Violent pretest scores, F(5, 236) = .1.04, p= .39, Unpredictable pretest scores $F(5, 238)$ = .1.23, p= .30, Anger pretest scores, $F(3, 238)$ = 1.06, p= .38, Pity pretest scores $F(5, 238)$ = .09, p= .76, and Social Distance pretest scores $F(5, 238)$ = .21, p= .65. However, there was a significant difference between the groups for Fear pretest scores, $F(5, 238)$ = 3.04, p <.01 with Asian participants (M= 16.86 SD= 3.89) reporting the highest level of fear and African American participants reporting the lowest level of fear (M= 11.17 SD= 4.06).

There were no significant differences between the different age groups in terms of Onset Controllability Pessimism pretest scores, $F(9, 238)$ = 1.09, p= .37, Anger pretest scores, $F(9, 238)$ = 1.50, p= .16, and Social Distance pretest scores $F(9, 238)$ = 1.30, p=

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.250. However, there was a marginal trend for Recovery Pessimism pretest scores, $F(3, 238) = 1.58$, p= .12, Violent stereotype endorsement pretest scores, $F(3, 236) = 1.58$, p= .12, Unpredictable stereotype endorsement pretest scores $F(3, 238) = .1.38$, p= .12, Fear pretest scores, $F(3, 238) = 1.87$, p =.06, and Pity pretest scores $F(3, 238) = 1.76$, p= .08. Participants aged 26-29 reported the highest Recovery Pessimism (M= 14.0, SD= 6.43) while participants aged 42-45 reported the lowest (M= 5.00, SD= 1.00). In terms of Violent stereotype endorsement, participants aged 26-29 ranked the highest (M= 3.91, SD= 2.30) while participants aged 22-25 had the ranked lowest (M= 3.30, SD= 1.75). Participants aged 38-41 had the highest Unpredictable stereotype endorsement (M= 4.67, SD= 1.53) 22-25 had the lowest. Participants aged 26-29 (M= 15.45, SD= 4.94) reported the highest levels of Fear and participants aged 30-33 (M= 10.50, SD= 1.53) had the lowest levels of Fear. Pity was highest for participants aged 30-33 (M= 10.50, SD= 1.53) and lowest for participants aged 38-41 (M= 17.00, SD= 3.60).
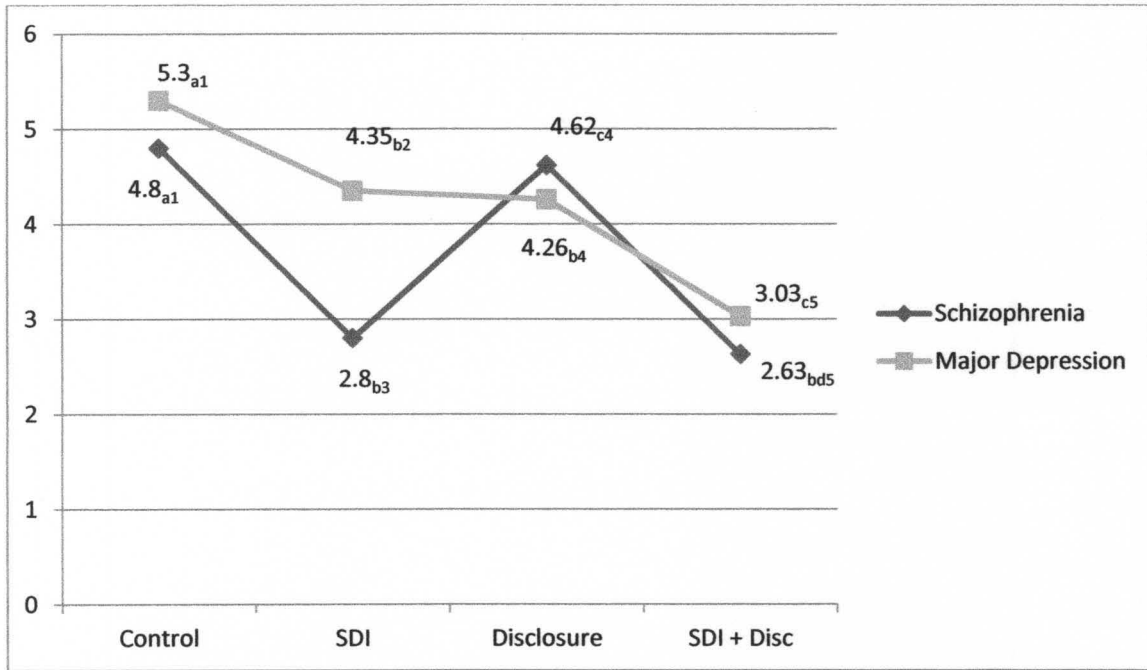
APPENDIX G:

ANOVA for the Effects of Disorder, Stereotype Disconfirming Information and

Disclosure on Onset Controllability Pessimism after subject removal.

Measure	Condition	SS	MS	df	F	p	η^2
Onset Controllability Pessimism							
	Pretest	251.01	1	251.01	51.37	.00	.20
	Disorder	2.02	1	2.02	.41	.52	.00
	SDI	112.00	1	112.00	22.92	.00	.10
	Disclosure	23.08	1	23.08	4.72	.03	.02
	SDI X Disorder	5.08	1	5.08	1.04	.31	.00
	Disc X Disorder	15.73	1	15.73	3.22	.07	.01
	Disc SDI X	.92	1	.92	.19	.66	.00
	SDI X Disc X Disorder	.30	1	.30	.06	.80	.00

Note. Subjects who failed the manipulation checks were removed prior to analysis. SDI = Stereotype Disconfirming Information; Disc = Disclosure; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined. * Indicates a significant correlation between pretest scores and posttest scores.

APPENDIX H.

Mean posttest scores for Onset Controllability Pessimism as a function of information condition and disorder.

Note. Subjects who failed the manipulation checks were removed prior to analysis. SDI = Stereotype Disconfirming Information Only; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined. Posttest scores were adjusted to control for the covariate (pretest) influence. Means in different information conditions in the same row that do not share alphabetical subscripts (a,b,c,d, etc) differ significantly. Means in different disorder conditions in the same column that do not share numerical subscripts (1, 2, 3, 4, etc) differ significant.

ANOVA for the Effects of Disorder, Stereotype Disconfirming Information and

Disclosure on Recovery Pessimism after Subject Removal.

Measure	Condition	SS	MS	df	F	p	η^2
Recovery Pessimism							
	Pretest	1127.52	1	1127.52	96.06	.00	.32
	Disorder	404.15	1	404.15	34.43	.00	.14
	SDI	263.35	1	263.35	22.44	.00	.10
	Disclosure	2.03	1	2.03	.17	.68	.00
	SDI X Disorder	7.95	1	7.95	.68	.41	.00
	Disc X Disorder	7.36	1	7.36	.63	.43	.00
	SDI X Disc	.59	1	.59	.05	.82	.00
	SDI X Disc X Disorder	3.25	1	3.25	.28	.60	.00

Note. Subjects who failed the manipulation checks were removed prior to analysis. SDI = Stereotype Disconfirming Information Only; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined.* Indicates a significant correlation between pretest scores and posttest scores. Subjects who failed the manipulation checks were removed.

APPENDIX J.

Mean posttest scores for Recovery Pessimism as a function of information condition and

disorder after subject removal.
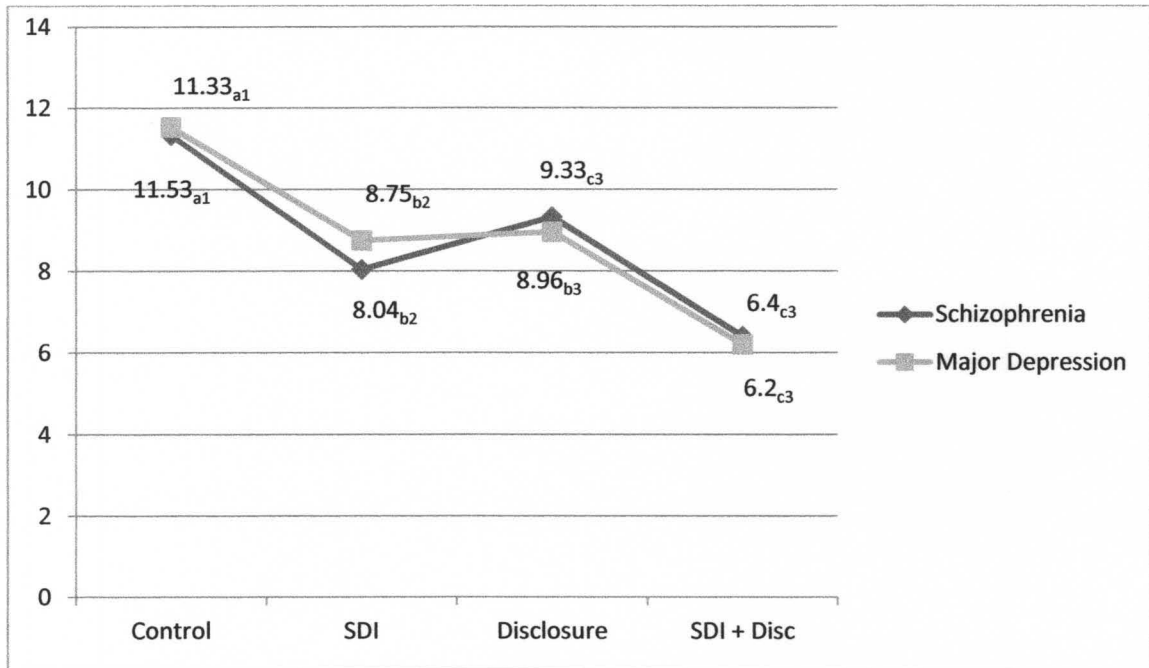
Note. Subjects who failed the manipulation checks were removed prior to analysis. SDI = Stereotype Disconfirming Information Only; SDI + Disc = Stereotype Disconfirming Information and Disclosure combined. Posttest scores were adjusted to control for the covariate (pretest) influence. Means in different information conditions in the same row that do not share alphabetical subscripts (a,b,c,d, etc) differ significantly. Means in different disorder conditions in the same column that do not share numerical subscripts (1, 2, 3, 4, etc) differ significantly.

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