

Mental Illness Stigma Reduction Interventions: Review of Intervention Trials

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Abstract

This article reviews the literature evaluating the effectiveness of various stigma reduction interventions related to mental health illnesses. An integrated search of the English language literature from 1998 to May 2008 was done using CINAHL, Medline, PubMed, Scopus, and PsychINFO databases. The results of this review emphasize that experimental clinical trials hold promise for providing evidence-based data that can be used in mental health practice. Educational and contact-based strategies used in various stigma reduction programs resulted in the most durable gains in knowledge as well as positive attitudinal and behavioral changes needed to decrease the stigma associated with mental illness. Special stigma reduction programs are to be planned for adolescent and elderly targets. Future studies have yet to be designed to identify cost-effective stigma reduction programs. Moreover, interventional studies from different cultures are encouraged. Cross-cultural interventions need to be evaluated and modified to ensure providing culturally relevant interventions.

Keywords

stigma, mental illness, antistigma intervention, social distance, education program

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Stigma is still a primary issue that concerns mental health care providers throughout the world. According to the Surgeon General's report on mental health (U.S. Department of Health and Human Services [USDHHS], 1999), mental illness stigma interferes with quality of life and contributes to worsening consequences. Discrimination in social interactions, disturbed family relations, dissatisfaction in managing daily activities related to feelings of overwork, stress, and the burden of helping ill relatives to perform their daily activities were among the most reported impacts of stigma (Sartorius & Schulze, 2005). Mental illness stigma is also considered a devastating barrier to providing a high quality of mental health care and contributes negatively to the quality of life, not only for persons with mental illness but also for their relatives, community, and health service providers (Sartorius & Schulze, 2005). Therefore, the National Institute of Mental Health (NIMH, 2006) identified stigma as a primary area of interest for further research.

The extensive publications in the field of mental illness stigma in academia and in the social science arena are reflected by the considerable interest paid to antistigma programs associated with mental illness in recent years. This review of the literature evaluates the effectiveness of various stigma reduction interventions related to mental health illnesses. This review will also expand understanding of the broad programs and policies derived from the integration of behavioral and social sciences. Correspondingly, these programs and policies will remove barriers to care and improve engagement in treatment for those already in care, and improve mental health services to provide a good quality of life for people with mental illnesses nationally and internationally.

Mental Illness Stigma

In 2001, the World Health Organization (WHO, 2001) estimated that more than 25% of people worldwide have been diagnosed with mental illness at least once in their lifetime. According to the NIMH, an estimated 26.2% of Americans age 18 years and older suffer from a diagnosable mental illness in any given year (Kessler, Foster, Saunders, & Stang, 1995). In addition, the Global Burden of Disease 2000 estimated that mental and neurological conditions accounted for 30.8% of all years lived by individuals with disabilities (WHO, 2001). Of the more common mental conditions (depression, bipolar disorder, schizophrenia, and anxiety disorders), depression causes the greatest degree of disability, accounting for nearly 12% of all disabilities (WHO, 2001). Various barriers prevent people with mental illness from seeking and obtaining appropriate mental health care. Racial, ethnic, familial, cultural, and

stigma factors are among the most reported barriers that hinder help-seeking behaviors or maintaining treatment, which, in turn, adds to the burden of these disorders (USDHHS, 1999). Clearly, stigma directed at persons with mental illness is an important consideration for social advocates and health policy makers as well as professionals in clinical practice settings (Weiss, Ramakrishna, & Somma, 2006).

In the last decade, the number of national and international initiatives used to fight mental illness stigma has markedly improved (LeBel, 2008). Although the stigmatization of people with mental illness is well documented in the research literature, only recently have efforts been made to evaluate the efficacy of the various extant stigma reduction programs. The most recent reviews of stigma reduction strategies (LeBel, 2008) and public attitudes (Angermeyer & Dietrich, 2006) recommended undertaking further studies to better delineate an empirical basis for designing evidence-based interventions that can correct mistaken beliefs about mental illness and change attitudes toward people with mental illness.

The concept of stigma is rooted in history and social science. Stigma has various meanings and definitions and has been conceptualized by scientists from diverse disciplines (Link, Yang, Phelan, & Collins, 2004). Definitions of stigma are still being debated, and no consensus has yet been reached on the usefulness of only one definition (Link et al., 2004). Goffman's (1963) work on defining stigma has been widely cited in recent research. This work spawned an abundance of inquiry into the nature, sources, and consequences of stigma (Link et al., 2004). One meaning that can be inferred from this insightful analysis is that stigma is a relationship between an attribute and a stereotype (Goffman, 1963). In addition, perceived stigma refers to defective and negative social attitudes toward a distinctive physical or behavioral characteristic of a person or group (Goffman, 1963).

Many of Goffman's ideas and observations are still employed when conceptualizing and measuring stigma (Link et al., 2004). The two leading models for conceptualizing stigma (Rüsch, Angermeyer, & Corrigan, 2005) are the model of stigma components by Link and Phelan (2001) and Corrigan's cognitive-stigma model (2000). Link, Struening, Cullen, Shrout, and Dohrenwend (1989) presented the "modified labeling theory approach to mental illness," and proposed that "even if labeling does not directly produce mental disorder, it can lead to negative outcomes" (Link et al., 1989, p. 400). The rationale behind this hypothesis is that the degree that individuals believe they will be devalued and discriminated against directly corresponds to the degree of them feeling threatened or stigmatized in their interactions with others (Link et al., 1989). The "modified labeling theory" has been further tested and guided

the development of one of the main domains used when studying the stigma of mental illness, that is, “self- stigma” (Link & Phelan, 2001).

Link and Phelan (2001) defined stigma as the co-occurrence of the components used in labeling, stereotyping, separation, status loss, and discrimination. This model led to what is known as “self-stigma” or “stigma perception,” which is the extent to which an individual believes others stigmatize him or her because of mental illness (Link & Phelan, 2001). In addition, stigma perception varies in other stigmatizing conditions, such as HIV status, obesity, cancer, and short stature (Link & Phelan, 2001). It is thus reasonable to recognize the disparity in how stigma is defined and perceived, so long as the stigmatizing condition is specified (Link et al., 2004).

Public stigma encompasses reactions of the general public toward a group based on individual stigma directed toward that group. People are used to distinguish among groups in a society and to differentially label groups with diverse attributes. Thus, Corrigan’s (2000) stigma model has identified different cognitive, emotional, and behavioral features of public stigma. The model focused on the cognitive and behavioral aspects of “public stigma.” This includes stereotype (cognitive knowledge structure), prejudice (cognitive and emotional consequence of stereotype), and discrimination (the public behavioral consequence of prejudice). These aspects of mental illness stigma are used to examine the impact of labeling disability as “mental illness” by way of these three attitudinal domains. In addition, these aspects can be used to evaluate stigma reduction attitudes and behaviors depicted by different stigma reduction public initiatives (Rüsch et al., 2005).

A more recent definition of stigma was proposed by Major and O’Brien (2005) in which the stigma of mental illness is “relationship- and context-specific; and that it does not reside in the person but rather within a specific social context” (p. 395). In addition, people who are stigmatized have (or are believed to have) an attribute that marks them as different and causes them to be denigrated (Major & O’Brien, 2005).

Purpose

Stigma reduction initiatives are increasingly being used around the world. There are reports in the literature of many national and international campaigns and educational programs that advocate and promote interventions to reduce mental illness stigma and its devastating impact on individuals thus afflicted (Angermeyer & Dietrich, 2006; Corrigan & Gelb, 2006; LeBel, 2008). However, there is a paucity of empirical research evaluating the effectiveness

of such programs (LeBel, 2008). This review of the literature evaluates the effectiveness of various stigma reduction interventions related to mental health illnesses. This review further identifies the different approaches and strategies used to assess the efficacy of such interventional programs. Understanding these parameters will lead to establishing clinical care standards that can be used in the field to fight stigma and decrease its damaging consequences for the specific target(s). Interventional programs have focused on stigmatized individuals or their caregivers, cohorts such as landowners and employers who might stigmatize or discriminate against a specific group, or the general public's negative attitudes and mistaken beliefs that perpetuate mental illness stigma and discrimination (Angermeyer & Dietrich, 2006; Corrigan & Gelb, 2006; LeBel, 2008).

Method

Literature Search

Published peer-reviewed research articles were included in this review. A computer search was conducted of CINAHL, PsychINFO, PubMed, Medline, and Scopus from 1998 through 2008. The keywords used to interrogate these databases were stigma, mental illness, stigma reduction, antistigma, education program, attitude change, and social distance. Following an electronic search, manual searches of the citations listed in the studies identified were undertaken. Furthermore, a hands-on exploration looking for relevant references from bibliographies was performed to identify related references not found in the electronic database search.

Inclusion Criteria

Reports from both primary and secondary resources were included in this review, which met the following inclusion criteria: (a) written in English, (b) aimed at evaluating an antistigma intervention, (c) described the intervention in details, and (d) focused on stigma associated with the field of mental illness, for example, stigma associated with schizophrenia, depression, or other mental illnesses. The exclusion criteria were as follows: (a) studies printed in languages other than English, (b) studies utilizing nonexperimental designs, and (c) interventions that focus on stigma from health fields other than mental illness, for example, HIV/AIDS, tuberculosis, epilepsy, and others. Stigma associated with those health contexts might be seen as relevant to mental illness

stigma, but the process and factors underlying each are different, take diverse approaches, and have variably defined endpoints (LeBel, 2008; Wells, Miranda, Bruce, Alegria, & Wallerstein, 2004).

Results

Interventional Studies

In all, 103 studies were initially identified. Only 14 interventional studies met the inclusion criteria used in this review (see Table 1). Of those, 10 were experimental (Corrigan et al., 2002; Corrigan, Larson, Sells, Niessen, & Watson, 2007; Corrigan, Watson, Warpinski, & Gracia, 2004; Finkelstein, Lapshin, & Wasserman, 2008; Griffiths, Christensen, Jorm, Evans, & Groves, 2004; Lincoln, Arens, Berger, & Rief, 2007; Masuda et al., 2007; Ritterfeld & Jin, 2006; Shin & Lukens, 2002; Wood & Wahl, 2006) and 4 were quasi-experimental studies (Altindag, Yanik, Uçok, Alptekin, & Özcan, 2006; Chung, 2005; Gaebel et al., 2008; Gould, Greenberg, & Hetherington, 2007).

General Studies' Characteristics

The targets for the interventions were community college and university students, outpatients, military personnel, or individuals from a population-based survey. The mean age of the targets ranged from 19 to 36 years. As reported, the basic biographical data of the studies' participants showed no statistically significant differences among groups over the time period studied. Pretest and posttest survey was the dominant approach among all the studies reviewed. Follow-up periods ranged from 1 week to 6 months. Pre- and postintervention response rates for most studies ranged from 78% to 100% among intervention groups compared to 77% to 95% among controls. Studies that reported lower follow-up response rates resulted in a small effect size of their outcome measurements and generally had a small sample size initially (Griffiths et al., 2004; Lincoln et al., 2008). The focus of the interventional programs was mainly on stigma associated with schizophrenia; few studies included other mental illnesses such as depression, bipolar disorder, posttraumatic stress disorder (PTSD), or mental illness in general, without specification.

Most studies reviewed looked at already existing instruments for which they provided evidence of reliability and validity (Corrigan et al., 2002, 2004, 2007; Finkelstein et al., 2008; Gould et al., 2007; Griffiths et al., 2004; Lincoln et al., 2008; Ritterfeld & Jin, 2006; Shin & Lukens, 2002). Some authors developed new instruments tailored to the intended program (Altindag et al., 2006;

Table 1. Stigma Reduction Interventions

Study (Country)	Design	Target Population	Intervention/Strategies	Outcomes Results ^a
Altindag, Yanik, Uçok, Alptekin, & Ozcan, 2006 ^b (Turkey)	Pre- and posttest with control group, quasi-experimental (1-month follow-up)	Undergraduate college students (N = 60)	1-day pilot program: Education: 2-hr lecture; causes of stigma associated with schizophrenia, common myths about schizophrenia, relationship of schizophrenia and violence. Contact (direct) with a person with schizophrenia, contact (indirect) watching a film "A Beautiful Mind."	Postintervention participants had more knowledge about causes of schizophrenia and had lower social distance score. Postintervention participants had higher scores of social distance.
Corrigan, Watson, Warpinski, & Gracia, 2004 ^b (USA)	Pre- and posttest with control group, experimental design (1-week follow-up)	Undergraduate community college students (N = 161)	Education program: Education about violence group. Education about stigma group.	Participants in the violence group reported more negative attitudes toward persons with MI: dangerous, feared, withheld help, avoid them socially, and tend to endorse segregation and coercive mandated treatment for them. Stigma group were more willing to help persons with MI and demonstrated less negative attitudes. Only participants in the stigma group demonstrated less negative attitudes at 1-week follow-up compared to baseline.
Masuda et al., 2007 ^{b,c} (USA)	Pre- and posttest with control group, experimental design (1-month follow-up)	Undergraduate community college students (N = 95)	Acceptance and commitment therapy (ACT): 2½ hr workshop training of acceptance and nonjudgmental skills for stigma toward self and others.	Postintervention group reported less attitude score that sustained over the follow-up period.

(continued)

Table 1. (continued)

Study (Country)	Design	Target Population	Intervention/Strategies	Outcomes Results ^a
Lincoln, Arens, Berger, & Rief, 2007 ^b (Germany)	Experimental	Undergraduate psychology students (N = 120)	The diathesis-stress model includes a detailed biogenetic-based (BG) or psychosocial-based (PS) explanations on various components of implicit or explicate attitudes and social distance associated with schizophrenia. Both BG and PS groups received the following: Education about the etiology of schizophrenia (from perspectives of BG and PS explanations) and contact (indirect) watching video film of a student with schizophrenia	The PS model had significant impacts on the stereotypes of dangerousness and decrease social distance among BG medical students. The BG model decrease attribution of responsibility/blame for the disorder in both BG and PS groups. It decreases stereotype of unpredictability/incompetence and social distance in BG medical group only.
Griffiths, Christensen, Jorm, Evans, & Groves, 2004 ^c (Australia)	Randomized control trial	Public adults with positive depression screen (N = 525)	Depression literacy website (Blue Pages) group. Cognitive-behavioral intervention website (MoodGYM).	Small but significant reduction in stigmatizing attitudes was reported from both groups (websites).
Finkelstein, Lapshin, & Wasserman, 2008 ^d (Russia)	Pre- and posttest with control group, experimental design (6-months follow-up)	Graduate special education students (N = 193)	Interactive learning multifaceted computer program (PG) covered three main components of stigma: cognitive, emotional, and behavioral. The materials covered the main mental disorders: schizophrenia, depression, bipolar disorders.	Knowledge gain increased significantly in both PG and reading group with PG displaying the larger knowledge gain. CAMI scores for PG were better than for RG. The BSSD scores dropped significantly in both groups. Only PG knowledge gain remained significant at 6 month.

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Table 1. (continued)

Study (Country)	Design	Target Population	Intervention/Strategies	Outcomes Results ^a
Gould, Greenberg, & Hetherington, 2007 ^d (England)	Pre- and posttest with control group, quasi-experimental design (1-month follow-up)	Adult military personnel (N = 120)	Reading program where students read two articles and a WHO brochure devoted to the problem of stigma. Psychoeducation intervention: 2½ days of trauma risk management program (TriM) by the Royal Navy; focus stress management, help-seeking attitudes, and stigmatizing attitudes associated with PTSD (using both education and contact strategies).	CAMI scores for PG were better than for RG. The BSSD scores dropped significantly in both groups. The TriM group show significant change in their attitudes about PTSD, stress, help seeking from TriM trained personnel but not from the normal military support network or general health practitioners. However, changes in the TriM group declined over time.
Gaebel et al., 2008 ^b (Germany)	Pre- and posttest with control group, panel design follow-up survey (2001-2004)	Public adults: 2001 survey (N = 7,225) 2004 survey (N = 4,622 of the same people contacted in 2001 survey)	World Schizophrenia Association National Program: The global schizophrenia antistigma program "Opens the Doors" (targeted general public) tested in two cities in Germany. Awareness program tested in another two cities. Education- and contact-based strategies were used.	Social distance decreased significantly between 2001 and 2004 (in the six cities). At the city level, those with antistigma program were the ones with the significant change only. The overall knowledge of the antistigma initiatives was rather low (no advertisement campaign). People who knew one of the antistigma initiatives reported less social distance in 2004 compared to 2001, and people who had contact with a person with MI were more frequently to know one of the antistigma initiatives.

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Table 1. (continued)

Study (Country)	Design	Target Population	Intervention/Strategies	Outcomes Results ^a
Wood & Wahl, 2006 ^b (USA)	Pre- and posttest with control group, experimental design (no follow-up)	Undergraduate college students (<i>N</i> = 114)	The In Our Own Voice (IOOV) national program generated and presented by mental health consumers include the following: (a) Education—a presentation of an 11-min video that shows different segments titled Dark Days, acceptance, treatment, coping, successes, hops, dreams presented by nine consumers. (b) Contact (direct)—After the presentation, the nine consumers talked to the audience about their personal stories and then have an interactive (face-to-face) discussion with audience members.	Knowledge and attitude scores increased significantly in the experimental “IOOV” group and a significant decrease in their social distance scores and their willingness to accept a person with a MI.
Chung, 2005 ^b (China)	Pre- and posttest survey with control group (no follow-up)	Undergraduate medical students (<i>N</i> = 166)	Education clerkship includes 6-8 weeks rotation of clinical psychiatric, and a 1-hr stigma change seminar included contact (direct) with mental health consumers and education on some misconceptions about psychiatric patients. Two outpatients (schizophrenia and bipolar) invited to present their history of MI, stigma experience.	Concern about dangerousness was the most consistent predictor of diminished helping behavior toward people with MI. Attitudes toward people with MI improved significantly after exposure to the clerkship and stigma-change seminar.

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Table 1. (continued)

Study (Country)	Design	Target Population	Intervention/Strategies	Outcomes Results ^a
Ritterfield & Jin, 2006 ^b (USA)	Pre- and posttest with control group (structural equation design; 1-week follow-up)	Undergraduate college students (N = 165)	Entertainment education program: Eight conditions included six manipulated conditions, a control watch only the movie "Angel Baby" and a group watched a trailer prior to movie. Three aspects of an educational trailer (value added component; VAC): advocates perspectives (professional vs. patients viewpoints), message style (general deductive vs. personal/inductive vs. personal /inductive plus footage from the movie), and placement of VAC (prior to vs. after movie).	Knowledge performance scores were significantly increased and attitude components (behavioral, cognitive, and emotional) decreased over all conditions. The movie alone had a smaller educational and knowledge effect on the audience than when the educational trailer attached to it. A trailer placement after the movie affect stigma reduction attitudes but not the knowledge gain. No difference was seen between follow-up scores compared with pretest scores.
Corrigan et al., 2002 ^b (USA)	Pre- and posttest with control group, experimental design (1-week follow-up)	Community college students (N = 213)	Two education and two contact presentations: Education on personal responsibility. Education on dangerousness. Contact with a mentally ill person where personal responsibility is discussed. Contact with a mentally ill person where dangerousness is discussed.	Both two-education and two-contact conditions led to significant improvements in AAQ and SDS. Contact group with focus on responsibility, significantly improved AAQ anger, fear, avoidance, dangerousness scores over two-education conditions. Significant interaction was found for the SDS with better results caused by both contact conditions, which led to greater donations (real-world behavioral assessment)

(continued)

Table 1. (continued)

Study (Country)	Design	Target Population	Intervention/Strategies	Outcomes Results ^a
Corrigan, Larson, Sells, Niessen, & Watson, 2007 ^b (USA)	Pre- and posttest with survey design (1-week follow-up)	4-year community college students (N = 244)	Two 10-min videotaped presentations: Contact videotape presented a person who relayed his life history, his experience with disease. Education videotape presented the same person reviewed the myths and facts of MI.	than education. Significant change in AAQ scores and SDS at follow-up was due only to contact conditions. Postintervention: The contact videotape has a broader impact on stigma change than does education. Contact videotape has positive effects on the behavioral component of stigma, where students were less likely to endorse segregation or coercion as treatment choices for persons with MI. These positive changes maintained at follow-up.
Shin & Lukens, 2002 ^{c,d} (USA)	Pre- and posttest survey experimental design (1-week follow-up)	Outpatients Korean American with chronic schizophrenia (N= 48) Psychoeducation cognitive-behavioral model.	Psychoeducation Program: 10-weekly culturally sensitive psychoeducational group sessions (each of 90 min): A lecture to enhance learning and increase attention (illness definition, medication side effects, relapse and crisis intervention, managing stigma and stress, and help resources).	Severity of psychiatric symptoms, and the level of stigma decreased significantly and coping skills improved significantly for the experimental group. These changes maintained over 1-week follow-up.

Note: N = sample size; MI = mental illness; CAMI = Community Attitudes Toward the Mentally Ill Scale; BSSD = Bogardus Scale of Social Distance; PTSD = posttraumatic stress disorder; AAQ = Acceptance and Action Questionnaire; AQ = Attribution Questionnaire; SDS = Social Distance Scale.

^aStatistically significant at $p < .05$.

^bPublic stigma-based intervention.

^cSelf-stigma-based intervention.

^dCulture stigma-based intervention.

Gaebel et al., 2008; Wood & Wahl, 2006), or modified an existing intervention program with no further evidence from testing the new modified instrument (Chung, 2005; Masuda et al., 2007). The remaining studies reported nothing regarding the reliability or validity evidence of the instruments used to measure the study outcomes. All measures were self-reported questionnaires that were answered either by "yes, agree" or "no, disagree" statements or a scale rated either on a 4, 5, 7, or 9-point Likert-type scale. These methods have the potential for a socially desirable bias, so their study results should be interpreted with caution. The length of the intervention program or projects were reported and were found to range from 150 min (Masuda et al., 2007) to 6 weeks (Griffiths et al., 2004), excluding the follow-up period.

Stigma Reduction Strategies

Several strategies for stigma reduction are reported in the reviewed studies. Within these strategies (see Table 1), numerous interventions, each with specific target groups, content, and duration are evaluated. These interventions and strategies can be evaluated from the perspective of self-stigma, public-stigma, and specific or cultural stigma. In the sections below, these different interventions and their strategies are presented in detail. Stigma reduction strategies were considered to denote significant improvement at a p value lower than the level of significance of $\alpha < .05$.

Education- and Contact-Based Programs

Most of the experimental studies described a comparative approach in which two or more stigma reduction strategies were tested to determine which of them led to better stigma reduction outcomes. For example, the study by Corrigan and colleagues (2002) evaluated the two stigma reduction strategies of education and contact on local college students' perceptions of personal responsibility and dangerousness of mental illness. In their evaluation, both education and contact strategies led to significant ($p < .005$) improvements in behavioral decisions using the Attribution Questionnaire (AQ) and the Social Distance Scale (SDS). However, these changes were only because of contact conditions at 1-week follow-up (Corrigan et al., 2002). This particular program assessed a direct behavior change as students made donations to the National Alliance for the Mentally Ill of the South-Suburbs (NAMI-SS). Contact with a person with mental illness contributed more significantly to this behavior change than did educational conditions (Corrigan et al., 2002). A similar study by Corrigan and colleagues (2007) evaluated both strategies; education about

myths and facts of mental illness and contact with a person with mental illness who relayed his or her life history, his or her experience with the illness. Again, contact seems to have had a broader impact on stigma change than education. Contact had positive effects on the behavioral component of stigma, wherein college students were less likely to endorse segregation or coercion (Corrigan et al., 2007).

Another study assessed the impact of how the public perceived persons with mental illness, their potential for violence, and the stigma of mental illness (Corrigan et al., 2004). Three groups of community college students separately received an education program about violence, an education program about stigma, and a control program in which issues of mental illness were not mentioned. In this study, participants educated about violence were significantly more likely than the two other groups to report that persons with mental illness are more dangerous, should be feared, should have help withheld, and were more likely to want to avoid them socially. They also tend to endorse the idea that persons with mental illness should be segregated from the community and promoted the approach of requiring coercive or mandated treatment. On the other hand, those in the stigma education program were more willing to help persons with mental illness and demonstrated less negative attitudes at posttest and 1 week follow-up compared to baseline (Corrigan et al., 2004). Although the previous mentioned studies evaluated stigma reduction programs from the perspectives of the general public, generalization should be considered with caution as these strategies were evaluated among community college students using self-report measures.

Another stigma reduction intervention is based on adopting an entertainment-education strategy, a study by Ritterfeld and Jin (2006). Their intervention program evaluated whether an accurate empathic media portrayal combined with an educational trailer (value added component-VAC) increased knowledge about schizophrenia and contributed to stigma reduction (Ritterfeld & Jin, 2006). In this study, viewing an accurate and empathic movie portrayal increased knowledge (Ritterfeld & Jin, 2006). Furthermore, the educational trailer increased both knowledge acquisition and influenced stigma reduction; the behavioral component of stigma was the most difficult to change compared to emotional or cognitive ones (Ritterfeld & Jin, 2006).

Cognitive and Behavioral-based Program

Masuda and colleagues (2007) evaluated the impact of acceptance and commitment therapy (ACT), a contextual behavioral intervention; and an educational intervention in reducing stigmatizing attitudes for psychologically inflexible

participants versus flexible individuals. Significant reduction ($p = .001$) of stigmatizing attitudes was noted for both groups postintervention and maintained after a month follow-up (Masuda et al., 2007). However, the psychologically inflexible group showed more stigmatizing attitudes than the flexible group postintervention (Masuda et al., 2007). This study suggested that acceptance and mindfulness interventions provide a new promise for the mitigation of stigma, prejudice, and self-stigma. ACT sought to undermine the impact of a perceived sense of *us* versus *them*, a major characteristic underlying stigmatization (Link & Phelan, 2001).

Web-Based and Computer-Assisted Education Program

The randomized clinical trial by Griffiths and colleagues (2004) of the effect of web-based depression literacy and cognitive-behavioral therapy interventions on stigmatizing attitudes to depression was part of a larger national Australian study about the impact of two Internet websites concerned with depression and a range of mental health outcomes. The BluePages depression information website provided information about depression, associated symptoms, sources of help, treatment, and prevention. A second website, MoodGYM, provided five models that covered cognitive behavior therapy, behavioral methods for overcoming dysfunctional thinking, relaxation, problem solving, assertiveness, self-esteem training, and coping strategies. Participants with depression were randomly assigned to one of three interventions, the two websites and an attention control website in which answers to open-ended questions about depression influential factors were provided weekly over the 5 weeks study time (Griffiths et al., 2004). As noted in this study, both a web-based depression literacy intervention and a web-based cognitive-behavioral intervention resulted in a small but statistically significant reduction in stigmatizing attitudes toward depression (Griffiths et al., 2004). However, this study was the first of this type so that its results should be considered with caution, particularly as both websites programs were designed specifically for depression and not other mental illnesses. Thus, the trial was not neutral as the control group was given information about depression. Furthermore, no follow-up assessment of the impact of both websites was conducted. Nonetheless, this study assessed stigma reduction from the perspectives of persons with depressive symptoms, self-stigma, which was measured by the Depression Stigma Scale.

Another randomized clinical trial was conducted by Finkelstein and colleagues (2008) in Russia to evaluate the effect of a computer-assisted stigma reduction program on decreasing levels of psychiatric stigma among students

enrolled in a special education program. Students were randomly assigned to a reading group (RG), in which they read two articles and a WHO brochure devoted to the problem of stigma. The other group was a computer program group (PG) created at the University of Maryland in collaboration with St. Petersburg State University. Utilizing the interactive learning approach, the PG materials covered cognitive, emotional, and behavioral components of stigma (Finkelstein et al., 2008). In this study, knowledge gain and stigma reduction scores, which were measured by social distance, significantly ($p = .0001$) improved both in RG and PG groups (Finkelstein et al., 2008). In addition, all stigma and knowledge changes gained by the PG group during the study remained significant ($p = .0001$) after the 6-month follow-up period (Finkelstein et al., 2008). This stigma reduction program was adapted for both laypersons and prospective professionals working with stigmatized people. In addition, the simplicity, feasibility, and short questions were adapted for different students' computer literacy levels. The previous two randomized clinical trials studies demonstrated that web-based and computer-mediated interventional programs can be effective strategies for educating students or other targets about mental illnesses and for reducing stigmatizing attitudes toward psychiatric patients.

Multidimensional Stigma Reduction Program

Lincoln and colleagues (2007) applied the basics of the diathesis-stress model to compare the effect of a detailed biogenetic-based (BG) or psychosocial-based (PS) explanation model and a neutral control model on various components of implicit or explicate attitudes and social distance associated with schizophrenia. The target groups were undergraduate medical and psychology students in Germany. The intervention applied, included a leaflet on the etiology of schizophrenia (or on water in the neutral group). This was followed by a video film of a student with schizophrenia followed by questions about the factors that were relevant to the development of schizophrenia, both the BG and PS factors (Lincoln et al., 2008). Both groups reported an overall reduction of the explicit stereotypes and social distance compared with the neutral group. The PS model showed significant ($p = .00$) impacts on the stereotypes of dangerousness and reduced social distance among medical students (Lincoln et al., 2008). The BG model decreased the attribution of patient responsibility and blame for the disorder in both groups (Lincoln et al., 2008). This study focused on etiological causes and provided no information about stigma reduction; however, it is a paradigm for stigma reduction programs in which a multidimensional and balanced approach is utilized, producing a beneficial result.

Culturally Relevant Psychoeducation Program

Shin and Lukens (2002) tested the impact of a brief psychoeducation intervention in addressing the needs of Korean American patients with chronic schizophrenia. A 10-weekly psychoeducational group sessions aimed at enhancing participant learning and increasing attention, as well as weekly individual supportive sessions, were provided to the intervention group. The control group received only weekly individual supportive sessions (Shin & Lukens, 2002). The measured outcomes, severity of psychiatric symptoms, and stigma perception decreased significantly ($p < .001$) for the interventional group compared to the control group (Shin & Lukens, 2002). Coping skills also improved significantly for the interventional versus control group (Shin & Lukens, 2002). The results of this study show that a culturally appropriate psychoeducation program can be a useful short-term treatment proxy not only for Korean Americans but also for other cultural groups residing in the United States.

The military is another arena where culturally relevant stigma reduction interventions are to be encouraged. An example of this is the British study that evaluated the Royal Navy Trauma Risk Management Program (TRiM), which seeks to modify attitudes about PTSD by Gould and colleagues (2007). TRiM is a complete PTSD psychoeducational management strategy based on peer-group risk assessment developed by the United Kingdom Royal Navy (Gould et al., 2007). The program seeks to assess the effectiveness of the TRiM in producing positive attitudes about stress, PTSD, and help-seeking from normal military support networks and from the TRiM trained personnel (Gould et al., 2007). Accordingly, the TRiM group had a significant change ($p < .05$) in attitude about PTSD, stress, and help seeking from TRiM trained personnel (Gould et al., 2007). The results of this study demonstrated that TRiM is a promising program and addition to the body of knowledge regarding evidence-based psychoeducational programs.

Current National Stigma Reduction Initiatives

Several national programs were set up to tackle the stigma of mental illness. In 1998, the World Psychiatric Association (WPA) initiated the global "Program against stigma and discrimination because of schizophrenia—Open the Doors," which is now implemented in 20 countries around the world (Sartorius & Schulze, 2005). The study by Gaebel and colleagues (2008) was conducted in Germany over 3 years (2001-2004) to evaluate the effectiveness of the "Open the Doors" program in the general population. Telephone and a panel

design follow-up surveys were conducted in six German cities over the study period: two cities were set up for stigma reduction programs, focusing on increasing public attention on the social exclusion of people with mental illness; two for an awareness program targeted at general practitioners; and the other two cities served as controls with neither program being used (Gaebel et al., 2008). Stereotypes, beliefs, and attitudes about schizophrenia and social distance toward people with schizophrenia, and the knowledge of stigma reduction projects were assessed (Gaebel et al., 2008). In general, social distance decreased significantly ($p < .001$); however, at the city level, this effect was only significant in those cities in which stigma reduction projects were implemented (Gaebel et al., 2008). The overall knowledge of the stigma reduction initiatives was low, there was no advertising campaigns and people who had contact with a person with mental illness, and they were most frequently familiar with one of the stigma reduction initiatives (Gaebel et al., 2008).

In Turkey, an association called “the friends of schizophrenia” organized stigma reduction activities in concert with the WPA Global Program against stigma and discrimination because of schizophrenia. Altindag and colleagues (2006), organized a 1-day pilot stigma reduction program in collaboration with “the friends of schizophrenia” in an effort to change attitudes toward people with schizophrenia among medical students in Harran University in Turkey. The intervention group received 2 hr of education about the causes of stigma associated with schizophrenia, common myths about schizophrenia, and the relationship between schizophrenia and violence. In addition, a person with schizophrenia introduced himself and discussed his experience with the students and finally the students watched a film “A Beautiful Mind” about a brilliant schizophrenic mathematician and his difficulties at work and in personal relationships (Altindag et al., 2006). Significantly ($p = .01$) more students in the intervention group had a more favorable view after the stigma reduction program in regard to their beliefs about the causes of schizophrenia, their intermediate social distance to people with schizophrenia (co-workers, neighbors), as well as their attitudes toward the care and management of people with schizophrenia (Altindag et al., 2006). However, the 1-month follow-up evaluation showed that the effects of a stigma reduction program are likely to lessen with time, especially in regard to social distance. In addition, no significant change was found before and after the program or after the 1-month follow-up in the control group (Altindag et al., 2006). A key point to remember is that this study employed education and both types of contact—direct (person with mental illness) and indirect (viewing a film)—as the primary stigma reduction strategies.

Stigma reductions programs and campaigns were also initiated worldwide by the WHO. Within these programs and campaigns, several strategies to tackle stigma associated with mental illnesses were applied. These focused on the promotion of contact with people who have mental illness, education of target groups, and 'protest against discriminative behaviors (Corrigan et al., 2001). In their study, Wood and Wahl (2006) evaluated the National Alliance for the Mentally Ill's (NAMI) program "In Our Own Voice" (IOOV) among undergraduate students from George Mason University. In the intervention group, students attended the IOOV national program presented by mental health consumers, which includes the presentation of an 11-min video with different segments titled Dark Days, acceptance, treatment, coping, successes, and hopes and dreams. These segments were presented by nine consumers who after the presentation talked to the audience about their personal stories and then had an interactive (face-to-face) discussion with audience members (Wood & Wahl, 2006). The consumers had various mental illnesses, including schizophrenia, postpartum depression, bipolar disorder, and depression and were composed of various age groups, gender, and ethnicity groups (Wood & Wahl, 2006). The results of this study showed that knowledge and attitudinal scores increased significantly ($p < .01$) in the IOOV group compared to the control; the IOOV group showed a significant increase in knowledge and attitudinal scores from pretest to posttest; and finally, the IOOV group social distance scores improved significantly in their report of willingness to accept a person with a mental illness (Wood & Wahl, 2006).

Program Outcomes

Changes in stigma achieved by the various stigma reduction interventions in this review were measured by gain in knowledge about mental illness, decrease in social distance score; a proxy measure of attitude toward individuals with mental illness assessed by either the SDS or by the Community Attitudes Toward the Mentally Ill scale (CAMI); or, finally, using the Bogardus Scale of Social Distance (BSSD). An increase in psychological flexibility score as shown by the Acceptance and Action Questionnaire (AAQ), or improvement on behavioral decisions using the AQ, including its nine factors of responsibility, pity, anger, help, violence, dangerousness, fear, segregation, and coercion, were also used to depict changes in mental illness stigma as a result of the intervention provided. Other examples of outcomes measured were decreased implicit and explicit attitudes, decreased personal and perceived stigma, improved depression literacy and cognitive behavioral literacy, improved help-seeking attitudes and psychological well-being, decreased

severity of psychiatric symptoms, and improved coping skills. These positive outcomes were reported by the interventional groups but not necessarily for the controls. In addition, the sustainability of positive outcomes over the follow-up periods reported varied according to the strategies being used to conduct the stigma reduction intervention (see Table 1 for more details).

Discussion

This review sought to identify and organize the published literature evaluating the effectiveness of various stigma reduction interventions in the context of mental health as well as explore the different approaches used to assess the efficacy of such interventional programs. The discussion described research outcomes that were consistent or sufficiently specific for the quality of the intervention being assessed and that might be considered as potential evidence-based practices as revealed through the results of a given stigma reduction intervention.

Knowledge Gain and Attitude Change

Self-stigma reduction interventions. Studies showed a consistent and statistically significant ($p < .05$) knowledge gain or a decrease in social distance score (a proxy-measure of attitude change), among experimental groups compared to controls postintervention. For example, the 1-day pilot stigma reduction program (Altindag et al., 2006) tested the knowledge and attitudes of medical students in two local universities in Turkey. As this program brought together education, personal contact, and visual material, it is difficult to determine which of the components was responsible for the outcome of the program. An ongoing delivery of the discrete intervention components might be beneficial in maintaining students' knowledge or even increasing it.

In studies that designed a web-based education program (Griffiths et al., 2004), the results were consistent in regard to knowledge gain and positive attitude change. The Griffiths et al. (2004) study aimed to evaluate the "Blue Pages," a depression literacy website and the "MoodGYM" cognitive behavioral therapy skills training website in reducing stigma associated with depression. Although the two websites reported significant results, the effect size of change was very small (Griffiths et al., 2004). This might be due to the length of the program (6 weeks), where participants' commitment was hard to maintain, or because the program was initially designed as a literacy depression website but not a stigma reduction website. Again, such factors as program

length, purpose, and outcomes are important variables to consider when designing a stigma reduction program.

Another main issue in designing these programs is the assurance of its applicability and appropriateness for the target group for which it is designed. The school-based controlled trial that tested the effectiveness of the "MoodGYM" cognitive-behavioral program among adolescent students revealed small relative benefits for depressive symptoms, self-esteem, and attributional style (O'Kearney, Gibson, Christensen, & Griffiths, 2006). Assurance that enough of the program is understood and that people who could potentially benefit from the program access and maintain engagement with it is highly recommended if the program is to succeed (O'Kearney et al., 2006). Thus, designing a stigma reduction intervention program requires a comprehensive baseline assessment of which attitudes and knowledge are needed by the targets being examined so as to achieve the program's intended outcomes.

In their computer-mediated program (Finkelstein et al., 2008), special education students in the computer group showed more positive changes compared to the RG. The interactive approach of presenting information allowed participants to test their comprehension of what had been presented immediately and in an ongoing fashion, which enabled them to maintain this knowledge 6 months after the program ended (Finkelstein et al., 2008). The rapid invasion of education technology in designing web-based materials or computer-mediated educational programs is a promising new approach. The targets' special needs, their computer literacy levels, and their future professions' outcomes are the program's internal guidance for promoting stigma reduction programs. In addition, computer-mediated stigma reduction programs can be modified to disseminate information about mental illness and to design stigma reduction programs for medical settings, special education students, social workers, nursing students, and other public targets. When thinking of disseminating or involving large numbers of participants, this approach is one of the least costly and most effective, taking into consideration the length and content of the program as well as the educational strategies they use.

Public-stigma reduction interventions. In an attempt to evaluate the impact of two types of public education programs on public perceptions of persons with mental illness and their potential for violence and the stigma of mental illness, Corrigan and colleagues (2004) found that the content of a given education program might affect knowledge gained and attitude change among participants. Those in the stigma education program were more willing to help persons with mental illness and demonstrated more positive behavioral

attitudes toward people with schizophrenia (Corrigan et al., 2004). In contrast, the participants educated about violence reported that persons with mental illness are more dangerous, should be feared, withheld from help, and avoided socially (Corrigan et al., 2004). Thus, advocates and policy makers should collaborate with the various media resources to assure the delivery of positively challenging topics, messages, and facts about mental illnesses as delivered to the general public.

This approach of indirect contact was also used by Corrigan et al. (2007) and revealed that a contact-focused film in which a psychiatrist presented a meeting with a mentally ill patient was more effective in increasing knowledge gain and changing students' attitudes toward people with mental illness than an educationally focused film (Corrigan et al., 2007). In this particular study, not only does the personal contact seem to have a broader impact on stigma change than education per se, but it also has positive effects on the behavioral component of stigma, whereby students were less likely to endorse segregation or coercion (Corrigan et al., 2007).

Most programs in this review lacked a measure of "real" behavioral change and failed to assess to what extent the intended program challenged the participants' behaviors in a "real-world" setting. More studies are needed to demonstrate that a causal relationship exists between the knowledge gained from a stigma reduction intervention and the effect of that intervention on behavioral change. Corrigan and colleagues (2002) provided an example of a real-world helping behavior assessment. They evaluated the effectiveness of an education and contact-based program on two components of mental illness stigma: personal responsibility and dangerousness. Although the two programs led to significant improvements in AQ scores and SDS scores after the intervention, contact with a mentally ill person resulted in a greater consistency of results and a significant change in helping behavior in the form of donating money to NAMI (Corrigan et al., 2002).

The inclusion of a real entertainment media (Ritterfeld & Jin, 2006), in which facts and personal stories are presented to participants by watching the movie "Angel Baby" about schizophrenia, yielded positive outcomes, which were sustained over time. The addition of an educational trailer (VAC) after the movie presentation revealed more positive results than those from watching it alone or by presenting this educational trailer before the film (Ritterfeld & Jin, 2006). More studies with similar approaches are needed to support these findings and to promote the inclusion of such strategies in stigma reduction programs for different target groups.

The results of the stigma reduction interventions reported in this review were also viewed in relation to the inclusion of and the direct contact with

recovered mentally ill persons. This form of direct contact with those afflicted highlights the truth that mentally ill persons can be very productive and are able to maintain a good quality of life when services are effectively delivered (Sartorius & Schulze, 2005; Wood & Wahl, 2006). Thus, this novel aspect of including consumers has led to the addition of a new outcome to measure: empowering persons with mental illness (Corrigan et al., 2002; Wood & Wahl, 2006). According to Wood and Wahl (2006), their IOOV program revealed empirically positive and sustained results among university students. This national program is promoted by recovered, mentally ill consumers with the aim of augmenting knowledge and changing negative attitudes toward people with mental illness. Pinto-Foltz and Logsdon (2009) asserted that there is a lack of empirical evidence on the studies evaluating national stigma reduction programs. Therefore, it is difficult to determine which stigma programs/interventions are effective and how these programs/interventions work to reduce stigma. The IOOV and the WPA's global stigma reduction initiatives—Open the Doors, like other national or international programs—will require further empirical evidence to support its effectiveness in reducing the stigma associated with schizophrenia as well as with other stigmatizing mental illnesses (Altindag et al., 2006; Gaebel et al., 2008; Pinto-Foltz & Logsdon, 2009). The applicability of this type of program needs to be tested among various targets of various age groups and from different cultural backgrounds, and through this comparison the validity can be more effectively assessed.

Specific and culture stigma reduction interventions. The study by Shin and Lukens (2002) was the only study reviewed that tested the effectiveness of a culturally relevant psychoeducation program among Korean American chronic mentally ill outpatients. Participants in the psychoeducation group reported less symptom severity, less stigma perception, and greater coping skills compared to the controls who received individual standard supportive care (Shin & Lukens, 2002). Although this topic is out of the scope of this review, assuring the delivery of a program that is culturally relevant is a necessity even if it is administered to groups from the same target population. An example is the study by Gould et al. (2007), where the authors cautioned that generalizing the results to the other army/navy groups should be considered carefully. Navy personnel's experience of stigma and stress associated with PTSD are context specific and can vary from one group to another, which in turn leads to different endpoints for the intended stigma reduction education program. The authors of this study revealed the need to conduct additional navy-related stigma research to test the applicability of such a program to various cultural group outcomes.

With the fast growth of stigma-related research in many academic and social science settings, it is hardly surprising that stigma reduction programs associated with mental illness have attracted considerable attention in recent years. In this review, interventional studies are reviewed for their effectiveness on stigma reduction from the perspective of individuals with mental illness “self-stigma,” the perspectives of public toward people with mental illness “public-stigma” and “specific” or cultural stigma, with a great deal of attention inclined to the several strategies used for stigma reduction interventions. The results of this review supported the fact that experimental studies are a promising approach for providing evidence-based strategies that can be used in practice. In addition, educational and contact-based strategies toward developing stigma reduction programs were found to be promising and effective approaches for achieving the most sustained knowledge gain or positive attitudinal behavioral changes needed to decrease the stigma associated with mental illness. However, the evidence lacked the support of repetitive or comparative results of applying the same program in different contexts to assess the overall generalizability of the programs’ usefulness. This need will be achieved successfully only when a multidisciplinary team of policy makers, health care providers, media representatives, and mental health consumers and their families collaboratively design stigma reduction paradigms (Pinto-Foltz & Logsdon, 2009). It is clear from the studies that a comprehensive stigma reduction program is needed for implementation nationally and/or internationally as psychiatric disease has no borders. An interesting finding that has future applicability is that programs comprised of “a multifaceted” approach yielded the most positive results that were sustained over time. Thus, more collaborative studies are needed to achieve the intended outcome and lessen the destructive effects associated with mental illness stigma in a more effective manner.

This review was limited by the exclusion of empirical studies about the media’s role in promoting mental illness stigma and study results from health fields other than mental illness. Interventions that tackle local discrimination in creative and successful ways have been omitted from this review but this does not denigrate the value of their contributions. Examples of such interventions are those attacking the media’s view of mental illness (Stuart, 2003), or interventions to change police officers’ attitudes toward people with mental illness (Compton, Esterberg, McGee, Kotwicki, & Oliva, 2006; Pinfold, Huxley et al., 2003), or school-based programs (Pinfold, Toulmin et al., 2003; Spagnolo, Murphy, & Librera, 2008; Stuart, 2006; Watson et al., 2004), in which nonexperimental designs were used.

In addition, this review lacks empirical comparative studies initiated by or targeted toward nursing students and mental health nurses. Nursing students

are the future care providers for mentally ill patients. Their role in the care provided and in diminishing the destructive sequences of stigma is of great importance and needs further study. The Pinto-Foltz and Logsdon (2009) article pointed to the nurses' contributions in the context of reducing mental illness stigma. Nurses often facilitate communication among disciplines, clients, and health care providers; nurses speak the language of different health care disciplines and bring a unique perspective to the table when collaborating with other members of the health care team; nursing is poised to emerge as a leader in the national stigma initiatives by facilitating dialogue between groups and disciplines for a unified effort in stigma reduction (Pinto-Foltz & Logsdon, 2009).

Stigma research in adolescents is scarce and accounts for less than 4% of stigma research (Link et al., 2004). Thus, special stigma reduction programs remain as goals to be initiated with adolescents, with considerable attention to the outcomes designed for this target group. Future studies have yet to be designed to identify cost-effective, stigma reduction programs. Moreover, interventional studies from different cultures are encouraged. Cross-cultural interventions need to be evaluated and modified to ensure providing culturally relevant interventions. Finally, clinical implications from the stigma reduction interventions/programs should be considered with caution until more evidence is available and a rigorous overall appraisal of the evidence is undertaken (Pinto-Foltz & Logsdon, 2009). At that time, evidence-based practices can be promoted confidently.

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