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TECHNICAL REPORT

Interventions to Reduce Mental Health Stigma and Discrimination

A Literature Review to Guide Evaluation of California's Mental Health Prevention and Early Intervention Initiative

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Sponsored by the California Mental Health Services Authority



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Preface

This review is one of a series of three literature reviews conducted by RAND to inform its evaluation of the California Mental Health Services Authority (CalMHSA) Prevention and Early Intervention (PEI) initiatives. CalMHSA is an organization of county governments working to improve mental health outcomes for individuals, families, and communities. Prevention and Early Intervention programs implemented by CalMHSA are funded through the voter-approved Mental Health Services Act (Prop. 63). Prop. 63 provides the funding and framework to expand mental health services to previously underserved populations and all of California's diverse communities.

CalMHSA's PEI initiatives fall into three related areas: stigma and discrimination reduction, suicide prevention, and student mental health, with several programs within each initiative area. RAND is charged with conducting evaluations at the program, initiative, and statewide levels. We reviewed the evaluation literature in each PEI initiative area to understand the state of the art in each area, including relevant theories of change, what is and is not known about PEI program effectiveness, and what kinds of methodologies have been previously used in evaluations of PEI programs. These are not comprehensive reviews of the broader literatures addressing the topics of mental health stigma, suicide, and student mental health.

The information contained in this report should be of interest to a wide range of stakeholders both within and outside the state of California, from organizations and counties implementing PEI programs, to policymakers making key funding decisions in this area. It will help stakeholders understand the evidence base for preventive interventions, including what kinds of programs have empirical support, and the areas where further evaluation is needed.

This document was prepared with the input of stakeholders across the state of California. In particular, members of the Statewide Evaluation Experts (SEE) Team provided input to guide the development of the document and feedback on a draft of the report. The SEE is a diverse group of CalMHSA partners and community members, including CalMHSA board members, representatives of counties of varied sizes, representatives of the California Mental Health Directors Association, a representative from the California Institute for Mental Health, members of the Mental Health Services Oversight and Accountability Commission, a representative from the California State Department of Mental Health, individuals with expertise in cultural/diversity issues, behavioral scientists with evaluation expertise, and consumers and family members who have received mental health services.

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Summary

Stigma is a key problem for individuals with mental illness, as it may prevent them from seeking treatment (Kessler et al., 2001; Regier et al., 1993) and contribute to negative interactions with friends, peers, employers, landlords, and law enforcement (Farina and Feliner, 1973; Link et al., 1987; Teplin, 1984; Wright, Gronfein and Owens, 2000; Wahl, 1999). Thus, reducing the stigma associated with mental illness may be a critical step in prevention and early intervention for mental disorders and may improve the quality of life of individuals with mental illness.

A number of programs that aim to reduce the stigma and discrimination associated with mental illness have been launched both in the United States and worldwide (Corrigan, 2012). These stigma and discrimination reduction (SDR) initiatives can involve a variety of components, such as training, education, media campaigns, contact with people with mental illness, or combinations of these strategies. Evaluating SDR programs is critical for helping to improve their effectiveness.

In this document, we provide a brief overview of the concept of stigma and the literature on the prevalence of mental illness stigma. We also introduce a conceptual model of mental health stigma reduction based on a variety of existing theories and evidence. Following this, we provide a literature review of key evaluations of mental illness SDR efforts.

In our review of the literature, we find some evidence for the effectiveness of different types of SDR activities. Training interventions targeted at specific groups have yielded some limited evidence of positive effects. For instance, trainings targeting students have yielded short-term (same session) positive changes in attitudes toward mental illness, knowledge about mental illness, and willingness to engage with people with mental illness (Boysen and Vogel, 2008; Essler, Arthur, and Stickley, 2006; Masuda et al., 2007; Rahman et al., 1998; Morrison, Becker, and Bourgeois, 1979; Yamaguchi, Mino, and Uddin, 2011). Some studies also suggest that trainings aimed at police officers may reduce the use of force and unnecessary arrests and increase referrals to psychiatric facilities (Bower and Pettit, 2001; Steadman et al., 2000), though the design of these studies was not strong. Mass media and broad, multicomponent campaigns have resulted in apparent positive changes in attitudes and possible reductions in suicide rates in England, Scotland, New Zealand, Germany, and other countries (Crisp et al., 2005; Hegerl and Wittenburg, 2009; Hickie, 2004; Jorm et al., 2005, 2006; Paykel, Hart, and Priest, 1998; Vaughan and Hansen, 2004), but the effects of such campaigns in the United States have not been explored (Corrigan, 2012). In general, the existing literature has demonstrated the promise of SDR but has not done so using methods that provide confidence that these interventions cause enduring shifts in critical outcomes for people with mental illness or for society. Thus, in addition to reviewing the literature on the effectiveness of different types of SDR programs, we also discuss design and measurement issues relevant to the evaluation of SDR programs.

We identified some key areas where more evaluation research is needed. These are:

- *the effects of SDR programs on a broader set of outcomes.* —More research is needed to gain a clear understanding of whether and when SDR programs encourage nondiscriminatory policy or behavior or increase treatment-seeking among people with symptoms.
- *the effects of broad-based SDR programs.* Research is needed to understand the effects of broad-based SDR programs (that combine education and training with media efforts) among members of the U.S. population, using rigorous methods that involve comparison groups.
- *longer follow-up of SDR program participants.* In addition, more research is needed to explore the longevity of attitude changes after an SDR campaign or training has ended. Although there appear to be some immediate attitudinal shifts after these interventions, little is known about whether these are maintained weeks or months later.

Acknowledgments

The RAND Health Quality Assurance process employs peer reviewers, including at least one reviewer who is external to the RAND Corporation. This study benefited from the rigorous technical reviews of Patrick W. Corrigan and Joshua Breslau, which served to improve the quality of this report.

Abbreviations

APA	American Psychological Association
CalMHSA	California Mental Health Services Authority
CIT	Crisis Intervention Training
GSS	General Social Surveys
IOOV	In Our Own Voice
MHFA	Mental Health First Aid
PEI	Prevention and Early Intervention
PWMI	People with Mental Illness
SDR	Stigma and Discrimination Reduction
SEE	Statewide Evaluation Experts
TLC3	targeted, local, credible, continuous contact
UK	United Kingdom

Overview

Despite the wide prevalence of mental health problems in the general public, only 30 to 40 percent of individuals experiencing symptoms seek treatment (Kessler et al., 2001; Regier et al., 1993). It is fairly common for people with mental illness to report negative interactions with employers, landlords, and the police or social exclusion by potential friends (Farina and Feliner, 1973; Link et al., 1987; Wright, Gronfein, and Owens, 2000; Wahl, 1999; Teplin, 1984). Those with mental illness may also receive less or less appropriate care for their physical health (Druss and Rosenheck, 1998).

A factor thought to play a key role in these problems is the stigmatization of mental illness. If this is the case, then reducing this stigma may be a critical step in prevention and early intervention for mental disorders; stigma reduction should also improve the quality of life for people experiencing mental health problems. Indeed, many initiatives have been launched over the last few decades, in the United States and worldwide, attempting to reduce the stigma of mental illness and increase social inclusion and treatment-seeking (Corrigan, 2012).

This review was conducted to inform RAND's evaluation of the California Mental Health Services Authority (CalMHSA) Prevention and Early Intervention (PEI) initiatives. CalMHSA is an organization of county governments working to improve mental health outcomes. Stigma and discrimination reduction (SDR) is one of three key initiative areas, and we focused our review on the kinds of SDR programs and activities that CalMHSA is undertaking. This includes educational presentations and training; creation of key documents, tools, websites and other resources; and media campaigns. In our review of the literature, we found some evidence for the effectiveness of these kinds of SDR activities. Data suggest that various approaches result in changes in expressed attitudes toward persons with mental illness in the United States, and these changes endure for at least a short time. No U.S. data are available about the effect of mass media campaigns or other broad-based efforts; such initiatives do appear to have improved attitudes toward persons with mental illness in other countries and in some cases may also have reduced suicides (perhaps by increasing treatment-seeking). However, it is possible that at least some of the observed attitudinal changes were due to shifts in perceived acceptability of publicly displaying prejudice against people with mental illness rather than to true shifts in underlying beliefs.

There is no evidence regarding the longevity of attitude changes after a media campaign has ended, no evidence regarding changes in discriminatory policy or behavior linked to such campaigns, and only very limited evidence of increases in treatment-seeking among persons with symptoms. Training interventions aimed at students appear effective in creating positive short-term shifts in attitudes, knowledge, and social distance. However, none have been shown to change behavior. There have been far fewer evaluations of trainings for the general public or for people who often influence the lives of those with mental illness, such as corrections officers and employers/employees. Training evaluations of this type that have been published show trends toward improved attitudes and beliefs, and trainings for police officers may even have reduced use of force and unnecessary arrests and increased referrals to psychiatric facilities. However, among these studies, as with student trainings, follow-up periods are short or nonexistent. Study

designs are also fairly weak, making it unclear to what extent these trainings play a causal role in the improvements observed.

To determine whether CalMHSA's SDR efforts make a real and significant change in the lives of people who experience mental illness and their families, it will be important to employ methods as rigorous as the strongest of prior studies and, if possible, to go beyond these efforts to measure enduring and substantive change.

Introduction

In this chapter, we provide an overview of the research literature evaluating stigma and discrimination reduction activities. We begin with a brief overview of the concept of stigma and summarize what is known about the prevalence and sociodemographic correlates of mental illness stigma. As further context, we briefly discuss various theories of prejudice, stigma, and discrimination reduction and introduce a conceptual model integrating them. Following this, we describe the findings from key evaluations of mental illness SDR efforts. We discuss in detail the methodological strengths and weaknesses of these studies, and include a special section on the particular challenges of evaluating media campaigns (one of the most common SDR strategies). We conclude with a brief summary of what this literature implies regarding the evaluation of SDR programs and initiatives.

Between January and February 2012, we searched the peer-reviewed literature to identify evaluation approaches and process and outcome evaluation measures used in studies of mental illness stigma and discrimination reduction programs. Literature searches were conducted using PubMed (medicine) and PsychINFO (psychology) databases. In general, searches contained different combinations of the following keywords: mental health, mental illness, stigma, discrimination, education, program, and intervention. To augment this literature, we also obtained articles cited in this and subsequent sets of papers that suggested strategies for measuring outcomes that could be influenced by SDR programs, as well as select theoretical papers, reports of the prevalence and correlates of mental health stigma, and articles from the broader psychological literature on prejudice.

What Is Mental Illness Stigma?

In perhaps the best known work on the concept of stigma, Goffman referred to it as a "spoiled identity" (Goffman, 1986). This identity may be private, involving internalized feelings about oneself, or public, involving negative perceptions or behaviors of others. The desire to avoid labeling oneself negatively, or to conceal one's problems from others, is thought to cause treatment avoidance, increase dropout from treatment, and reduce treatment adherence (see Corrigan, 2004, for a review).

Mental illness stigma encompasses three constructs: stereotypes, prejudice, and discrimination (Corrigan, 2004). Stereotypes are a set of beliefs about members of a group and typically represent society's shared beliefs about that group. Stereotypes are generally not subject to personal control—a person may apply a negative stereotype unintentionally and do so even if he or she expresses relatively positive, unprejudiced feelings toward a group (Devine and

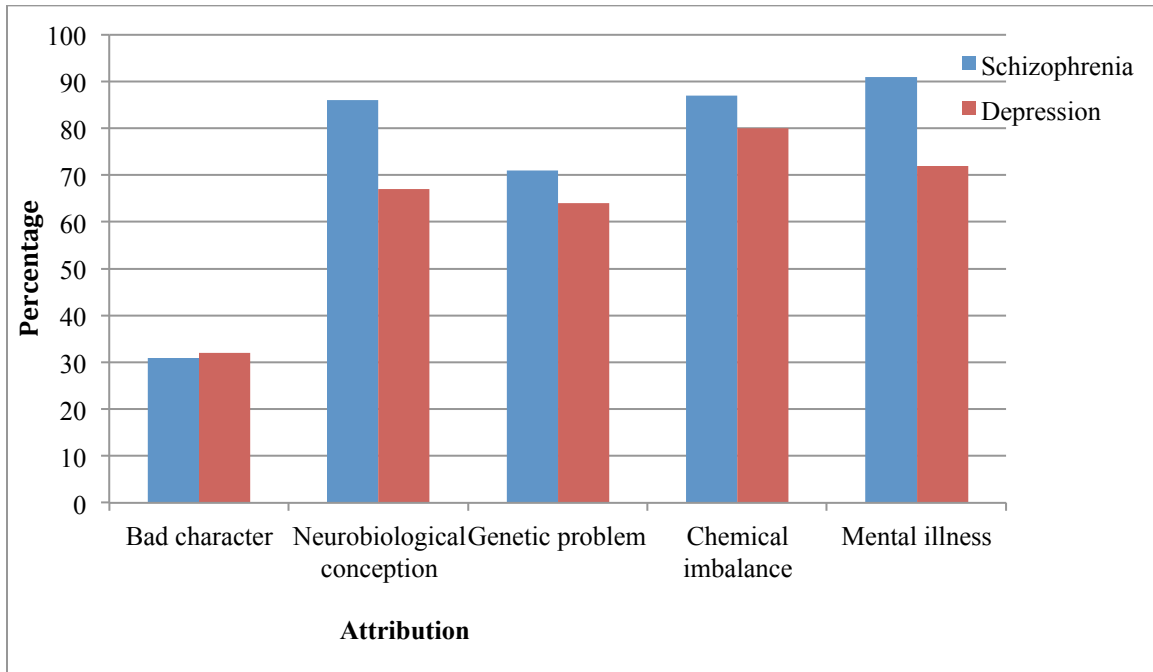
Sharp, 2009). Stereotypes can include beliefs such as persons with mental illness are violent and dangerous as well as beliefs related to the causes of mental health problems (Corrigan et al., 2002). For example, stereotypes may include beliefs that mental illness is brought about by a person's action or inaction or are due to moral character flaws (Pescosolido et al., 2010). Other stereotypes often measured as part of mental illness stigma are beliefs that people do not recover from mental illness or that treatment is ineffective. Prejudice is a negative attitude toward a person or group (e.g. "I don't like/don't want to have contact with someone with mental health problems") (Allport, 1979). Prejudice may be exhibited by the degree of willingness one expresses in engaging in varying interpersonal interactions with persons with mental illness (e.g., willing to become friends, work with, be neighbors) (Pescosolido et al., 2010). Discrimination is the behavioral aspect of stigma and is presumed to result from prejudice or stereotypes. It includes the social exclusion and negative social interactions previously noted and also encompasses laws, policies, and practices that treat persons with mental illness unfairly (e.g., restricts their rights to hold office or vote or limits their parental rights (Hemmens et al., 2002)).

Mental illness stigma may also reduce the well-being of persons experiencing mental illness. The internalization of negative views has been linked to low self-esteem, self-blame, and negative emotional states (Link et al., 1987). The stress of concealing one's mental illness may also harm persons who choose to do so. Goffman discussed the phenomenon of "passing," in which individuals with a characteristic that is stigmatized by society attempt to hide it from others (Goffman, 1986). In Goffman's view, the psychological costs of leading a life of concealment are considerable. Direct evidence of this, particularly among persons with mental health problems, is lacking, but such an effect is consistent with some social psychological theorizing regarding the effect of concealment on stress (Pachankis, 2007; Smart and Wegner, 1999, 2000).

Mental Illness Stigma: Population Profile

Mental illness stigma is common in the United States. The 1996 and 2006 General Social Surveys (GSS), surveys of a representative group of adults in the United States, included questions about public knowledge of, and response to, mental illness. In 2006, nearly one in three U.S. adults endorsed the view that schizophrenia and depression are a result of "bad character," although a larger (majority) group attributed both schizophrenia and depression to neurobiological causes (see Figure 1). The percentage of respondents endorsing each of the neurobiological attributions increased significantly from 1996 to 2006 for both schizophrenia and depression, whereas attributions to character remained stable (Pescosolido et al., 2010). This suggests some increased knowledge about the causes of mental illness between the two survey administrations but a persistence of blame. Blame may contribute to or be a symptom of mental illness stigma.

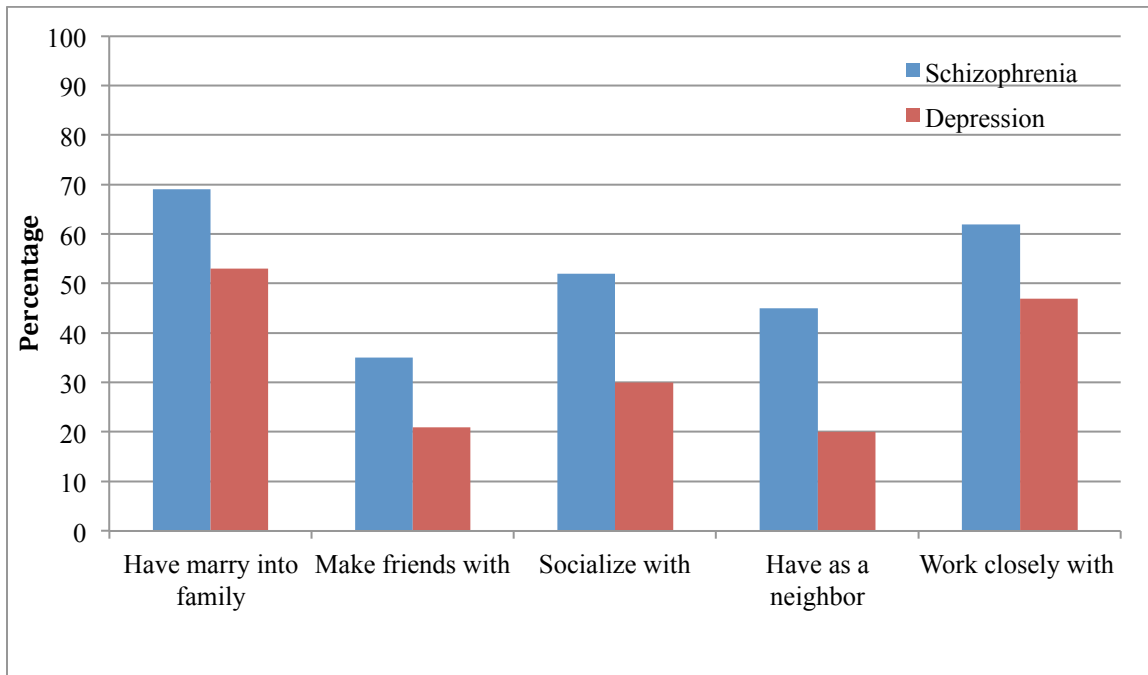
Figure 1. U.S. Adults' Beliefs About the Causes of Mental Illness



SOURCE: GSS, 2006.

Most respondents in 2006 said that they were unwilling to work closely or socialize with someone with schizophrenia, or to have such a person marry into their family (see Figure 2). Acceptance of those experiencing depression was substantially better, but about one in two adults rejected the idea of working with, or a family marriage to, a person with depression. Most people were willing to become friends with someone with either condition. Comparison of the 1996 and 2006 results revealed only one area of improvement: Respondents in 2006 were more willing to be neighbors with someone with a mental illness. These beliefs have important implications for the social integration of persons with mental health challenges.

Figure 2. U.S. Adults' Unwillingness of to Have Contact with People with Mental Illness



SOURCE: GSS, 2006.

Many adults also described individuals with these disorders as likely to do something violent toward others and toward themselves. In 2006, 60 percent and 84 percent, respectively, endorsed these views regarding schizophrenia, and 32 percent and 70 percent did so regarding depression (these results were similar to those in the 1996 survey) (Pescosolido et al., 2010). These perceptions may be increasing. Although results of the 1996 GSS were similar to those of 2006, in response to an earlier (1989) survey of public attitudes, 24 percent of respondents agreed that people with chronic mental illness are more dangerous than the general population (Borinstein, 1992). A 1990 survey found that the majority of respondents thought that “Although some people who have been patients in mental hospitals seem all right, it is important to remember they may be dangerous,” and 59 percent said that “It’s only natural to be afraid of a person who is mentally ill” (Phelan and Link, 2004). Comparing responses to an open-ended item asking respondents to describe a person with mental illness on a 1950 survey to the same item in the 1996 GSS shows the percentage of people who describe people with mental illness as being violent has increased from 7 percent to 12 percent (Phelan, Link, Stueve, and Pescosolido, 2000). This trend may reflect real changes in negative attitudes toward people with mental illness, but the varying results could also be due to differences in the survey items used.

Some of these studies have found that stigmatizing attitudes and beliefs differed across sociodemographic groups. For example, in the 1990 survey, age had a nonlinear relationship with perceived dangerousness—first decreasing and then increasing with age, and respondents who were racial/ethnic minorities, had less formal education, and had lower family income levels

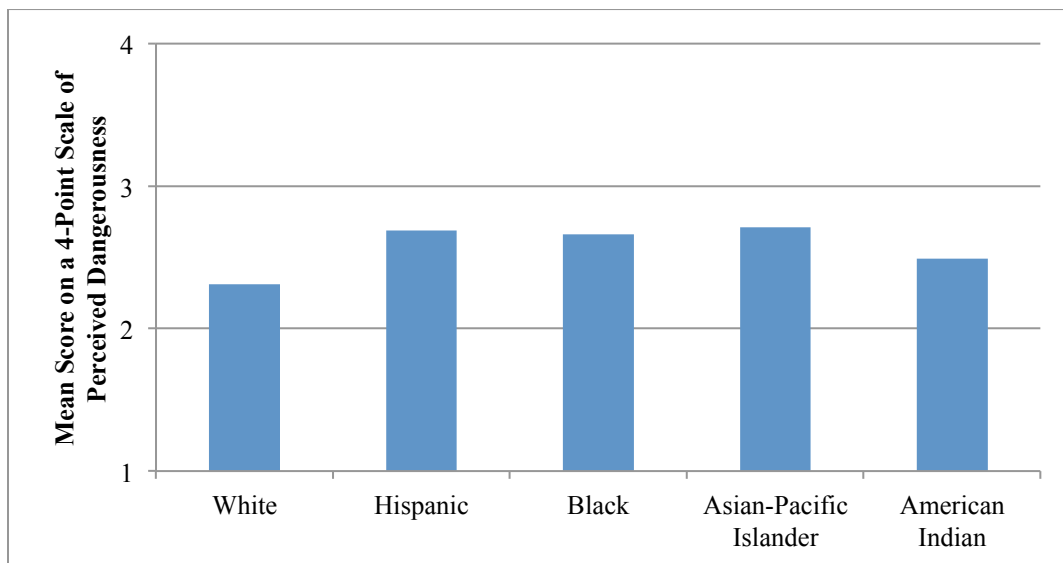
considered mentally ill people to be more dangerous than did the general population. Gender was not related to perceived dangerousness (Phelan and Link, 2004).

As shown in Figure 3, a 1997 study also found that racial/ethnic minorities perceived people with mental illness as more dangerous than white respondents did (Whaley, 1997). However, an analysis of the 1996 GSS found no differences in stigmatizing beliefs between minority and white respondents. Examining social distance (people's willingness to interact with versus desire to avoid those with mental illness), it was found that only two of the seven demographic factors examined were predictive of stigma: Respondents at higher income levels and those living in more urban areas were both more likely to avoid people with mental illness. Age, gender, and race/ethnicity were not related to social distance attitudes (Martin, Pescosolido and Tuch, 2000).

More recently, a 2006 survey of a representative sample of adults residing in Canada found that more men than women endorsed stigmatizing beliefs, and the attitudes of persons with higher levels of education were less stigmatizing of mental illness than were the attitudes of those with less education (Cook and Wang, 2010).

In summary, our review identified some studies in which more stigmatizing beliefs were held by racial/ethnic minorities, men, and older persons but other studies in which this was not the case. The inconsistency of study results suggests that sociodemographic differences in stigma are not particularly important, if they exist at all. Such differences are certainly not as large or as reliably obtained as differences based on diagnosis or symptoms. As Figures 1 and 2 show, there are substantial differences in beliefs about depression versus schizophrenia, for example (Pescosolido et al., 2008). Another recent review reached a similar conclusion (Angermeyer and Dietrich, 2006).

Figure 3. Various Racial/Ethnic Groups' Perceptions About the Dangerousness of People with Mental Illness



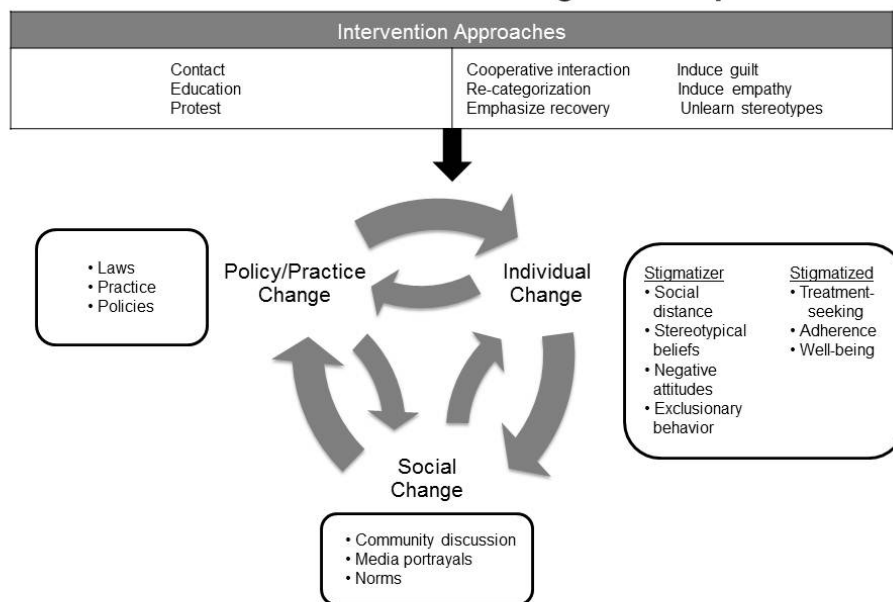
SOURCE: Whaley, 1997.

Theories of Mental Illness Stigma Reduction

Some theorists argue that producing shifts in deeply ingrained attitudes and behaviors requires producing mutually reinforcing changes at multiple levels, typically with a multicomponent approach (Hornik, 2002). Figure 4 shows how stigma can exist at the level of the institution, society, and individuals and depicts these levels as influencing one another. Successful interventions capitalize on these interdependencies. It is believed that reductions in smoking in the United States may have been based on this process. Effective mass media campaigns, such as the Truth anti-smoking campaign, wrought very small annual reductions in smoking rates (12 percent). At the same time, these campaigns shifted social norms away from acceptance of smoking. This change in norms fostered shifts in policy that made smoking less convenient (e.g., smoke-free buildings) and reinforced anti-smoking norms. In turn, individual smoking rates further decreased (Hornik, 2002). This model of change suggests that reductions in mental illness stigma will likely occur to the extent that social norms, individual actions and beliefs, and institutional practices and policies converge to support acceptance of people with mental health problems and to the extent that intervention is targeted at these multiple levels.

Figure 4. Conceptual Model for Reducing Stigma Associated with Mental Illness

SDR Intervention Should Effect Change at Multiple Levels



A number of theoretical models specific to mental illness stigma describe the components that should be part of any such intervention. Contact, education, and protest are core elements in one influential stigma reduction theory (Corrigan and Penn, 1999). Contact involves video or

direct, in-person contact with people with mental illness. Educational approaches to reducing mental health stigma aim to provide factual information about mental illness and recovery to replace inaccurate stereotypes and beliefs and to increase affirming attitudes (e.g., about recovery, empowerment, social inclusion). There is some evidence in favor of education, and studies on the effect of direct contact strategies on stigma reduction have also yielded promising findings (Couture and Penn, 2003; Yamaguchi, Mino, and Uddin, 2011). But protest, which involves identifying instances of prejudice or discrimination, publicizing them, and speaking out against them, can be ineffective or even result in increased discrimination or fear of discrimination because of the increased focus on instances where it occurs (Corrigan et al., 2001). That is, when a person who harbors negative beliefs about mental illness works vigilantly to avoid those thoughts, a regular monitoring of the mind for inappropriate thoughts is required. The ironic effect is that he or she becomes more focused on these beliefs, and they are more likely to come into play in his or her interactions (Macrae et al., 1994). This counterintuitive effect of thought suppression is a general phenomenon, not specific to prejudice—the more we try *not* to think about something, the more our thoughts plague us (Wegner, 1994). Perhaps for this reason, there appears to be increasing focus on building supportive networks or empowering people with mental illness through intervention efforts and less emphasis on protesting against stigmatization.

The importance of contact to mental illness stigma reduction is consistent with broader social psychological theories of prejudice and discrimination reduction. However, “the contact hypothesis,” as it is generally referred to in this literature, suggests that more is involved than mere contact with a member of a stigmatized group. Conditions of equal status, shared goals, support for the contact from people in positions of power or authority, and the absence of competition must be part of the interaction between two groups or group members (Pettigrew and Tropp, 2006).

This broader literature also suggests other ways to reduce prejudice that have not been directly addressed in the mental illness stigma literature. A recent report from the American Psychological Association (APA) (2012) outlined several evidence-based strategies, shown in the right-hand side of the top box in Figure 4. In addition to contact, the report noted that interaction, cooperative learning, or cooperative interaction can be effective ways to reduce prejudice. “Recategorization interventions” try to break down or rearrange social categories. Some programs emphasize that “anyone can get a mental illness,” that mental illness affects large portions of the population, or that people with mental illness recover. These ideas are only indirectly related to stigma but are probably targeted out of an intuitive understanding of recategorization. Changing these beliefs is likely to break down perceptions of “us” and “them.” An intervention that focuses attention on individuality and the varied experiences of those with and without mental health problems would also involve these processes, presumably reducing the likelihood of categorizing individuals at all on the basis of their mental health history.

The APA (2012) report also notes that those who believe that human nature is changeable, as compared to static, tend to be less prejudiced, supporting the idea that emphasizing affirming attitudes, such as the potential for people with mental illness to recover from mental health challenges, may help to reduce mental illness stigma. Other effective strategies that may be

applicable to reducing mental illness stigma include making people feel guilty for having prejudiced beliefs, inducing empathy for and promoting the empowerment of those who are the targets of prejudice (people with mental illness), and training people to unlearn stereotypes by repeatedly confronting them with their biases and having them practice inhibiting their stereotypes.

None of these methods has been explicitly tested as a way to reduce mental illness stigma, but elements of them appear in some of the theoretical literature. For example, links between labeling an individual as mentally ill or with a specific diagnosis (e.g., schizophrenia) and stigmatization of that individual (Pescosolido, 2008) suggest the importance of categorization to mental illness stigma. Evidence for the effectiveness of each of these techniques is based primarily on laboratory studies of artificially constructed groups (i.e., groups that are not based on prior group membership and that consist of individuals placed into the group at the time of their participation in the study). Findings from these studies show that participants reduce the extent to which they judge their own group as being better than other groups (Paluck and Green, 2009), suggesting that interventions can change the ways that members of different groups (e.g., people without mental illness versus people with mental illness) view each other. However, it is unclear whether these approaches have real-world applications—that they can shift attitudes that are more deeply ingrained, promote positive views of others, and cause lasting shifts in prejudice or discrimination.

Finally, it should be noted that our conceptual model focuses on processes involved in stigma reduction interventions and does not address methods of delivery. After reviewing a burgeoning body of evidence from the literature, Corrigan (2011) argues that mental illness stigma reduction is most likely to be effective when it is targeted toward specific populations or subgroups, locally based and delivered, continuous, credible (using people from the targeted population to deliver the message), and involves contact with people who have experienced mental health problems, or “TLC3.” The principles of TLC3 highlight the importance of delivery in effective intervention and complement the processes outlined in our model.

Mental Illness Stigma Reduction Programs

In parallel with these theories, though not always based on them, a large number of programs and initiatives have attempted to reduce mental illness stigma. They can be roughly divided into two categories: training interventions that involve in-person communication between an educator/speaker and a small to moderate-sized group, and mass media campaigns and broad multifaceted interventions. Some initiatives include both of these components.

Training Interventions

Training interventions typically involve an educational component in which information about the causes of mental illness, mental health treatment, and the experiences of people with mental health problems are provided to counteract stereotypes and prejudice and promote affirming attitudes about people with mental illness (Corrigan and Penn, 1999). Some training interventions consist solely of educational strategies, while others combine educational and

contact strategies. A variety of training interventions exist that address a range of audiences including students, health professionals, and the general public. Strategic targeted trainings aimed at “key power groups” such as employers, landlords, criminal justice, health care providers, policymakers, and the media have been posited as a potentially effective way to reduce stigma (Corrigan, 2004, 2011). Quite a few of these programs have been evaluated. See the appendix for details of a select set of key example evaluations.

Educational Strategies

Training interventions based on the principle of education can be relatively low-cost SDR approaches that can be disseminated widely (Lincoln et al., 2008; Mino et al., 2001; Schmetzer, Lafuze, and Jack, 2008). The short-term effect of educational interventions on attitudes toward mental illness has garnered some empirical support (Corrigan and Penn, 1999; Penn et al., 1994, 1999); there is relatively less evidence for effects on longer-term outcomes or behavioral changes (Corrigan and Gelb, 2006). Interestingly, educational approaches that frame the etiology of mental illness as having a largely biological or genetic component (Brown and Bradley, 2002; Mann and Himelein, 2008) have been shown to counter certain forms of stigma (e.g., offsetting blame) while reinforcing other aspects (e.g., beliefs that mental illness is intractable) (Corrigan and Shapiro, 2010). Moreover, increases in mental health literacy have been associated with more negative attitudes such as a greater desire for social distance from persons with mental illness (Angermeyer, Holzinger and Matschinger, 2009; Schomerus et al., 2012).

Educational programs have often been strategically targeted toward a variety of audiences. Efforts have been made to deliver educational programs to professional groups such as health care providers, who by nature of their position are likely to come into contact with persons with mental illness. A number of studies have examined the effects of providing educational programs to health care providers who are still in training (e.g., pharmacy, medical, occupational therapy students) (Beltran et al., 2007; Mino et al., 2001; O'Reilly et al., 2011). Findings reveal that health care providers in training can exhibit positive changes in attitudes several weeks after exposure to educational interventions (Beltran et al., 2007; Altindag et al., 2006). Extensive 40-hour crisis intervention training for police officers has resulted in officers feeling increased self-efficacy regarding working with people in crisis (Bahora et al., 2008), increased knowledge and more positive attitudes toward people with mental illness (Compton et al., 2006), and less stigma toward people in crisis (Bahora et al., 2008; Compton et al., 2006). These trainings may also have reduced the use of force and unnecessary arrests and increased referrals to psychiatric facilities (Bower and Pettit, 2001; Steadman et al., 2000). Briefer, less extensive trainings for police have also increased perceived knowledge about mental illness, although no reductions in stigma have been shown (Pinfold et al., 2003).

Given that a significant proportion of youth experience the first onset of mental illness during their adolescent years (Costello, Foley, and Angold, 2006), adolescents have been the target of many SDR educational interventions. Among secondary school populations, educational interventions have yielded positive outcomes on attitudes and knowledge (Essler, Arthur, and Stickley, 2006; Rahman et al., 1998; Morrison, Becker, and Bourgeois, 1979). Similar benefits

have been found for undergraduate students when they are provided with educational interventions (Boysen and Vogel, 2008; Masuda et al., 2007).

Reductions in self-stigma and the promotion of feelings of empowerment and self-determination among individuals with mental illness have also been the focus of educational interventions. There is some limited support for educational interventions aimed at reducing self-stigma (MacInnes and Lewis, 2008; Alvidrez et al., 2009); however, effects on behavioral outcomes were not found. Mental Health First Aid (MHFA) (Kitchener and Jorm, 2002) is a type of educational program that trains individuals to recognize when a person is developing a mental health problem and how to provide support. MHFA has been shown to effect positive changes in knowledge, attitudes, and helping behaviors across the general population (Kitchener and Jorm, 2002, 2006; Jorm et al., 2010).

Contact Strategies

Evidence suggests that fostering interactions with persons with mental illness may have an even greater impact on attitudinal changes than educational or protest strategies (Corrigan et al., 2001). Moreover, interpersonal contact strategies have been linked to behavioral change outcomes as well as to longer-term attitudinal changes (Corrigan et al., 2003a, 2003b). Correspondingly, in a review of SDR interventions with youth populations (Yamaguchi, Mino, and Uddin, 2011), direct contact with persons with mental illness appeared to be the critical component in stigma reduction, whereas the roles of education alone and video-based contact strategies were still questionable. Consistent findings were reported in a recent meta-analysis, which found that direct contact strategies were more effective than video-based contact (Corrigan et al., 2012). Moreover, in comparison to educational strategies, contact strategies were more effective for adults, whereas the opposite was found for youth.

A widely disseminated SDR intervention in which interpersonal contact is featured prominently is the National Alliance of Mental Illness' program In Our Own Voice (IOOV) (Pinto-Foltz, Logsdon, and Myers, 2011; Pitman, Noh, and Coleman, 2010; Wood and Wahl, 2006). IOOV involves a 90-minute group interaction led by two group facilitators with serious mental illness, in recovery. Facilitators present a video with five main segments that cover first experiences of mental illness, acceptance of illness, treatment, coping mechanisms, and overcoming mental illness and moving ahead on goals. After each segment, facilitators share their corresponding personal experiences and lead group discussions and interactions. Individuals who have participated in IOOV have exhibited less stigmatizing attitudes and social avoidance in comparison to control groups (Rusch et al., 2008; Wood and Wahl, 2006). Moreover, participants who took part in a shortened 30-minute version of IOOV compared to an education-only intervention recalled a greater proportion of positive than negative stereotypic statements about mental illness (Corrigan et al., 2010).

Mass Media Campaigns and Broad Multifaceted Interventions

Wide-reaching mass media campaigns typically deliver educational messages much like those included in SDR trainings. Information about the causes of mental illness, symptoms, prevalence, and treatability is typically presented. Messages are sometimes delivered by mental

health professionals and often by celebrities. When, as is often the case, those appearing in mass media campaigns are people who have experienced mental health problems, contact could also be said to be involved.

Large-scale initiatives often encompass multifaceted SDR strategies, pairing media messages with activities that mobilize communities and organizations, consistent with the conceptual model depicted in Figure 4. These large-scale initiatives have targeted mental illness stigma very broadly, or have focused on schizophrenia or depression, for the most part.

Although there have been quite a few mass intervention initiatives to reduce the stigma of mental illness, some worldwide in scope, only a handful of these have been evaluated, and none has been evaluated in the United States (Corrigan, 2012). The evaluations cited most often are two UK efforts, Defeat Depression (Paykel, Hart and Priest, 1998) and Changing Minds (Crisp et al., 2005), and the ongoing evaluation of the long-running Like Minds, Like Mine, in New Zealand (Vaughan and Hansen, 2004). All involved repeated cross-sectional population surveys. Defeat Depression appeared to reduce stigmatizing beliefs about depression as well as suicide rates. It was followed by the second initiative, which was designed to address a broader set of mental health problems. Changing Minds was associated with positive shifts in attitudes and beliefs, though they were modest. For each of these initiatives, however, the evidence of effectiveness is weakened by the lack of a comparison group. Changes over time may have reflected shifts caused by factors outside the anti-stigma initiatives.

Other key initiatives have produced much stronger evidence, and they show, fairly uniformly, that mass approaches to SDR are effective. Recent work designed to evaluate the intensive Scottish *see me* campaign used an attitude survey in England as a comparison against which to benchmark *see me* effects. Results suggested that Changing Minds effects were short-lived, as mental health stigma rose shortly after the campaign's end; however, during the same period, attitudes in Scotland mostly held steady. During the period, the media coverage of mental health issues in both countries was negative and thus likely to have made negative attitudes toward mental illness more negative in the absence of any other factors, but the *see me* campaign may have minimized this effect in Scotland.

Evaluations of initiatives in Australia and Germany show that SDR campaigns may be able to go beyond reducing negative attitudes to producing increased recognition of symptoms in oneself and others, and producing greater help-seeking for depression. *Beyond Blue* (Hickie, 2004), an Australian government-funded depression initiative, comprised protest strategies (e.g., educating journalists, advertising campaigns), direct contact interactions (e.g., prominent people speaking about depression), and the provision of educational materials (e.g., printed materials, Internet posted information). With lower activity states serving as a control group, states that were more active in implementing the *Beyond Blue* components demonstrated more openness about depression and more positive beliefs about the helpfulness of treatments (Jorm, Christensen, and Griffiths, 2005, 2006). Compass Strategy, an Australian initiative that addressed psychosis in addition to mood disorder, produced similar effects. The evaluation in Germany of Open the Doors, a worldwide initiative to address schizophrenia stigma, showed promising improvements in attitudes and beliefs.

However, the most impressive results to date come from the evaluation of the *Nuremberg Alliance Against Depression* (Hegerl and Wittenburg, 2009), a community campaign conducted from 2001 to 2002. It involved interventions with community providers (e.g., police, clergy, teachers), consumers and their relatives, and a public information campaign. Compared to Wurzburg, a nearby city that served as a control (Dietrich et al., 2010), residents of Nuremberg exhibited more positive attitudes toward antidepressants, increased awareness of depression, and diminished beliefs that depression was due to a lack of self-discipline (Hegerl and Wittenburg, 2009). These shifts toward depression awareness and perceived treatability may have resulted in greater treatment-seeking among those in distress. Of significant note, Nuremberg demonstrated a greater reduction in suicidal acts compared to Wurzburg, the effects of which persisted a year after the intervention had ended (Hegerl and Wittenburg, 2009).

Together, these studies indicate strong potential for using SDR methods combining media campaigns with trainings and other direct intervention to improve attitudes toward a variety of mental health problems. They suggest that behavioral outcomes such as treatment-seeking may be influenced as well. There is some evidence that the effect of campaigns wears off shortly after initiatives are concluded, but few studies conducted any follow-up to determine this. It will be important for future evaluations to test for enduring effects whenever possible.

Effects of SDR Intervention on Population Subgroups

Another key limitation to the existing research is its applicability to key subpopulations. Our review did not uncover any studies that tested for differential effectiveness of an SDR intervention among vulnerable groups such as lesbian, gay, bisexual, and transgender individuals; racial or ethnic minorities; or persons of varying ages or genders. To the extent that evaluation designs can support such tests (which typically require sampling or screening very large numbers of people to enroll enough participants in smaller subgroups) future efforts should incorporate them.

Issues of Design and Measurement in SDR Evaluation

In spite of past successes, Norman Sartorius, the force behind the World Psychiatric Association's Open the Doors campaign, concluded "short-lived anti-stigma campaigns are not the best way to improve the (mental health stigma) situation" (2010, p. 164). And in their recent wide-reaching evaluation of hundreds of prejudice-reduction studies, Paluck and Green (2009) concluded "the causal effects of many widespread prejudice-reduction interventions, such as workplace diversity training and media campaigns, remain unknown" (p 339). This is not because there have been few such interventions, or even because, relative to the number of such programs, the number of evaluations is quite small. Rather, their conclusion stems from the weaknesses in study design and measurement. These methodological limitations of existing research prevent conclusive statements about whether stigma reduction initiatives have truly brought about substantial societal change.

Education and Training Interventions

Evaluations examining the long-term effects of educational and training programs are needed. Existing evaluations have been mostly confined to examining short-term SDR effects (Corrigan and Penn, 1999; Yamaguchi, Mino, and Uddin, 2011). The large majority of evaluations typically employ pre-post designs in which assessments are administered directly before and after the delivery of an educational program. Evaluations that included longer-term follow-up assessments have primarily assessed attitudinal or knowledge outcomes (Finkelstein and Lapshin, 2007; Morrison, Becker and Bourgeois, 1979; Naylor et al., 2009).

Though there is evidence that educational interventions can have a longer-lasting effect on attitudes and knowledge (Essler, Arthur, and Stickley, 2006; Masuda et al., 2007), studies have also shown that intervention effects are no longer evident in the longer term, two- to six-month, follow-up periods (Altindag et al., 2006; Roberts, Somers, and Dawe, 2007; Rusch et al., 2010). Moreover, in a review of stigma reduction educational interventions for youth, all of the studies that employed a longer-term outcome evaluation showed declines in intervention effects from the post-test to long-term follow-up assessment period (Yamaguchi, Mino, and Uddin, 2011). Thus, further evaluations are needed that examine the long-term effects of educational programs to assess whether any evinced short-term effects can be maintained across knowledge, attitudinal, and behavioral outcomes.

Identifying the active ingredients within educational and training interventions can be challenging. Educational programs can vary in the types of information provided. For instance, differential effects for educational programs have been found, depending on whether information about the biological versus psychosocial causes of mental illness is provided (Lincoln et al., 2008; Rusch et al., 2010). Similarly, providing information about symptom presentations versus recovery outcomes has also been shown to yield different outcomes (Penn et al., 1994).

Educational programs can also differ with respect to the particular mental illness targeted (Kitchener and Jorm, 2004). Certain educational programs target a number of different mental illnesses (Bahora et al., 2008; Kitchener and Jorm, 2004); others may address a single mental illness (Brown et al., 2010; Rusch et al., 2008) or mental illness in general (Clinton, 1999). For educational programs that involve contact strategies, the quality of the contact interaction can vary. However, few evaluations include fidelity measures to assess the quality of educational contact strategies. Future evaluations of educational programs need to identify the posited effective ingredients of interventions and the fidelity with which those intervention components are being delivered (Couture and Penn, 2003).

There are also questions regarding the external validity of studies evaluating SDR trainings, which have been conducted predominantly with undergraduate student populations (Corrigan and Shapiro, 2010; Yamaguchi, Mino, and Uddin, 2011). Evaluations of educational programs that take place within undergraduate settings can often mean that interventions are delivered within the context of a classroom in which participants are taking part voluntarily. In a meta-analysis, contact strategies were shown to exhibit the strongest effects in reducing negative attitudes when provided in the context of undergraduate training or in conditions that were more voluntary in nature (Kolodziej and Johnson, 1996).

Additional study is needed to understand the effectiveness of educational interventions when delivered in different contexts and under circumstances in which the voluntary nature of participation may vary (Couture and Penn, 2003). In addition, relatively less is known about the effect of educational interventions on other important target audiences such as first responders (e.g., law enforcement), employers, housing authority workers, school administrators, and criminal justice.

Media Campaigns

Evaluating any large media campaign is difficult. Randomized controlled trials are not usually possible (Hornik, 2002; Noar, 2006). Because campaigns target mass audiences, identifying an alternative (nonrandomized) comparison group not exposed to one's message is also a challenge (Hornik, 2002). Selection of any comparison group should be done with caution, as most groups will likely differ on multiple dimensions from groups in which the campaign is implemented.

Small controlled experiments in which people are deliberately exposed to campaign materials in a laboratory or other setting are less challenging to implement and can be useful for testing specific elements of campaigns (e.g., the effectiveness of a particular message in influencing affirming and negative attitudes toward people with mental illness among a targeted subpopulation) (Hornik, 2002; Lau et al., 1980; Noar, 2006). Such experiments may not be able to tell us whether a campaign worked but could tell us what the campaign's *potential* to work is, if the messages reach their intended audience and effects are lasting.

Pre-post designs that assess outcomes only among those potentially exposed to a campaign are weaker alternatives. They do not provide any insight into the role of secular trends during a campaign, making it difficult to determine whether changes in outcomes occurred as a result of the campaign or due to shifts in the population that would have occurred without it. Because campaigns are often launched at a time when societal attitudes toward an issue are shifting (hence, the policy or funding support for the campaign itself), any change wrought in a treatment group must go beyond such trends in the comparison group to be meaningful.

There is also the potential for "history effects"—events that occur at the population level or at the level of the control group during the course of the study that affect group comparability. Collecting data about the information environment at baseline, before campaigns begin, can help determine if the current information environment is hostile or open to messaging about an issue and whether a secular trend is in progress (Randolph and Viswanath, 2004). It can also supply valuable information about competing or similar messages that may contaminate the ability to detect campaign effects. This is one version of a history effect.

A good example of both is the evaluation of the Scottish *see me* initiative, a comprehensive attempt to improve attitudes toward mental illness and reduce stigma. Somewhat surprisingly, negative attitudes in Scotland were more common after *see me* than before. However, a carefully crafted evaluation showed that attitudes in England deteriorated even more substantially during the same time frame. It was argued that negative publicity related to mental illness in both countries (unrelated to the campaign) caused a downward shift in acceptance of mental illness but that *see me* minimized the problem in Scotland (Mehta et al., 2009). The

presence of a baseline assessment allowed identification of secular trends common to the two countries and the apparent influence of the stigma reduction initiative in the context of this trend. Conducting a baseline assessment of the information environment may require coding and analyzing existing media coverage and popular entertainment before the delivery of any campaign messages.

An additional approach to evaluating media campaigns that has been used successfully is a time-series design. This type of design requires assessing processes and outcomes at multiple points in time. Because the effects of the campaign are tracked over time, they may be compared against predicted secular trends in stigma and discrimination reduction. As a result, it may be possible to make inferences about the unique effects of the campaign relative to those of secular trends occurring external to the campaign (Hornik, 2002; Lau et al., 1980; Noar, 2006). This design also allows for the detection of delayed effects of the campaign messages (Kumkale and Albarracin, 2004). Furthermore, collecting data at multiple time points throughout the evaluation can be used to make midcourse corrections where necessary (Noar, 2006; Randolph and Viswanath, 2004) and can capture delayed effects of messaging.

Often, media campaigns are evaluated using a dose-response test of their effect. People who are exposed to greater numbers of messages are compared to those exposed to fewer, to see if they show greater shifts in attitudes over time. If target audiences are not sufficiently exposed to the messages, it is unlikely that any change in outcomes will result (Hornik, 2002; Randolph and Viswanath, 2004).

This design is typically implemented as post-only or pre-post but can also be incorporated in a design with a comparison group (as was the case in the evaluation of the Nuremberg Alliance initiative; Dietrich et al., 2010; Hegerl et al., 2006; Hegerl and Wittenburg, 2009). For any or all campaign elements, data indicating how many people are exposed to campaign elements (e.g., gross rating points, hits, and impressions) can be measured (Randolph and Viswanath, 2004), possibly for specific subpopulations (Noar, 2006). At the level of the individual, different types of data may be collected. Target audiences may be asked if they recall seeing campaign messaging, if they can identify the media channel through which they were exposed to messaging, whether they paid attention to the message, and if they recall and recognize topics and logos associated with the campaign (Randolph and Viswanath, 2004).

The penetration of media campaigns is critical to assess, as the number of people exposed to a campaign will influence campaign effectiveness (Hornik, 2002; Noar, 2006). In addition, frequency of exposure should also be assessed, as a single exposure to a campaign message is not likely to be sufficient to cause change (Noar, 2006). Self-reported exposure raises issues concerning the validity of such reports (people report exposure who were not exposed, and people who better-remember their exposure may be those most affected or an otherwise select group). Nonetheless, such a design can yield some insight into whether a shift in beliefs, attitudes, or behavior may have occurred. When exposure is measured using objective measurement (for example, media markets where a greater number of ads aired), such a design can (when exposure differences are haphazard or random) approximate a randomized controlled group design and provide strong evidence regarding the effectiveness or ineffectiveness of a campaign.

The sampling frame for a media campaign evaluation must also be selected. For large campaigns that are intended to reach wide audiences, a best practice is to collect data from large, representative samples of the target population (Hornik, 2002; Noar, 2006). In addition, groups that are most likely to be exposed to the message can be oversampled, as the effects of the campaign will be best observed there (Lau et al., 1980). In addition, it may be worthwhile to oversample targeted subgroups of the greater population to understand the effects of the campaign on those audiences.

Outcome Measures in SDR Evaluation

Evaluation measures must be carefully chosen, whether for SDR media campaigns, trainings, or multicomponent initiatives. The instruments and outcomes examined should be rooted in theory so that the items measured are those most likely to be affected by the campaign and alter behavior (Randolph and Viswanath, 2004). Fishbein et al. (2002) note that a number of constructs occur among multiple health behavior theories and thus are good candidates for assessment (Randolph and Viswanath, 2004). These include process measures such as attention and attitudes toward campaign messages and people with mental illness, perceptions of personal relevance of the messages, interest in the messages, and perceived norms related to the message. Other variables, such as perceived self-efficacy related to the recommended behavior change, may also yield insight into whether behavior change is likely to occur, as may measures of intentions to engage in less discriminatory behavior. A common set of psychometrically sound measures of mental health stigma is urgently needed and would assist in conducting evaluations (Schmetzer, Lafuze and Jack, 2008).

Evaluation of the comparative effects of different educational and training programs has been hindered by the inconsistent use of outcome measures (Couture and Penn, 2003; Heijnders and Van Der Meij, 2006). A host of outcome assessments has been used in evaluation studies across domains such as social distance (Pinfold et al., 2005; Rickwood, Curtis, and Sakrouge, 2004), knowledge (Schulze et al., 2003; Sadow and Ryder, 2008), and attitudes (both negative and affirming) (Chan, Mak, and Law, 2009; Corrigan et al., 2007).

Vignette-based measures have also been employed, in which participants are asked to rate a depiction of a person with a mental illness based on a short description. Evaluations can differ in the descriptive information provided in the vignette. Even when a common domain is assessed with a similar measurement approach, slight variations can occur. For instance, items used in social distance measures can vary from study to study (e.g., willingness to date or hire someone with a mental illness), or attitudinal measures in some studies may only assess negative attitudes toward people with mental illness without tapping affirming attitudes about recovery and empowerment. A few measures of stigma have been widely adopted and established (Link et al., 1989) but have been used to test theory or track population perceptions, not to evaluate interventions. The vast majority of evaluations of large multicomponent or mass media interventions have employed original, often single-item measures without psychometric validation. These provide little insight into what is being shifted by interventions and how meaningful are these changes.

Social desirability effects are a central issue in designing and choosing among stigma measures. As noted above, the majority of efforts designed to evaluate training interventions use outcome measures that focus on short-term, immediate, program effects on attitudinal domains. Evaluations conducted under these conditions may be particularly susceptible to social desirability effects. Research designs in which interventions are sandwiched between immediate pre- and post-assessments may cue participants into the desired intended effects of a program and lead to socially desirable responses (Corrigan and Shapiro, 2010). Moreover, attitudinal measures may be more readily affected by social desirability effects. Incorporating behavioral and knowledge measures, providing greater anonymity for participant responses, and including comparison control conditions are strategies that can be used to mitigate social desirability effects (Corrigan and Shapiro, 2010).

More generally, the difference between expressed prejudice and application of stereotypes or discriminatory behavior should be considered. A change in scores on a measure of prejudice is important and indicates a shift in perceptions about what is acceptable and appropriate to feel about persons with mental illness. These changes may act as precursors to an eventual shift in behavior and policy. But shifts in expressed attitudes may occur without any change in behavior or policy if people are not motivated or do not have the tools to apply their newfound attitudes to actual situations (Devine, 1989). People may react automatically to people with mental health problems based on stereotypes, such as dangerousness, that have been deeply ingrained, even when they believe that such behavior is wrong. Thus, it is critical to assess outcomes other than expressed attitudes in evaluating any anti-stigma initiative.

To avoid problems with self-reported prejudice, Corrigan has employed a measure that asks intervention participants to record what they remember of a speaker's life story (the speaker being someone with a history of mental illness, as in many training interventions). Recollection of more negative than positive facts is considered an indicator of prejudice. Although promising, this measure is difficult to employ for more general evaluation purposes, and its validity with a variety of speakers and audiences has yet to be demonstrated. Vignette-based measures in which participants are asked to rate a depiction of a person with mental illness (sometimes labeled as such and other times not) are sometimes used to avoid asking directly about mental illness beliefs. Other options include measuring actual behavior and implicit associations. The latter taps automatic processing of information outside consciousness. These measures have been very useful in revealing the stereotypical beliefs of individuals whose expressed prejudice is minimal (Devine and Sharp, 2009) but have not been developed for prejudices related to mental illness.

How educational and training programs affect behavioral outcomes is largely unknown. Studies on these programs have focused predominantly on the effects of attitudes, knowledge, and beliefs, and rarely examine changes within behavioral domains (Corrigan and Penn, 1999; Couture and Penn, 2003). Stigma and discrimination studies that have employed behavioral assessments have primarily been conducted within experimental laboratory settings in which responses to temporarily constructed stigma conditions are assessed (Link et al., 2004). Some studies have incorporated behavioral measures to examine the effects of psychiatric labels or associations with attitudinal domains (Corrigan et al., 1999; Penn and Nowlin-Drummond, 2001). For example, in one study, participants completed a mental illness attribution questionnaire and

were subsequently provided with an opportunity to make a monetary donation to a mental health advocacy organization or to sign a petition against media perpetuations of negative stereotypes of people with mental illness (Corrigan et al., 1999).

With respect to evaluations of educational interventions, Yamaguchi, Mino, and Uddin's (2011) review identified only one study that had assessed for changes on behavioral outcomes. Some of the challenges posed to future evaluations include identifying appropriate behavioral measures and outcomes, conceptually linking attitudinal and behavioral targets, and verifying whether discriminatory behaviors are due to mental illness stigma or to other general factors (Couture and Penn, 2003; Link et al., 2004).

Finally, on the basis of his experience with Open the Doors, Sartorius recommends that measures of changes in policy, such as employment legislation or budgetary allowance for mental health issues, be incorporated into evaluations, as should reports about employment, housing, and other relevant life experience from persons with a history of mental illness (Sartorius, 2010). These measures would not only be less vulnerable to social desirability and study demand effects (although they still might be influenced by them), they would tap what are arguably more immediate and important influences on the lives of people with mental illness.

Summary and Methodological Challenges in Evaluating the SDR Initiative

Together, the studies we have reviewed provide good evidence for the effectiveness of trainings and broad-based population interventions to reduce the stigma associated with mental illness. Data suggest that various approaches result in changes in expressed attitudes toward persons with mental illness in the United States and that these changes endure for at least a short time. No U.S. data are available for mass media campaigns or other broad-based efforts in the United States, but such initiatives appear to have improved attitudes toward persons with mental illness in other countries and in some cases may also have reduced suicides. However, it is possible that at least some of the attitudinal changes that have been observed were due to shifts in perceived acceptability of expressing prejudice against people with mental illness rather than to true shifts in underlying beliefs. There is no evidence regarding the longevity of attitude changes after a media campaign has ended, no evidence regarding changes in discriminatory policy or behavior linked to such campaigns, and only limited evidence of increases in treatment-seeking among person with symptoms.

Training interventions aimed at students also appear effective in creating positive short-term shifts in attitudes, knowledge, and social distance. However, few have been shown to change behavior. There have been far fewer evaluations of trainings for the general public, corrections officers, and employers/employees. Those that have been published show trends toward improved attitudes and beliefs, and trainings for police officers may even have reduced use of force and unnecessary arrests and increased referrals to psychiatric facilities. However, study designs are fairly weak, making it unclear to what extent these trainings play a causal role in the improvements observed. For all the interventions studied, limited evidence exists regarding the duration of effects after the intervention ceases.

To determine whether CalMHSA's SDR efforts make a real and significant change in the lives of people who experience mental illness and their families, it will be important to choose

measures that best capture the outcomes of interest and methods as rigorous as the strongest of prior studies. If possible, CalMHSA's evaluation should go beyond these efforts to measure enduring and substantive changes in attitudes and behaviors.

Appendix

Table A.1. Key Evaluations of Mental Health Stigma Reduction Programs

Ref	Sample	Program	Focus	Components	Research Design	Longest follow-up	Evaluation Findings	Comments
Wright et al., (2006)	12-25 year olds in two metropolitan regions of Australia	The Compass Strategy	Mood disorders and psychosis	Multimedia campaign, trainings, telephone information line	Pre-post cross-sectional with comparison to a no-exposure region	14 months into initiative	Increased self-identified depression, increased help-seeking for depression, reduced perceived barriers to treatment, increased knowledge	
Gaebel et al., (2008)	Residents of Dusseldorf and Munich, Germany	Open the Doors	Schizophrenia	Lectures, panels including consumers and mental health professionals, press conferences, and press trainings	Pre-post longitudinal panel with comparison to 2 no-exposure cities and 2 cities with awareness-of-symptoms campaigns directed at teachers and general practitioners	3 years into initiative	Reductions in transient-relations social distance, no change in close-relations social distance	Changes were greater among those who reported awareness of the initiative

Jorm, Christensen, and Griffiths, 2005, 2006	Australian public	Beyond Blue	Depression	Media partnerships, advocacy, provider education	Pre-post cross-sectional with comparison by high versus low funding/exposure states	3 years into initiative	Increased recognition of depression symptoms, increased treatment efficacy beliefs, increased reports of depression in self or close others, increased perceived discrimination	
Mehta et al., 2009)	Scottish public	<i>see me</i>	Mental illness	Multimedia campaign	Pre-post cross-sectional with a comparison to England	3 years into initiative	Seventeen of 25 attitudes toward mental illness became more negative in England; only 4 of 25 became more negative in Scotland	In Scotland, campaign may have countered negative publicity regarding mental illness that occurred in both countries
Hegerl et al., 2006; Hegerl and Wittenburg, 2009; Dietrich et al., 2010	Residents of Nuremberg, Germany	Nuremberg Alliance	Depression	Gatekeeper trainings, physician training, media campaign and media training, support for families	Pre-post cross-sectional with a comparison to Wurzburg, Germany	1 and 2 years into 2 year initiative and (suicides only) 1 year after initiative conclusion	Reduction in suicidal acts (suicides plus attempts), improved beliefs about treatment, reduced attributions of blame	Changes in beliefs were dependent on reported exposure to the campaign or personal experience with depression
Vaughan and Hansen, 2004	New Zealand public	Like Minds, Like Mine	Mental illness	Media campaign	Pre-post cross-sectional	3 years into initiative	Decreased social distance, increased belief in recovery, decrease in stigmatizing attitudes	Weak design for attributing change to campaign
Paykel, Hart, and Priest, 1998	UK public	Defeat Depression	Depression	Media campaign, education of general practitioners	Pre-post cross-sectional	5 years into the initiative	Reduction in stigmatizing beliefs, suicide rates	Weak design for attributing change to campaign
Crisp et al., 2005	UK public	Changing Minds	Mental illness	Multiple educational materials for variety of target	Pre-post cross-sectional	3 months after program end	Reduction in some stigmatizing beliefs	Weak design for attributing change to campaign

				populations, advertising of these materials				
Rusch et al., 2008	College students	In Our Own Voice	Bipolar disorder	Video, interactive discussion with presenters in recovery	Pre-post crossover design with active control condition of psychoeducational lecture	Immediate post-test	Decreased social distance attitudes for bipolar disorder and unipolar depression; no effects on social distance for schizophrenia	
Wood and Wahl, 2006	College students	In Our Own Voice	Range of disorders	Video, interactive discussion with presenters in recovery	Pre-post with control group exposed to video on careers in psychology	Post-test	Increased knowledge, improved attitudes about mental illness, decreased social distance	
Yamaguchi, Mino and Uddin, 2011	University or college students (21 studies), children or adolescents (18 studies)	Review Article (40 studies)	Range of disorders	Direct contact, video-based contact, educational	Randomized controlled trials (15 studies); clinical controlled trial (9 studies); pre-post test only (16 studies)	7 months; long-term follow-ups in 14 studies	Of studies that measured the following constructs, significant improvements were found in knowledge (18 of 23 studies), attitudes/attributions (27 of 34 studies), social distance (16 of 20 studies), mental health self-awareness or help-seeking intentions (2 of 5 studies), behaviors (1 of 1 study)	Difficulty maintaining changes in knowledge, attitudes, and social distance between post-survey and follow up
Alvidrez et al., 2009	People with mental illness (PWMI), clinic outpatients	Psychoeducational booklets	Challenges to treatment-seeking and strategies to overcome	Psychoeducation	Randomized assignment (with control receiving written materials on local mental health services)	3 months	Individuals who reported higher perceived treatment need or greater uncertainty about treatment showed greater stigma reduction	
MacInnes and Lewis, 2008	People with mental illness	Unnamed	Mental illness	6-session program cognitive	Pre-post	Immediate post-test	Reduction in self-stigma	Weak design for attributing change to training

				therapy with psychoeducation				
Kitchener and Jorm, 2004	Australian government employees	MHFA	Variety	12-hour training	Random assignment to training versus waitlist control	5 months	Greater confidence in providing help to others, greater likelihood of advising others to seek professional help, improved concordance with health professional about treatment, decreases in stigmatizing attitudes and improved mental health	
Jormy et al., 2004	Rural general population	MHFA	Variety	9-hour course with participant manual	Cluster randomized trial; 16 Australian local government areas (randomly assigned to immediate training or waitlist control)	4 months	Increased reporting of help offered to PWMI, decreased social distance from person described in vignette, increased confidence in providing help, increased concordance with health professional views about treatment	
Compton et al., 2006	Police officers in Atlanta, GA	Crisis Intervention Training (CIT)	Schizophrenia	40-hour officer training course, receipt of certification as first responders for calls involving people in crisis	Pre-post only	Immediately post-training	Decreased perceptions that people with mental illness are violent, increased support for treatment programs, less social distance	Weak design for attributing change to training
Bower and Pettit, 2001	Police officers in Albuquerque, NM	CIT training	Mental illness	40-hour officer training course	Post-only	2 years post training	Percentage of calls resulting in transport to mental health facility, arrest, transport to jail, or other "protective custody"; injuries to citizens during contacts; number of police shootings	Weak design for attributing change to training

Steadman et al., 2000	Police officers in Memphis, TN	CIT training and access to a crisis drop-off center	Mental illness	40-hour officer training course	Post-test comparison to departments without CIT: Birmingham, AL, and Knoxville, TN	Continuous	Emergency calls more likely to trigger mental health program response; no difference in arrest rates in two departments.;no formal tests of rates of other call resolutions reported	Weak design for attributing change to training
Bahora et al., 2008	Police officers in Georgia	CIT training	Mental illness	40-hour officer training course	Pre-post crossover design with comparison groups but no randomization	Immediate post-test	Increased self-efficacy in interacting with people in crisis, decreased social distance	
Pinfold et al., 2003	Police officers in Kent, UK	Unnamed	Mental illness	Two 2-hour workshops over a 6-month period	Pre-post only	4 weeks	More positive attitudes, no change in perceived violence or social distance; officers also reported improved knowledge and behavior, but this was based on their own perceptions of change	Weak design for attributing change to training

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