

Three Strategies for Changing Attributions about Severe Mental Illness

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Abstract

The effects of three strategies for changing stigmatizing attitudes—education (which replaces myths about mental illness with accurate conceptions), contact (which challenges public attitudes about mental illness through direct interactions with persons who have these disorders), and protest (which seeks to suppress stigmatizing attitudes about mental illness)—were examined on attributions about schizophrenia and other severe mental illnesses. One hundred and fifty-two students at a community college were randomly assigned to one of the three strategies or a control condition. They completed a questionnaire about attributions toward six groups—depression, psychosis, cocaine addiction, mental retardation, cancer, and AIDS—prior to and after completing the assigned condition. As expected, results showed that education had no effect on attributions about physical disabilities but led to improved attributions in all four psychiatric groups. Contact produced positive changes that exceeded education effects in attributions about targeted psychiatric disabilities: depression and psychosis. Protest yielded no significant changes in attributions about any group. This study also examined the effects of these strategies on processing information about mental illness.

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Social stigma has a significant impact on the quality of life of persons with schizophrenia and other severe mental illnesses. Research suggests, for example, that citizens are less likely to hire persons who are *labeled* mentally ill (Farina and Felner 1973; Bordieri and Drehmer 1986; Link 1987) and less likely to lease them apartments (Page 1977, 1983; Alisky and Iczkowski 1990). As a result, various advocacy, government, and community service

groups believe that eliminating stigma is essential to wholly improve the lot of persons with mental illness.

Social psychologists who study strategies for changing racial stereotypes have identified three approaches for changing stigmatizing attitudes: education, which seeks to replace stigmatizing attitudes with accurate conceptions about the disorders; contact, which challenges public attitudes about mental illness through direct interactions with persons who have these disorders (Corrigan and Penn, in press); and protest, which suppresses stigmatizing attitudes toward mental illness and behaviors that promote these attitudes. The purpose of this study is to contrast the effects of these strategies on stigmatizing attitudes about mental illness.

Research on Education, Contact, and Protest

Several studies have examined the impact of education on public attitudes about severe mental illness based on the finding that persons who seem to be more knowledgeable about mental illness are less likely to endorse stigma and discrimination (Roman and Floyd 1981; Link and Cullen 1986; Link et al. 1987; Brockington et al. 1993). For example, graduate students who participated in brief courses on mental illness showed improved attitudes about persons with psychiatric disabilities (Morrison 1980; Morrison et al. 1980; Morrison and Teta 1980; Keane 1990, 1991). Members of the general public also demonstrated improved attitudes after completing short information sessions (Penn et al. 1994, 1999; Thornton and Wahl, 1996) and semester-long courses on severe mental illness (Holmes et al. 1999).

Protest seeks to suppress negative attitudes and representations of mental illness. For example, newspaper and

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poster advertisements for a film titled *Crazy People* were patently offensive; they included a picture of a cracked egg with hands and arms and the caption "Warning: Crazy people are coming" (Wahl 1995). Paramount Pictures changed marketing strategies after pointed discussions with representatives from several advocacy groups. The new advertisement had pictures of the film's stars, Dudley Moore and Daryl Hannah, with the revised header "You wanna laugh tonight?" Citizens may be encountering far fewer sanctioned examples of stigma and stereotypes because of protest efforts like this (Wahl 1995). There is, however, little empirical research on the psychological impact of protest campaigns on people's prejudice about mental illness. Researchers do not know, for example, whether a "just say no to negative stereotypes" effort actually leads to more enlightened views of mental illness.

Social psychological research on suppression of minority group prejudice has yielded some interesting findings that may answer questions about the short-term impact of protest. Suppression occurs when there is controlled inhibition of unwanted stereotypic thoughts and is evinced when persons either no longer endorse prejudice or fail to recall specific stereotypes (Devine 1989; Macrae et al. 1996). Unfortunately, protest and suppression may yield an unwanted rebound effect. Namely, persons who are ordered to suppress negative stereotypes tend to be more sensitized to them; this sensitization leads to unwanted recollections about the stigmatized group (Macrae et al. 1994a; Macrae et al. 1996).

A third way to change public attitudes about mental illness is to facilitate interactions between citizens and persons with psychiatric disabilities. Studies have shown an inverse relationship between having contact with a person with mental illness and endorsing psychiatric stigma (Link and Cullen 1986; Penn et al. 1994; Holmes et al. 1999; Penn et al. 1999). However, it is unclear from these studies whether contact led to diminished stigma or persons who do not stigmatize were more likely to seek contact. Other research on racial stereotypes showed that persons randomly assigned to contact with a minority group member (versus no contact) have diminished prejudice toward that group (Desforges et al. 1991; and reviews by Hamburger 1994; Gaertner et al. 1996). Research is still needed to determine the effects that contact with a person with psychiatric disability has on public attitudes about mental illness.

An Attributional Analysis of Strategies That Challenge Stigma

The purpose of this study is to compare the effects of education, contact, and protest on knowledge structures about mental illness. Research has advanced theory in this area

considerably by using an attributional analysis of stereotypes experienced by physically and psychiatrically disabled groups (Corrigan, in press). Research in this area suggests that psychiatric disabilities are viewed more negatively than physical disabilities like cancer (Weiner et al. 1988; Lin 1993; Weiner 1995). These findings suggest that the effects of stigma are specific to the disability. Additional analyses showed that the relative severity of stigma varies across groups depending on the attribution (Turk et al. 1986; Long 1990; Crandall and Moriarty 1995). Perhaps, for example, research participants tend to assign more blame for their disorder to persons with cocaine addiction and psychosis than to persons with depression and mental retardation.

The present study examined the effects of brief education, contact, and protest programs on attributions about physical and psychiatric disabilities; these programs specifically focused on the stigma related to severe mental illnesses like depression and psychotic disorders. Hence, we expected education and contact to yield specific improvements in stigma about psychiatric disability; no changes were expected in attributions about the physically disabled group. In addition, our study also examined relative change in attributions within the spectrum of psychiatric disabilities. Specifically, how would strategies that target attributions about psychotic disorders and depression affect attributions about persons with mental retardation or substance abuse? Given the rebound effects that result from protest, we expected that study participants in the protest group would show no changes.

The purpose of this study was not limited to examining the effects of education, contact, and protest on knowledge structures. We also examined how these strategies affected the subsequent processing of social information. Related research on minority groups has shown that negative attributions affect perceptions of those groups (i.e., persons who endorse stigma about minority groups are more likely to attend to and recall negative characteristics of representatives of that group) (Johnston and Macrae 1994; Macrae et al. 1994b). Hence, a final goal of this study was to determine the effects of education, contact, and protest on recollection of positive and negative statements about a person labeled as "mentally ill."

Methods

Overview. Research participants in this study were randomly assigned to one of four stigma-changing conditions: education, contact, protest, or control groups. Participants completed measures of attributions about disabilities prior to the stigma-changing condition and after completion. They were also tested on their recollections about a videotape of a person with mental illness.

Participants. Adults enrolled at a community college in metropolitan Chicago were recruited for this study. All of the 152 adults solicited for the study agreed to participate and completed all measures. The sample had an average age of 25.7 years (standard deviation [SD] = 9.7) and was 67.8 percent female. Of the sample, 72.3 percent were single, 11.2 percent were married, and 16.5 percent were separated, divorced, or widowed. The sample was 51.3 percent European-American, 35.3 percent African-American, and 13.4 percent other. One-way analyses of variance (ANOVAs) failed to show a significant difference in any variable across groups ($p > 0.25$). Moreover, demographic variables were not found to be significantly associated with change in attribution factors; the largest value from 72 correlations among change in 12 attribution factors and six sets of demographics was $r = 0.20$. Hence, it is unlikely that minor differences in demographics across groups confounded the results of this study.

Stigma-Changing Conditions. Each condition was conducted by a single leader with four to eight participants in a quiet room with no distractions. Each program included two parts: a 10-minute presentation immediately followed by a 5-minute discussion. Written copies of the presentations and discussion questions are available from the first author. Earlier research has shown that short stigma-changing programs lead to significant change in attitudes (Penn et al. 1994, 1999). The goal of the education, protest, and contact presentations and discussions was to diminish specific stigma about depression and psychotic disorders. Hence, the presentations did not discuss stereotypes commonly experienced by persons with other physical disabilities or psychiatric disorders, such as mental retardation or addictions. The control presentation reviewed "Hobbies and Technology in the 90s" and discussed no issues related to mental illness or physical disability.

Education and protest. The key component to education programs is replacing myths about mental illness with correct information (Corrigan and Penn, in press). Hence, the education presentation reviewed seven myths drawn from the literature (Harding and Zahniser 1994; Penn et al. 1999) and facts that challenge these myths. The presentation included discussions about the relationship between psychoses and violence, homelessness, and independence. Leaders augmented their presentation with 14 photographic slides that specifically paired myths (e.g., "Persons with mental illnesses like schizophrenia are violent and should be avoided.") with research findings (e.g., "Most persons with mental illness are no more violent than the average citizen.").

The goal of protest programs is to present a morally untenable position regarding a minority group (e.g., "Mentally ill patients should be institutionalized because

they are incapable of caring for themselves.") followed by a rebuke against continuing these thoughts (e.g., "This is untrue. Shame on us for wanting to keep persons with mental illness away from their communities."). To facilitate this goal, the presentation included 14 slides that reviewed disrespectful ways in which persons with mental illness are portrayed in the media. Poignant examples were taken from Wahl's (1995) book, *Media Madness*. One slide, for example, featured a headline from the *New York Post* that read "Freed Mental Patient Kills Mom." These examples were followed by condemnations against media representations of mental illness and societal reaction in general along with clear commands that "We must stop thinking that way!" Discussion questions included asking participants to recall examples of stigma about mental illness from books, television, and the media as a whole.

Three group leaders were trained to provide the education, protest, and control conditions for the study. The scripts for these presentations were written out and read verbatim by the leader. The presentation for education, protest, and control conditions included slides to illustrate key points. Leaders from all conditions were also provided with a set of open-ended questions about the corresponding presentation to facilitate discussion. Group leaders rotated through all conditions and were assigned using a Latin square. Analyses showed no effect related to the leader of the presentation, so we reported results collapsed across leaders.

Contact. Research participants in the contact condition listened to a 10-minute presentation by one of two persons who discussed their history of severe mental illness. These persons had at least a 7-year history of psychotic symptoms, suicide attempts, and hospitalization for bipolar disorder. Both persons now live independently, are relatively symptom-free, work, and report a satisfactory quality of life. Analyses of outcome data showed research participants did not differ by contact group leader; hence, data were collapsed across contacts for subsequent analyses.

Several factors have been shown to augment the impact of contact on public attitudes and were incorporated into the contact condition (Stephan 1987). Contact effects are enhanced when members of the public meet persons who mildly disconfirm the stereotype (Weber and Crocker 1983; Johnston and Hewstone 1992); despite successful outcomes, the two contact group leaders still struggled with recurring symptoms and discussed this struggle in their presentation. The effects of contact are facilitated when participants are able to interact with contacts (Johnson et al. 1984; Worchel 1986); hence, contact group leaders provided a 5-minute discussion in which participants questioned them about living with mental illness.

Measuring stigma-changing processes. After completing the two measures discussed below, research participants answered a five-item pencil-and-paper survey of their experience of the stigma-changing condition to which they were assigned. Participants rated topics and group leaders on 7-point Likert Scales (1 = leader was not very believable; 7 = leader was very believable). A factor analysis on responses provided by participants in this study yielded two factors with eigenvalues greater than 1.00. The first factor represented participants' views of their *leaders*—whether they seemed knowledgeable, believable, and likeable. The second factor represented the *topic*—whether it seemed important and interesting. We will examine relationships between these factors and attribution changes that result from education, contact, and protest to identify process variables that enhance stigma change.

Dependent Measures

Psychiatric Disability Attribution Questionnaire.

The Psychiatric Disability Attribution Questionnaire (PDAQ) was based on earlier work by Weiner (1988, 1995) who examined ratings of controllability and stability attributions for physical and disability groups. The PDAQ comprised similar items to represent controllability and stability attributions for a broader set of psychiatric disabilities (Corrigan et al., in press). Four of the six disability groups represented commonly stigmatized psychiatric diagnoses: mental retardation, cocaine addiction, psychosis, and depression. Attributions about this group are contrasted with two physical disabilities from the study by Weiner et al. (1988): cancer and AIDS.

Research participants rated each group on six items using a 7-point agreement scale (1 = agree; 7 = disagree). These ratings were completed prior to and immediately after participating in the assigned condition. Four of the items were selected from the controllability (blame for problems, pity) and stability (benefit from counseling and benefit from medicine) attributions tested by Weiner et al. Two additional items were added to address controllability and stability issues discussed in literature about mental illness: Should persons with mental illness be avoided (Brockington et al. 1993), and will persons with mental illness recover (Fisher 1994; Miller et al. 1997)? Results of a factor analysis showed that these items yielded two factors for each of the six disability groups that were consistent with controllability and stability attributions. These factor scores have adequate test-retest reliability (ranging from 0.57 to 0.83, depending on disability) and concurrent validity (Corrigan et al., in press).

The PDAQ yielded 12 scores: controllability and stability factor scores for each of the six disability groups. High controllability scores suggested that the sample agreed with the view that persons with the corresponding

disability are to blame for their disorder and should be avoided. High stability scores meant the sample believed that persons with disability do not benefit from counseling or medical care and do not recover from that disability. Hence, a decrease from baseline indicated improved attributions about mental illness.

Life Story Memory Test. We used a method designed by Macrae and colleagues (Johnston and Macrae 1994; Macrae et al. 1994b) to assess the impact of stigma-changing strategies on the perception and recollection of persons with severe mental illness. Participants viewed two videotapes, each about 3 minutes long, of an actor labeled "mentally ill" who is telling his or her life story. The narrative contained 20 items, 10 that were reliably rated by a pilot group ($n = 29$) as negative and stereotypic statements about mental illness (e.g., "Sometimes I believe I'm George Washington.") and 10 that were rated as positive statements (e.g., "I work as an engineer."). These items were randomly ordered and then written into a coherent narrative that the actor read on the videotape. Ten minutes after viewing each videotape (during which time participants were instructed to complete an interference task: to draw a map of their childhood home or elementary school), participants were asked to write down as many of the statements as they could remember. A rater counted the number of positive and negative statements in the list. Two independent raters counted positive and negative statements from the lists of 30 percent of the participants; they showed 100 percent agreement in their ratings.

Participants were administered the task only once, after completing the stigma-changing condition. Pre- and posttest administration of the Life Story Memory Test would have led to a learning effect that might have confounded test results. Two indices were determined from the data for this study: negative ratio (the number of negative statements divided by the number of total recalled statements) and positive ratio (the number of positive statements divided by the number of total recalled statements).

Results

Means and SDs of PDAQ factor scores for each of the six disability scores are summarized in table 1. These scores were determined from pre- and posttest administrations of the scale and are listed by stigma-changing condition. Then 4×2 ANOVAs were completed to examine condition by trait interactions for the attribution factors specific to each of the six disability groups. This generated a set of 12×2 ANOVAs: six representing the variance of controllability attributions across the six disability groups, and six representing stability attributions across the six groups. Results of the ANOVAs are summarized in table 2.

Table 1. Means and standard deviations of disability attribution questionnaire factors by condition and trial

	Control		Education		Protest		Contact	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Cancer								
Controllability	2.5 (1.0)	3.0 (2.0)	2.8 (1.3)	3.0 (2.0)	2.8 (1.9)	2.9 (1.5)	3.0 (1.6)	3.3 (1.8)
Stability	7.9 (2.9)	8.2 (3.7)	8.3 (3.8)	7.5 (3.7)	8.4 (3.9)	8.2 (3.8)	7.4 (3.3)	6.9 (3.4)
Depression								
Controllability	3.7 (2.3)	4.5 (2.5)	4.2 (2.8)	4.1 (2.9)	3.8 (2.4)	3.7 (2.2)	4.7 (2.5)	4.1 (2.5)
Stability	5.9 (2.7)	6.1 (3.0)	7.7 (3.7)	6.1 (3.0)	7.3 (3.9)	7.1 (4.0)	7.0 (2.7)	6.0 (2.4)
Psychosis								
Controllability	5.4 (2.9)	4.7 (2.4)	5.3 (2.6)	4.5 (2.5)	4.9 (2.5)	4.7 (2.3)	5.6 (2.1)	4.7 (2.0)
Stability	9.7 (3.2)	8.2 (3.5)	10.3 (3.5)	8.1 (3.5)	9.1 (3.4)	8.9 (4.2)	9.5 (3.5)	7.6 (3.2)
Cocaine addiction								
Controllability	8.5 (3.2)	8.7 (3.3)	8.9 (3.9)	7.5 (3.8)	9.2 (3.6)	8.6 (3.7)	10.1 (3.1)	9.2 (3.1)
Stability	11.0 (3.9)	9.9 (3.9)	11.2 (3.7)	9.7 (3.7)	10.1 (3.5)	10.6 (4.7)	10.3 (3.6)	9.7 (4.2)
Mental retardation								
Controllability	3.3 (1.7)	3.2 (1.8)	3.7 (2.5)	3.5 (2.4)	2.7 (1.2)	2.7 (1.3)	3.5 (1.8)	3.7 (1.8)
Stability	14.1 (4.4)	12.9 (5.0)	13.5 (4.2)	9.6 (4.3)	13.4 (4.0)	12.1 (4.4)	12.5 (3.7)	11.2 (4.7)
AIDS								
Controllability	5.6 (3.1)	5.7 (3.2)	4.8 (3.2)	4.7 (3.0)	5.4 (3.3)	5.0 (3.4)	5.2 (2.8)	5.4 (2.2)
Stability	10.8 (3.9)	10.6 (4.2)	11.3 (4.2)	9.6 (4.0)	10.2 (4.1)	10.3 (4.3)	10.5 (3.3)	10.3 (4.0)

Table 2. Summary of 4 × 2 ANOVAs with controllability and stability factors listed for each disability group

	Condition	Trial	Interaction	Post hoc contrasts
Cancer				
Controllability	$F(3,148) = 0.50, ns$	$F(1,148) = 4.36, p < 0.05$	$F(3,148) = 0.27, ns$	
Stability	$F(3,148) = 0.90, ns$	$F(1,148) = 1.63, ns$	$F(3,148) = 0.87, ns$	
Depression				
Controllability	$F(3,148) = 0.56, ns$	$F(1,148) = 0.00, ns$	$F(3,148) = 4.15, p < 0.05$	ct > cl
Stability	$F(3,148) = 1.20, ns$	$F(1,148) = 7.56, p < 0.05$	$F(3,148) = 2.68, p < 0.05$	edu = ct > cl; edu > pro
Psychosis				
Controllability	$F(3,148) = 0.44, ns$	$F(1,148) = 14.77, p < 0.05$	$F(3,148) = 0.91, ns$	
Stability	$F(3,148) = 0.23, ns$	$F(1,148) = 32.00, p < 0.05$	$F(3,148) = 3.43, p < 0.05$	edu = ct = cl > pro
Cocaine addiction				
Controllability	$F(3,148) = 1.20, ns$	$F(1,148) = 18.94, p < 0.05$	$F(3,148) = 2.82, p < 0.05$	edu > cl = pro
Stability	$F(3,148) = 0.12, ns$	$F(1,148) = 6.26, p < 0.05$	$F(3,148) = 2.48, p < 0.10$	edu = cl > pro
Mental retardation				
Controllability	$F(3,148) = 2.28, ns$	$F(1,148) = 0.04, ns$	$F(3,148) = 0.52, ns$	
Stability	$F(3,148) = 1.91, ns$	$F(1,148) = 41.46, p < 0.05$	$F(3,148) = 4.99, p < 0.05$	edu > cl = ct = pro
AIDS				
Controllability	$F(3,148) = 0.45, ns$	$F(1,148) = 0.40, ns$	$F(3,148) = 0.88, ns$	
Stability	$F(3,148) = 0.10, ns$	$F(1,148) = 5.99, p < 0.05$	$F(3,148) = 3.49, p < 0.05$	edu > cl = ct = pro

Note.—ANOVA = analysis of variance; cl = control; ct = contact; edu = education; ns = nonsignificant; pro = protest. Post hoc contrasts represent pairwise 2 × 2 ANOVAs. Conditions yielding the largest positive changes in Psychiatric Disability Attribution Questionnaire factor scores are listed first.

Significant interactions were noted for controllability and/or stability attributions about each of the psychiatric disability groups as well as the AIDS group. A significant interaction was not found for controllability and stability ratings about cancer. Table 2 also includes post hoc Tukey's test for variables that yielded significant interactions for the 4×2 ANOVA. Post hoc comparisons examined pre- and posttest changes in pairs of stigma-changing conditions for each PDAQ variable. Several trends are apparent by examining these comparisons.

Contact yielded significant changes in three of four attributions about the target groups of this study: persons with psychoses and depression. Education seemed to have a broader effect, yielding significant change in stability attributions about depression, psychosis, cocaine addiction, mental retardation, and AIDS. Protest, on the other hand, yielded no significant change in attributions about psychiatric or physical disability. This is especially notable given that participants in the control condition changed in stability attributions as the result of taking the PDAQ twice during the study.

Process Variables. Pearson's product moment correlations between the two factors of the process measure and selected PDAQ attribution change scores for contact and education conditions were determined. Only PDAQ attribution scores that changed significantly as the result of contact and education were included in these analyses. Results showed no clear trends between change in attributions because of contact and the process measure factors; only the relationship between the leader factor of the process measure and change in controllability attributions about depression was significant ($r = 0.28, p < 0.05$).

The leader factor, however, seemed to correlate with change in attributions as a result of education. Research participants who rated their leaders as more knowledgeable or believable showed greater improvements in attributions about mental illness after participating in the education program (r ranged from 0.31 to 0.38). Impressions about whether the topic was interesting or important did not seem to significantly predict attribution change as a result of contact and education.

Recollections About Persons with Mental Illness

Means and SDs of the positive and negative ratio scores from the Life Story Memory Test are summarized in table 3. Results of a one-way ANOVA for the positive ratio score were significant ($F(3,148) = 3.05, p < 0.05$). Post hoc Tukey's tests showed that the ratio of positive to overall recalled items was significantly greater ($p < 0.05$) for participants in the contact group compared to the other three groups. A second ANOVA also yielded positive results ($F(3,148) = 4.27, p < 0.01$). Once again, post hoc tests showed that participants from the contact group recalled fewer negatives than persons from the other three groups.

Table 3. Means and standard deviations of positive and negative items recalled from the Life Story Memory Test

	Positive Mean (SD)	Negative Mean (SD)
Control	0.55 (0.11) ¹	0.42 (0.12) ¹
Education	0.53 (0.14) ¹	0.40 (0.12) ¹
Protest	0.55 (0.12) ¹	0.42 (0.09) ¹
Contact	0.62 (0.14) ²	0.33 (0.11) ²

Note.—SD = standard deviation. Results of post hoc contrasts indicate that means in each column with different superscripts differ significantly ($p < 0.05$).

Discussion

The effects of three stigma-changing conditions—education, contact, and protest—on attributions about mental illness were examined in this study. Results suggested that education and contact led to attitude change, while protest yielded no improvement. Moreover, compared to the other groups, contact seemed to improve public perceptions and recollections of persons with mental illness.

Education seemed to produce relatively broad effects, improving attributions about mental retardation and cocaine addiction as well as psychoses and depression. Interestingly, education also seemed to improve attributions about AIDS. To explain this finding, consider the group of disabilities that Weiner and colleagues (1988) called “mental-behavioral” in their study; they included drug addiction, child abuse, and AIDS. This group was characterized by “aberrant behavior” that led to the disability. Hence, the more positive attributions about cocaine addiction that resulted from education seemed to spread to AIDS. Despite the breadth of these findings, note that education had no effect on attributions related to physical disabilities like cancer. Hence, education seemed to yield a specific effect on attributions related to mental-behavioral disabilities.

The effects of education were most noticeable on stability attributions. Namely, research participants who completed the education condition seemed more willing to agree that persons with mental-behavioral disabilities benefit from medical and psychotherapeutic treatments and, therefore, have the potential to recover. Views about controllability seemed less amenable to education; this finding is unfortunate because controllability attributions have been found to be related to family attitudes and societal rejection (Weissman et al. 1993; Crandall and Moriarty 1995; Hooley and Licht 1997).

Analyses of participants' comments about the education process provided additional information about the impact of this stigma-changing strategy. Namely, research

participants who rated the leader as more interesting, believable, and likeable showed greater improvement in stability attributions. The importance of and interest in education topics did not seem to correlate with change in stability attributions. Hence, having a reasonable argument that challenges myths about mental illness may not be sufficient; participants also value credible and competent leaders.

The effects of contact on attributions seemed to yield narrower and more specific results. Research participants showed improved attributions about the groups targeted in the study: depression and psychoses. Contact led to improved attributions about the controllability and stability of depression and the stability of psychosis. In addition, contact was the only stigma-changing strategy that affected subsequent processing of information about persons with mental illness. Namely, participants who completed the contact condition recalled more positive and less negative information about the life story of individuals with mental illness. Future research should examine how characteristics of contact affect change in public attitudes. Surprisingly, participants' ratings about the credibility of contacts did not correlate with attribution change.

Protest seemed to have no significant effects on attribution change; in fact, it failed to change attributions for scales that were shown to improve significantly in the control group as the result of completing the attribution measure twice. Moreover, protest seemed to have no effect on recollections of the life stories of persons with mental illness. What factors account for the absence of attribution change after protest? Studies of memory rebound because of attitude suppression suggest that protest may have limited social cognitive effects. According to this model (Macrae et al. 1994a; Macrae et al. 1996), the act of trying to suppress a negative attitude about a minority group actually maintains that knowledge structure in working memory. As a result, individuals who participate in protest programs are more sensitized to, and thus more likely to recall, negative information about mental illness. Research on this model suggests, however, that negative recollections are significantly greater in control groups, a hypothesis that was not supported in this study. Moreover, research has not directly examined the effects of suppression rebound on attitude and attribution change.

Alternatively, the absence of change because of protest may be explained by Brehm's (1966) notion of psychological reactance (Clark 1994; Dowd et al. 1994; Fogarty 1997). According to this theory, persons are less likely to comply with a request when that request is perceived as limiting choices. Increasing external pressure decreases compliance. Participants in the protest group were less likely to view disabled groups benignly because they were ordered to do so. Reacting to the perceived restriction of choice leads to no change in attributions.

Failure to show change in attributions after protest does not suggest protest should be discounted as a stigma-changing strategy altogether. Typically, protest in relation to psychiatric stigma has been used to suppress behavior, not attitudes and attributions (Corrigan and Penn, in press). For example, advocates have used protest strategies to challenge stigmatizing representations of mental illness in the media. Future investigations need to adopt a controlled research design, like the one used in this study, to test the impact of protest on behavior. For that matter, future research also needs to examine the impact of education and contact on behavior. Do improved attributions lead to more affirming behaviors on the part of the public (e.g., joining stigma-changing campaigns against stigmatizing media sources)? Of equal importance, do improved attributions lead to diminished discriminatory behavior? For example, are landlords less likely to withhold housing opportunities as a result of programs like these?

The strategies tested in this study were relatively limited. Future research needs to determine whether the immediate effects of stigma change persist over time. Do participants who change attributions as the result of education and contact continue to endorse the more positive attributions months or years later? Perhaps longer programs that provide distributed exposure to myths and contacts are needed. Moreover, future research needs to include field-based designs where the impact of education, contact, and protest efforts of advocacy groups can be examined. Although there is much to be studied, research like this suggests that a combination of stigma-changing strategies and biopsychosocial treatments will provide the best outcomes and opportunities for persons with mental illness.

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