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Stereotypes of mental disorders differ in competence and warmth

Melody S. Sadler*, Elizabeth L. Meagor, Kimberly E. Kaye

San Diego State University, Department of Psychology, 5500 Campanile Drive, San Diego, CA 92182, United States

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ABSTRACT

Theoretical models of public stigma toward mental illness have focused on factors that perpetuate stigma toward the general label of "mental illness" or toward a handful of specific illnesses, used more or less interchangeably. The current work used the Stereotype Content Model (Fiske, Cuddy, Glick, & Xu, 2002) to examine how one facet of public stigma – stereotype content – differs as a function of specific mental illnesses. Participants were recruited online from across the U.S. Study 1 demonstrated that the overarching category of people with mental illness was perceived as relatively incompetent, but not very hostile (i.e., relatively warm). Study 2 found that when the general label of mental illness was separated into thirteen individual disorders, distinct stereotype content toward four clusters of illnesses emerged. One cluster, typified by illnesses with psychotic features (e.g., schizophrenia), was perceived to be hostile and incompetent. A second cluster, comprised of mood and anxiety disorders, was perceived as average on both competence and warmth. A third cluster of illnesses with neuro-cognitive deficits was thought to be warm but incompetent. The fourth cluster included groups with sociopathic tendencies and was viewed as hostile but relatively competent. The results clearly demonstrate that the stereotype content that underlies public stigma toward individual mental illnesses is not the same for all disorders. Harnessing knowledge of differing stereotype content toward clusters of mental illnesses may improve the efficacy of interventions to counteract public stigma.

Introduction

Roughly 26% of Americans suffer from a mental illness (Kessler, Chiu, Demler, & Walters, 2005), as do more than 450 million people worldwide (World Health Organization, 2010). In addition, the stigmatization of people with mental illness (MI) by the lay public is widespread, having been documented across countries and continents (Angermeyer, Buyantugs, Kenzine, & Matschinger, 2004; Kurihara, Kato, Reverger, & Tirta, 2005). The detrimental impact of the public stigma of people with mental illness cannot be overstated. Stigma of MI can result in those suffering from a disorder being marginalized and denied basic rights such as housing and employment (Link, 1987; Page, 1995), leading people with a mental illness to perceive more barriers to functioning due to stigma than to the illness itself (Corrigan, 2004a; Feldman & Crandall, 2007).

Attempts to reduce public stigma and discrimination toward people with MI include protest, education and/or contact with affected individuals (Corrigan, 2004b; Corrigan, 2005; Corrigan & Shapiro, 2010; Corrigan & Watson, 2004). The current work seeks to expand understanding of the stereotype content associated with distinct mental illnesses in order to lay the foundation for interventions that may address stigma to specific, or related sets of mental disorders. Our approach follows the seminal work conducted by Corrigan et al. (Corrigan, 2000; Corrigan, Markowitz, Watson, Rowan, & Kubiak, 2003; Corrigan & Penn, 1999; Corrigan & Penn, 1999) who adopted a social psychological perspective to investigate the stigma of mental illness. More specifically, we examine the viability of the Stereotype Content Model (SCM; Fiske et al., 2002) for the study of the stigma of MI. We suggest that the SCM may add to the literature by predicting systematic differences in nature of three components of stigma – stereotypes, emotional prejudice, and discriminatory behaviors – by specific mental disorder. For example, if it is the case that people with schizophrenia are viewed as less competent than people with major depressive disorder (major depressive disorder), then it seems reasonable to suggest people with schizophrenia may experience more difficulty in gaining employment than people with major depressive disorder. Although the ultimate goal of our work is to adapt a conceptual framework to the reduction of stigma of mental illness, the current work provides the initial step to evaluate if the stereotype content toward people with varying disorders differs in predictable ways.

* Corresponding author. Tel.: +1 619 594 1580.
E-mail address: msadler@sciences.sdsu.edu (M.S. Sadler).

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Stereotype content model

The Stereotype Content Model (SCM; Fiske et al., 2002) is a theoretical framework used in social psychology to predict systematic variation in stereotypes, emotional prejudice, and discrimination toward varied social groups. The model was developed in part as an explanation for why some groups elicit general antipathy whereas other groups elicit ambivalent stereotypes and attitudes (Cuddy, Fiske, & Glick, 2004, 2005; Lin, Kwan, Cheung, & Fiske, 2005).

Two fundamental dimensions of social judgment, warmth and competence, have pervaded the social perception literature for several decades (for a review, see Fiske, Cuddy, & Glick, 2007). The SCM posits that warmth and competence perceptions underlie systematic differences in stereotype content between social groups. Warmth refers to the perceived intentions of a group, i.e., whether the group has malevolent or beneficent inclinations toward one's self or one's ingroup. Competence refers to the capability of a group to perform or enact their goals. The stereotype content for a group emanates from the conjunction of their perceived warmth and competence. Univalent negative stereotypes are associated with groups perceived as low on both warmth and competence. Within the U.S., homeless people, welfare recipients, and migrant workers are examples of groups that fall into the low warmth and low competence cluster (Fiske et al., 2002). Ambivalent stereotypes can take one of two forms with the SCM. First, there are ambivalent stereotypes from the combination of low warmth but high competence. Typical groups within this cluster are rich people, feminists, and sometimes, Jews. Second, there are ambivalent stereotypes generated from the combination of high warmth and low competence. Examples of social groups from this cluster are the elderly, people who are disabled, and housewives. Finally, there is a univalent positive stereotype cluster emanating from concurrent high warmth and high competence. The social groups comprising this cluster are generally ingroups of the perceiver or normative groups within society such as Whites, Christians, and the middle class. Cross-cultural studies have replicated the ability of the SCM to predict groups toward whom there are uniformly negative versus ambivalent stereotypes (Cuddy et al., 2009).

Subgroup stereotype content

Research has demonstrated that in addition to distinguishing between social groups based on distinct factors (e.g., race, religious affiliation), the SCM can also distinguish stereotypes toward subgroups of a social group. In the initial work on the SCM (Fiske et al., 2002), the researchers noted that perceptions of Blacks depended on which subgroup was rated. For example, 'poor Blacks' were subsumed in the low warmth-low competence cluster whereas 'Black professionals' were in the high warmth-high competence cluster. Subsequent research has shown that the dimensions of competence and warmth explain variation in the perception of subgroups within each gender (Eckes, 2002), of gay men (Clausell & Fiske, 2005), and based on immigrant nationality (Lee & Fiske, 2006). The current work examines if the SCM can be extended to perceptions of subgroups of people with mental disorders, such as schizophrenia and major depressive disorder.

Stigma of mental illness research consistent with model dimensions

There is considerable overlap in the fundamental dimensions assumed by the SCM and key constructs examined in research on stigma of mental illness. First, the ubiquitously studied perception of danger to others posed by people with mental illness (Corrigan et al., 2003; Link, 1987; Martin, Pescosolido, & Tuch, 2000; Phelan, Link, Stueve, & Pescosolido, 2000) can reasonably be conceptualized as a lack of warmth according to the SCM. In fact, the warmth dimension initially included 'trustworthy' and 'well-intentioned' to represent the potential for outgroup hostility (Fiske et al., 2002). The link between perceived danger and preferred social distance from people with mental illness has persevered over time despite an increase in attributing the cause of mental illness to genetic or biological factors rather than one's bad character (Pescosolido et al., 2010). Second, studies on the perceived dependency or inability of people with mental illness to make appropriate decisions (Angermeyer & Matschinger, 2003; Pescosolido, Monahan, Link, Stueve, & Kikuzawa, 1999) may be understood as a lack of competence.

Danger or (lack of) warmth

The association between danger and mental illness has a long history within the literature on stigma of mental illness. Comparing trends from the National Opinion Research Center study in 1950 and the Mental Health Module of the General Social Survey in 1996 in the U.S., Phelan et al. found that mentions of violence as a central characteristic of mental disorders increased in open-ended responses to a probe about the definition of mental illness (Phelan, Link, Moore, & Steuve, 1997). The higher incidence of references to violence in such definitions may be due in part to changes in the civil commitment laws as evidenced by references to civil code verbiage of a person with mental illness posing '…harm to self or others' (Phelan & Link, 1998). Interestingly, the increase in lay beliefs that people with mental illness are prone to aggressive acts was evidenced despite a concurrent broadening of the definition of mental illness (Phelan et al., 2000).

Nationally representative surveys conducted in several Western countries further suggest that the extent to which people with mental illness are perceived to be dangerous may vary by particular mental disorder. In the U.S., perceived prevalence rates of the danger posed by people with schizophrenia, major depressive disorder, alcohol dependence, and drug dependence (cocaine) were assessed in the MacArthur Mental Health Module of the General Social Survey. Results showed that the public perceived the highest potential for violence toward others from a person described to have drug dependence, alcohol dependence, schizophrenia, and major depressive disorder in descending order (Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999; Pescosolido et al., 1999). In the UK, Crisp, Gelder, Rix, Meltzer, and Rowlands (2000) examined perceived danger of the aforementioned groups plus people with dementia, panic attacks, and eating disorders. While 65%–74% of respondents believed people with addictions or schizophrenia to be violent, less than 25% believed people with major depressive disorder, dementia, panic attacks or eating disorders to be violent. On balance, the literature to date clearly suggests that the majority of the public does not view people with varying mental disorders as equally likely to become aggressive toward others. Instead, people with addictions and schizophrenia are seen as more prone to violence than people with most other disorders.

(In)competence

Far fewer studies have examined differences in perceived competency across mental disorders, however, the extant literature again supports that there may be systematic variation in the way people with different mental disorders are perceived on this dimension. For example, perceivers who identify a person in a vignette as having schizophrenia stereotype him/her as more dependent, whereas those who identify a person as having major

depressive disorder evidence no difference in perceived dependence (Angermeyer & Matschinger, 2003). In contrast, other research has found that people with major depressive disorder are perceived as less competent than people with anorexia nervosa or bulimia (Roehrig & McLean, 2009). Moreover, in the 1996 General Social Survey, perceivers rated whether or not people with a mental illness were capable of making treatment and financial decisions (Pescosolido et al., 1999). There were marked differences in perceptions by mental disorder. Across both measures, people with drug dependence (82%) and schizophrenia (72%) were seen as least able to make appropriate decisions, followed by people with alcohol dependence (56%) and major depressive disorder (33%). Thus, across dimensions similar to competence, it appears that there are systematic differences in the way people with particular mental illnesses are viewed.

Current research

The current research examined the viability of the SCM (Fiske et al., 2002) for the study of the stigma of mental illness in two studies. In Study 1, we investigated how the overarching label "people with mental illness" was perceived on competence and warmth relative to other social groups (e.g., women, Blacks, Jews). In Study 2, we examined if stereotypes of people with a variety of specific mental illnesses differ on competence and warmth, as well as the social structural variables of status and competition. We suggest that if the SCM successfully differentiates stereotype content by particular disorder, or groups of disorders, then its adoption may lay the groundwork for tailored interventions to reduce stigma and discrimination toward people with MI.

Study 1

Study 1 examined where the social group "people with mental illness" would be positioned within the existing SCM framework. We expected that the overall group of people with mental illness would be seen as relatively low in competence, given that mental disorders by definition include disruptions to "normal" functioning (American Psychiatric Association, 2000). Predictions for perceived warmth of people with mental illness were less clear. Although danger is often assumed to be stereotypic of people with mental illness (Corrigan et al., 2003; Link, 1987; Martin et al., 2000; Phelan et al., 2000), it is also possible that such perceived threat may be restricted to people with psychoses. If the generic label of mental illness reflects an aggregation of people with psychoses and people with other disorders (e.g. people with anxiety disorders), then warmth ratings may essentially average across subgroups and fall in the middle of the warmth dimension.

Methods

Participants

Sixty-one participants (34 women; age: $M = 34.8$, SD = 12.5) were recruited in 2011 from the United States (South: 48%; Midwest: 20%; West; 16%; Northeast: 15%) through Mechanical Turk (Mturk), an online forum sponsored by Amazon where interested people can complete surveys in exchange for payment. MTurk samples are more diverse than college samples and other Internet samples, while providing data of high quality (Buhrmester, Kwang, & Gosling, 2011). The majority of the sample was Caucasian (85.2%), Christian (63.9%), with either some college education or a college degree (68.8%). Participants were paid 15 cents which was based on the typical rate of 1 cent per minute offered on the Mturk website. Participants provided informed consent prior to study participation. The study was approved by the Institutional Review Board at San Diego State University.

Materials and procedure

The questionnaire presented social groups, most of which were used in the original SCM studies (Fiske et al., 2002). We added "people with mental illness" to the list of rated groups and changed the labels of 2 others to mirror this wording (i.e., "people with mental retardation" and "people with physical disabilities"). We also added "Filipinos" to make an even number of groups overall; the resulting 26 groups were randomly divided into two lists of 13 groups. Each participant was randomly assigned to respond to one of the lists. Each group was rated on 4 warmth (warm, friendly, good-natured, and honest) and 4 competence (were competent, intelligent, skilled, and capable) items frequently used in SCM research (Caprariello, Cuddy, & Fiske, 2009; Cuddy et al., 2004, 2005; Eckes, 2002; Fiske et al., 2002).

Participants were directed from Mturk to the survey created using Qualtrics Labs, Inc. survey software (2009). Participants provided ratings of the 13 groups they received on the 4 competence and 4 warmth items based on how the groups were viewed by "Americans in general", a technique used in SCM research to reduce socially desirable response bias. An example warmth item was: "In general, how much do Americans believe that [people with mental illness] are friendly?" Ratings were made on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*extremely*). The reliability of the competence and warmth dimensions were high when averaged across groups (both alphas were .86), and across participants (warmth alpha .84 and competence alpha .81). Social groups, and items within groups, were presented in a random order per participant.

Results

Our analytic approach followed that of Fiske et al. (2002). We examined how each social group was perceived on the conjunction of competence and warmth by conducting a two-step cluster analysis. The advantage of cluster analysis is its ability to evaluate commonalities across many social groups within a multidimensional framework. In order to determine the number of clusters that best fit the current data, hierarchical cluster analysis was done using Ward's method. Next, we used the *k*-means method which partitions groups into clusters based on similar means to assign social groups to clusters (Blashfield & Aldenderfer, 1988).

As in previous research, results suggested a five-cluster solution with each cluster containing distinct stereotype content confirmed by significance tests (see Table in Supplementary Data). Our focus, however, was on the placement of "people with mental illness" within this cluster structure. The cluster including people with mental illness was located within the low warmth and low competence quadrant of the SCM (competence: $M = 1.92$; warmth: $M = 2.47$), and also included people who are homeless, poor, and welfare recipients. Despite being in the same cluster, warmth ratings of people with MI were significantly higher than welfare recipients ($M = 2.20$), $t(59) = 2.09$, $p = .04$, and homeless people ($M = 2.16$) $t(26) = 2.00$, $p = .05$, but were not different than poor people, ($M = 2.64$), $t(59) = .12$, *n.s.*Similarly, people with MI were rated (marginally) more competent than welfare recipients ($M = 1.75$), $t(59) = 1.96$, $p = .06$, significantly more competent than homeless people ($M = 1.81$), $t(26) = 2.49$, $p = .02$, but not different than poor people ($M = 2.03$), $t(59) = .51$, *n.s.*

Discussion

The purpose of Study 1 was to determine how the general label of "people with mental illness" was perceived with regard to the fundamental social dimensions of competence and warmth. In particular, we were interested in whether or not the overarching group would be perceived as relatively warm despite being perceived as low on competence. Results were consistent with predictions. We suggested that the general category of people with mental illness would be perceived as more warm than competent because of the array of differences in warmth ratings toward specific mental disorders that perceivers might consider when rating the overarching group. In Study 2, we examine if the SCM framework can be used to differentiate stereotypes of individual mental disorders.

Study 2

Study 2 investigated if stereotypes of specific mental disorders could be differentiated as a function of competence and warmth. Further, we examined if the underlying social structural factors of status and competition predicted competence and warmth across mental illness subgroups (Fiske et al., 2002). We expected that subgroups of people with mental illness would be systematically differentiated on warmth. Past stigma research has shown that certain disorders have been stereotyped as more or less dangerous (Corrigan et al., 2003; Link, 1987; Martin et al., 2000; Phelan et al., 2000). Disorders such as schizophrenia and drug addiction, which are known for their perceived unpredictability and dangerousness, should be considered less warm than other subgroups (Phelan & Link, 2004). Similarly, "at-risk" groups, such as people who are homeless or violent criminals are generally perceived as dangerous and may share a similar lack of warmth (Crisp et al., 2000; Martin et al., 2000). However, when an illness is not typically associated with a threat to personal safety, such as major depressive disorder or mental retardation, warmth ratings may be higher.

Given the definition of mental illness, we expected ratings of competence to be relatively low on the spectrum and less variable. However, we predicted that competence ratings would vary by disorder. Subgroups perceived as reliant on their treatment and support system to function, such as people with schizophrenia and mental retardation, were expected to be lower on competence than other forms of mental illness that may not directly prevent the person from attaining a certain social status, such as eating disorders (Roehrig & McLean, 2009).

Pretest

A pretest was conducted to determine subgroups the public associates with mental illness. Fifty-two individuals were recruited through Mturk and participated in exchange for a payment of 5 cents. The sample was similar to that of Study 1 with respect to age, gender, etc. Participants responded to the following prompt: "We are interested in the different groups that come to mind when people think of mental illness. In the space below please list the groups of people with mental illness that you think of. There are no right or wrong answers and your responses are completely anonymous."

We selected groups that were listed by at least 10% of the participants (Clausell & Fiske, 2005). The mental illness subgroups were: schizophrenia (62%), bipolar disorder (53%), depression (39%), anxiety/phobia (22%), violent criminals (22%), eating disorders (14%), homeless (14%) mental retardation (14%), "multiple personality" disorder (dissociative; 14%), obsessive compulsive disorder (12%), sociopathy (12%), Alzheimer's disease (10%), and addictions (10%). Note that some of the groups were of people commonly thought to have a mental illness (e.g., violent criminals, homeless people), rather than people with clinically recognized disorders; however, they were included in Study 2 because they were associated with mental illness.

Methods

Participants

Seventy-four individuals (47 women; age: $M = 35.86$, $SD = 12.8$) from the United States (South: 31%; West: 25%; Northeast: 23%; Midwest: 20%) were recruited in 2011 through Mturk and were paid 15 cents. The majority was Caucasian (83.8%), Christian (64.9%), with either some college education or a college degree (73%).All participants provided informed consent prior to study participation.

Materials and procedure

The questionnaire contained the same stereotype content measures of warmth and competence as Study 1. Additionally, to replicate the presumed causal relationship between social structure variables and stereotype content in this domain (Caprariello et al., 2009), two ratings on the dimensions of competition (i.e., compete for power and resources) and status (i.e., economically successful and prestigious jobs) were assessed. All 13 subgroups generated from the pretest were presented in a random order to each participant. Groups were represented as individuals with disorders, e.g., "People with schizophrenia" or "People who are homeless". The 12 items assessing competence, warmth, status and competition were rated using 5-point Likert scales. Reliability of the 4 scales averaged across groups was: warmth $\alpha = .86$, competence $\alpha = .88$, status $\alpha = .84$ and competition $\alpha = .81$, and across participants was: $\alpha = .84$, competence $\alpha = .81$, status $\alpha = .70$ and competition $\alpha = .80$.

Results

The 2-step cluster analysis procedure resulted in four clusters (see Fig. 1, Table 1). First, the low warmth ($M = 2.31$), low

Table 1
Study 2 warmth and competence means per cluster.

Cluster	Stereotype	Groups	Warmth	Competence	Warmth versus competence (p-value)
LW/LC	Psychotic	Addictions, homeless, multiple personality disorder, schizophrenia	2.31^{a}	2.29^{e}	*n.s.*
MW/MC	Internal	Anxiety/phobia, bipolar, depression, eating disorder, obsessive compulsive disorder	2.82^{b}	3.08^{f}	<.001
HW/LC	Neuro-cognitive	Alzheimer's, mental retardation	3.46^{c}	1.95^{g}	<.001
LW/MC	Anti-social	Sociopathy, violent criminals	1.6^{d}	2.77^{g}	<.001

Note. Within each column, means that do not share a superscript significantly differ, $p < .05$. The final column reflects if competence and warmth differed, on average, within a cluster.

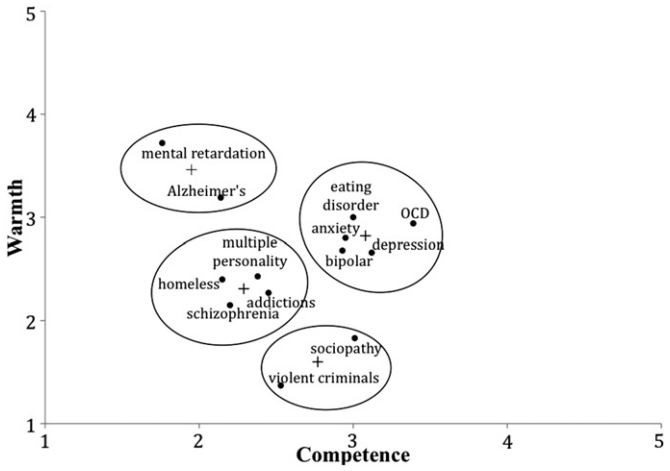

Fig. 1. Study 2 mental illness subgroup clusters. *Note*: '+' indicates cluster centroid.

competence ($M = 2.29$) cluster (LW/LC) included people with schizophrenia, 'multiple personality disorder', homeless, and addictions. The HW/LC cluster, rated high on warmth ($M = 3.46$) yet low on competence ($M = 1.95$), was comprised of 2 groups characterized by neuro-cognitive deficits: people with Alzheimer's or mental retardation. A 5-group MC/MW cluster was centered on both dimensions (warmth $M = 2.86$; competence $M = 3.08$) and included people with eating disorders, anxiety or phobia disorders, depression, obsessive compulsive disorder, and bipolar disorder. The final LW/MC cluster was rated lowest on warmth ($M = 1.59$) but near the center of the competence dimension ($M = 2.77$) and was comprised of people with sociopathy and violent criminals.

The four-cluster solution was validated using *t*-tests to examine differences in perceived competence and warmth *between clusters*. The average competence and warmth rating of mental illness subgroups computed across participants were submitted to pairwise, independent *t*-tests between clusters with subgroup as the unit of analysis. All cluster warmth means were found to significantly differ, all $ts > 3.51$, $ps < .03$.In contrast to warmth ratings, competence ratings of all clusters were somewhat low ($Ms < 3.08$), with fewer differences between them. The average competence of the LW/LC cluster was significantly lower than that of the MW/MC cluster, $t(7) = -6.95$, $p < .001$, marginally lower than that of the LW/MC cluster, $t(4) = -2.61$, $p < .06$, but marginally higher than that of the HW/LC cluster, $t(4) = 2.13$, $p = .10$. In addition, people with disorders in the MW/MC cluster were perceived as significantly more competent than those in the HW/LC cluster, $t(5) = 6.58$, $p = .001$. No other comparisons of competence between clusters were significant, $ts < 2.67$, *n.s.*

To assess if clusters were ambivalent (high on one dimension but low on the other), we examined the difference in competence versus warmth *within each cluster* using paired-samples *t*-tests with participant as the unit of analysis. The cluster of HW/LC subgroups had significantly higher warmth than competence ratings, $t(73) = 17.32$, $p < .001$, and the LW/MC subgroups had significantly lower warmth ratings compared to competence ratings, $t(73) = -12.74$, $p < .001$. The LW/LC cluster did not differ on warmth and competence, receiving purely derogatory ratings, $t(73) = .50$, *n.s.* Interestingly, although the MW/MC cluster was located toward the center of the two-dimensional space, subgroups in this cluster had significantly lower warmth than competence ratings, $t(73) = -5.81$, $p < .001$.

Finally, to test whether social structure variables of status and competition predicted ratings of competence and warmth for mental illness subgroups, we ran bivariate correlations on all stereotype and social structure constructs. Correlations were based on the mean on each dimension per subgroup, averaged across participants. As predicted, status and competence were positively correlated, $r(11) = .89$, $p < .001$, while competition and warmth were negatively correlated, $r(11) = -.81$, $p < .001$. No other correlations approached significance.

Discussion

In Study 2, we examined if there were systematic differences in the stereotypes associated with specific mental disorders. Consistent with previous work using the SCM to investigate stereotypes toward subgroups based on gender, sexual orientation, and immigration status (Clausell & Fiske, 2005; Eckes, 2002; Lee & Fiske, 2006), we found that competence and warmth stereotypes were reliably different toward four distinct clusters of mental illnesses. We found that people with schizophrenia, "multiple personality", addictions, and those who are homeless, were believed to be both incompetent and hostile (i.e., not warm). The remaining clusters were found to be associated with ambivalent stereotypes. People with sociopathy and violent criminals were seen to be of about average competence but hostile. People with Alzheimer's disease or mental retardation constituted a neuro-cognitive deficit cluster that was seen as warm, but not very competent. Finally, the largest cluster, perceived near the middle of competence by warmth two-dimensional space, included a mixture of disorders characterized by anxiety, mood, and eating disorders. Variance in stereotype ratings of all target groups were examined to see if groups in the middle cluster represented neutral stereotypes of a coherent whole (e.g., anxiety disorders) or averages over differing subsets within a group (e.g., panic disorder, generalized anxiety disorder). Results revealed similar variability in all target group ratings suggesting that disorders in middle cluster were in fact perceived as a moderately competent and warm whole.

It is important to note that the mental illness clusters generated by the SCM framework converge with prior literature on how the public conceptualizes mental illness. Phelan et al. (2000) examined open-ended responses to a prompt about what mental illness means using nationally representative samples collected in 1950 and 1996 in the United States. Similar to the clusters we observed, responses were categorized into four collections of syndromes or problems: psychosis, anxiety/mood problems, social deviance, and mental deficiency or cognitive impairment. Interestingly, however, neither the current results nor those of Phelan et al. (2000) map well onto the mental illness classifications in the DSM-IV-R (American Psychiatric Association, 2000). For example, the disorders in the low warmth-low competence cluster – schizophrenia, "multiple personality" disorder, and addictions – are similar in that they represent Axis I syndromes that may require clinical attention. However, each of these disorders belongs to a separate category (psychotic, dissociative, and substance-related disorders, respectively) exemplified by distinct prevalence rates, progression of symptoms, and suggested treatments. Our research suggests that the lay public nonetheless recognizes both commonalities within – and distinctions between – stereotype content ascribed to subgroups of people who are clinically recognized as suffering from distinct illnesses. In addition, Study 2 replicated the link between the social structural variables of group status and competition and stereotype content based on competence and warmth with mental illness subgroups.

General discussion

In two studies we found that the content of stereotypes toward mental illness could be understood using two fundamental

dimensions of social judgment, competence and warmth, posited by the Stereotype Content Model (Fiske et al., 2002). In Study 1, we found that when rated in the context of a variety of social groups that differed with respect to race/ethnicity, religious affiliation, gender, etc., the general category of "people with mental illness" was rated as fairly incompetent and not especially warm Consistent with prior work demonstrating that the SCM could also be applied to subgroups within an overarching category (Clausell & Fiske, 2005; Eckes, 2002; Lee & Fiske, 2006), the results of Study 2 demonstrated that stereotypes of a variety of mental disorders fell into four clusters. Overall, stereotypes of people with MI were relatively less warm or competent than stereotypes for social groups in Study 1. People with schizophrenia, "multiple personality disorder", addictions, and the homeless were seen as both incompetent and hostile. The antisocial cluster (e.g., sociopaths) was perceived as fairly competent but quite hostile. People in the middlemost cluster (e.g., people with anxiety or eating disorders) were seen as somewhat more competent than warm. Finally, the neuro-cognitive deficit cluster (e.g., mental retardation) was the only one perceived as warm, but concurrently incompetent.

The stereotypes of mental illness subgroups found with the SCM framework are consistent with nationally representative surveys that have examined differences in the lay public's perceptions about the dangerousness (lack of warmth) or incompetence of people with specific disorders. Across multiple Western countries, the majority of the public believes people with drug addictions or schizophrenia are dangerous to others (Angermeyer & Matschinger, 2005; Crisp et al., 2000; Link et al., 1999; Pescosolido et al., 1999). In addition, both of these groups are believed to be incapable of making appropriate decisions with regard to their treatment or finances (Pescosolido et al., 1999). Our results are consistent with this research in that people with addictions or schizophrenia, along with people with "multiple personality" disorder or homeless people, were in the only cluster that fell in the low competence-low warmth quadrant of the SCM. Further, the fact that the middle cluster, which included people with depression, anxiety, and eating disorders, was rated about average on competence and warmth dimensions is similar to previous findings that less than a third of the public perceived people with these disorders to be *un*able to make decisions or to be dangerous (Angermeyer & Matschinger, 2003; Crisp et al., 2000; Link et al., 1999; Pescosolido et al., 1999). Thus, results using the SCM highlight that there is not a single, unifying dimension that underlies public stigma toward all mental illness subgroups. Instead, a more comprehensive understanding of the cultural stereotypes on which public stigma is based will stem from the conjunction of competence and warmth perceptions.

The current work extends prior literature via employment of focused analyses that statistically differentiate stereotype content of the clusters. We are unaware of any work to date that has directly tested if differences in a stereotypic dimension systematically vary between disorders. That is, the analyses used in past literature have relied on omnibus tests spanning several disorders and rating dimensions concurrently, or several dimensions per disorder. Because we validated the derived cluster analysis solution with *t*-tests comparing perceived warmth and competence between and within clusters, the observed differences in the stereotypic content of mental disorders are systematic and likely to replicate. The implication of such focused tests is that anti-stigma campaigns could justifiably be tailored to groups of similar disorders rather than separately for each illness, a seemingly impractical task.

Shared Stereotype content of mental illness subgroups

Although the pattern in which the MI subgroups were clustered does not reflect groupings of illnesses found in the DSM-IV-TR (American Psychiatric Association, 2000), their shared stereotype content may be understood by the behavioral symptoms typically exhibited by people with disorders in a cluster. Groups within the LW/LC cluster are all perceived to be incapable and unfriendly, but likely for different reasons. Regarding schizophrenia, these trait endorsements could reflect beliefs that delusions or hallucinatory symptoms will impair one's ability to function as well as yield unpredictable behavior in interpersonal interactions. People with addictions, on the other hand, may be perceived as unable to function due to their substance dependency and willingness to break the law to support their habit. Thus, although the disorders in the LW/LC cluster have distinct prevalence rates, progression of symptoms, and recommended treatments, there is convergence in their stereotype content.

Compared to the potential externalizing symptoms of the LW/LC disorders, symptoms of people with disorders in the MW/MC cluster tend to be directed inward. People with mood (major depression, bipolar disorder), anxiety-related (anxiety, OCD), and eating disorders are typically not characterized by behaviors that could lead them to physically harm others, but rather problems that primarily affect their internal world that may not be witnessed in public settings. We do not mean to suggest that the symptoms of people with disorders in this cluster do not impact others—certainly significant others in the person's life are likely to be affected. However, such symptoms may not lead to perceptions of dangerousness toward others or an incapacity to contend with the daily demands necessary to sustain employment and housing.

Disorders in the remaining ambivalent clusters were fewer and thus commonalities in symptoms that relate to stereotype content are relatively straightforward. The LW/HC cluster of people with sociopathy and violent criminals are expected, by definition, to mistreat others for personal gain or satisfaction. At the same time some competence and skill is likely attributed to people with these disorders as the expression of their symptoms involves a modicum of planning to execute. In the same way, people with mental retardation and Alzheimer's disease in the HW/LC cluster are typified by diminished cognitive capacity due to genetic or biological sources. People with neuro-cognitive deficits are expected to need assistance in meeting basic physical needs, thus, are perceived as incapable of independent functioning. In contrast to other clusters, however, people with mental retardation or Alzheimer's disease are not expected to harbor ill will. They simply lack the *mens rea* to harm others.

Thus, we suggest that the defining characteristics of MIs that give birth to shared stereotype content of competence and warmth may be understood by the extent to which typical symptoms of the grouped illnesses are visible and volitional. By "visible" we mean that the symptoms are likely to be expressed toward, or in the presence of, others versus expressed inwardly, impacting primarily the self. If symptoms are visible to others, it seems reasonable to suggest that they will affect perceived social status and competence. Whether or not symptoms are "volitional" reflects the intention to harm others or the degree of control a person has over symptoms that may lead to such harm.

Implications of the SCM

We believe the implications of adopting the SCM to address public stigma of mental illness are broad. First, the SCM provides a theoretical framework with which to examine causal associations between several components of stigma: stereotypes, emotional prejudice, and discrimination. Second, the SCM allows one to simultaneously investigate these components toward several different disorders. Stereotype content based on the SCM competence and warmth quadrants has been shown to predict distinct

profiles of emotional prejudice and behavioral discrimination toward a variety of social groups (Cuddy, Fiske, & Glick, 2007). Thus, the SCM provides a means to move beyond *descriptions* of the ways in which people with different mental disorders are perceived to *predictions* about the specific types of emotional prejudices and discriminatory behaviors particular groups are likely to face depending on the stereotypes the lay public holds. Based on our results, the lay public would be expected to react to people with disorders in the low warmth-low competence cluster with contempt and to aggress against them by segregating people with MI away from their neighborhood, for example. In stark contrast, the public would react to people with mental retardation with pity and attempts to help or protect them. Campaigns to reduce emotional prejudice toward people with MI should focus on increasing perceptions of competence for people with mental retardation, but target both competence and warmth perceptions of people with schizophrenia.

Although it should certainly not be the onus of people with MI to overcome public stigma, knowledge of cultural stereotypes the lay public holds of their particular illness may prove useful in navigating everyday situations. An interesting extension of the current work would be to integrate the SCM perspective on stigma, which focuses on the role the public may play in stigma, with theories that focus on how a person with MI may develop self-stigma. Modified labeling theory (Link, 1987) asserts that people with MI may internalize the negative perceptions others hold of them thereby impeding recovery. If interventions could be developed to help people with MI learn how to overturn cultural stereotypes then the cycle that yields behavioral confirmation of negative stereotypes, and ultimately self-stigma, may be preempted. For example, it may be important for a person with schizophrenia to convey his/her social skills in addition to his/her professional skills in employment settings. If a person presents himself/herself as competent and warm, then others may be less likely to apply cultural stereotypes of MI to him/her.

Limitations

As with any research, there are limitations to the present work. A potential limitation of our research is the reliance on a convenience sample recruited online. Our samples across studies were predominantly female, White, in their thirties, and had obtained some college education. Although the samples were clearly not as representative as those drawn from large national surveys like the General Social Survey, recent research suggests that MTURK samples are more diverse than other internet samples – and certainly much more diverse than college student samples (Buhrmester et al., 2011). In addition, MTURK samples have been found to produce reliable data. To provide validation of our results with a nationally representative sample, we are currently re-analyzing the General Social Survey data on danger and incompetence toward four disorders (schizophrenia, major depression, drug dependence, alcohol dependence). Additionally, we used politically-correct subgroup labels such as “people with schizophrenia” rather than “schizophrenics”. Thus, our results may underestimate how disparaging stereotypes for people with MI may be.

Conclusions

Evidence from the current research suggests that the SCM can aid in understanding the stereotype content of people with MI. We hope future research investigates whether the framework might also be used to cohere disparate lines of existing research on emotional reactions to people with MI and their implications for behavioral intentions or discrimination (Corrigan et al., 2003; Martin et al., 2000). Having a common theoretical framework from which to understand the scope of stereotypes, emotional prejudice, and discrimination and how they vary for subgroups of MI should inform anti-stigma campaigns and provide means to alleviate the burden of public stigma carried by those with mental illness.

Appendix. Supplementary data

Supplementary data related to this article can be found online at doi:10.1016/j.socscimed.2011.12.019.

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