International Journal of Social Psychiatry
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Int J Soc Psychiatry published online 18 December 2013
DOI: 10.1177/0020764013513443

The online version of this article can be found at:
http://isp.sagepub.com/content/early/2013/12/17/0020764013513443

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International Journal of
Social Psychiatry
201X, Vol XX(X) 1–10

DOI: 10.1177/0020764013513443
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Reducing stigma toward people with bipolar disorder: Impact of a filmed theatrical intervention based on a personal narrative

Lisa D Hawke[1,2,3], Erin E Michalak[4], Victoria Maxwell[5], and Sagar V Parikh[1,2]

Abstract

Background: Stigma toward people with bipolar disorder (BD) is pervasive and can have many negative repercussions. Common approaches to stigma reduction include education and intergroup contact. From this perspective, the *Collaborative RESearch Team to study psychosocial issues in Bipolar Disorder* (CREST.BD) and *Canadian Network for Mood and Anxiety Treatments* (CANMAT) partnered to develop an intervention to combat stigma. The result is a personal narrative intervention that combines contact, education and drama to educate audiences and dispel the myths that drive stigma.
Aim: This study reports on the impact of the CREST.BD-CANMAT stigma-reduction intervention in filmed format.
Methods: A sample of 137 participants was recruited to view the film, including health-care service providers, university students in a health-care-related course, people with BD and their friends and family members and the general public. Participants were evaluated for stigmatizing attitudes and the desire for social distance before and after the intervention and 1 month later.
Results: For health-care service providers, the intervention was associated with statistically significant improvements in several categories of stigmatizing attitudes, with maintenance 1 month later. The impact was more modest for the other subsamples. Students demonstrated progressive, significant improvements in the desire for (less) social distance. Some improvements were observed among members of the BD community and the general public, but these were limited and eroded over time.
Conclusion: This study demonstrated that a filmed dramatic intervention based on the lived experience of BD has statistically significant, sustainable stigma-reduction impacts for health-care service providers and more limited impacts for other target groups. This intervention can be considered an effective tool for use in stigma-reduction campaigns specifically targeting members of the health-care sector. Results are discussed in the context of multi-component stigma-reduction campaigns and the potential needs of target groups.

Keywords

Stigma, bipolar disorder, contact, film, entertainment–education

The notion of 'psychiatric stigma' refers to systemic and internalized stereotypical negative attitudes against people labeled as mentally ill (Corrigan, Roe, & Tsang, 2011). It is a social injustice that goes hand in hand with discriminatory behaviors, causing direct harm to those affected. Among the negative stigmatizing attitudes common in today's society, many believe that people with mental illness are violent and unpredictable, and that their illness is a sign of personal deficits, weakness, low intelligence, unreliability or incompetence (Corrigan et al., 2011). This type of prejudice is found throughout society – among health-care professionals, within the families and social circles of patients, in the general public and even among patients themselves (Sartorius et al., 2010).

Stigma can have serious repercussions for individuals with psychiatric disorders, including bipolar disorder (BD).

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Individuals who have BD and a high sense of self-stigma or subjective stigmatization can experience lower self-esteem, more social anxiety and social impairment and lower levels of functioning (Hawke, Parikh, & Michalak, 2013). With these impacts can come withdrawal, social exclusion and a reduced quality of life. A heightened sense of stigma is also associated with treatment avoidance (Eisenberg, Downs, Golberstein, & Zivin, 2009) and less trust in health-care providers (Verhaeghe & Bracke, 2011). The self-stigma effect also carries over to families and caregivers, whose sense of stigma can be associated with their own symptoms of depression, as well as avoidance and reduced social support (Hawke et al., 2013).

Stigma exists not only among patients and their families, but also among health-care service providers. Formal medical education about mental illnesses appears to increase stigmatizing attitudes (Totic et al., 2012), and these attitudes may be difficult to change through traditional education (Kassam, Glozier, Leese, Loughran, & Thornicroft, 2011). Psychiatry itself is stigmatized as a profession, viewed as less attractive than other medical specialties (Gaebel et al., 2011). Of course, the dichotomy between health-care professionals and patients is a false one, since health-care workers can be patients as well. Studies have shown that suicide rates are higher among physicians than in the general population (Schernhammer & Colditz, 2004), while working in a stigma-laden health-care environment seems to discourage health-care workers from seeking psychiatric treatment (Adams, Lee, Pritchard, & White, 2010; Wallace, 2012).

Stigma-reduction interventions

A variety of approaches have been undertaken in the fight against stigma. Based on intergroup contact theory, which proposes that direct contact with affected individuals is one of the keys to reducing prejudice (Pettigrew & Tropp, 2006), social contact with people with mental illness has become a key ingredient of anti-stigma interventions. A common goal of stigma-reduction efforts is to educate and demystify the illness to dispel myths while building empathy for the people affected. For a thorough meta-analysis of the impacts of anti-stigma interventions, see Corrigan, Morris, Michaels, Rafacz, and Rüsch (2012).

A growing trend in the translation of health-related knowledge is the use of the arts. Theater-based interventions have addressed emotionally laden subjects such as early psychosis, traumatic brain injury, end-of-life care and health policy development in target groups ranging from health-care professionals and service users to the general public (Lorenz, Steckart, & Rosenfeld, 2004; Nisker, Martin, Bluhm, & Daar, 2006; Roberts et al., 2007; Rossiter et al., 2008). Theater has also been employed to fight stigma surrounding mental illness. For example, the theatrical and performance arts have been shown to provide gains in the reduction of stigma toward mental illness and early psychosis among teens and young adults (Faigin & Stein, 2008; Roberts et al., 2007; Twardzicki, 2008). Multiple arts-based interventions have been brought together in a mental health festival with modest positive impacts for attendees (Quinn, Shulman, Knifton, & Byrne, 2011). In a more formal context, popular motion pictures have been successfully employed as a vehicle to foster discussion about mental illness among psychiatry residents, including discussions of stigma (Jukic, Brecic, & Savic, 2010).

Theater holds particular potential as a means of reaching audiences with a view to reducing stigma. Theater employs the tools of ethnography and artistry to convey complex messages with social and personal meaning (Rossiter et al, 2008). It also has entertainment value, which may facilitate dissemination. In fact, the specific combination of education and entertainment has been shown to have complementary impacts on stigma reduction (Ritterfeld & Jin, 2006). Furthermore, theatrical interventions appear to have impact whether performed live or in filmed format, each with its relative advantages and disadvantages in terms of the intensity of impact and scalability of dissemination (Faigin & Stein, 2008). However, most studies to date have examined the impacts of interventions on attitudes toward 'mental illness' broadly speaking. Since different illnesses are associated with different stigmatizing attitudes, anti-stigma initiatives are expected to be more successful if they target a specific disorder rather than mental illness as a whole (Reavley & Jorm, 2011).

The Collaborative RESearch Team to study psychosocial issues in Bipolar Disorder–Canadian Network for Mood and Anxiety Treatments anti-stigma intervention

Identifying stigma as a major concern for individuals with BD (Michalak et al., 2011, 2012; Suto et al., 2012), the *Collaborative RESearch Team to study psychosocial issues in Bipolar Disorder* (CREST.BD) and *Canadian Network for Mood and Anxiety Treatments* (CANMAT) partnered with a professional actress and mental health educator to produce a theatrical intervention that uses a first-person narrative to reduce stigma toward BD. The result is a 50-minute stage play called *That's Just Crazy Talk*, which targets stigma through a personal narrative that illustrates how internalized and public stigma have manifested in one person's life. When performed live, the intervention produces statistically significant, short-term reductions in stigma among health-care professionals (Michalak et al., 2013). Qualitative findings suggested that the intervention had a meaningful impact even for participants who did not demonstrate quantitative change, including both health-care providers and people with BD.

Table 1. Description of the study sample.

	Health-care professionals	Health-care students	BD community	General public
N	32	28	48	29
Health-care profession				
Nursing	53.1%	60.7%	–	–
Psychology	9.4%	39.3%	–	–
Other	37.6%	0%	–	–
Sex, % female	87.5	89.3	60.4	55.2
Age, *M* (*SD*)	48.9 (11.1)	21.2 (2.5)	51.7 (13.7)	45.4 (8.4)

BD: bipolar disorder; SD: standard deviation.

While these results are encouraging, practical and financial constraints limit the dissemination potential of a live performance. To expand its dissemination potential, the intervention was filmed for presentation in DVD format. A preliminary feasibility trial showed that individuals with BD did relate to the intervention in its filmed format and felt it was an accurate depiction of the disorder, providing construct validity (Hawke, Parikh, & Michalak, 2012). This study is a systematic examination of the stigma-reduction impact of the filmed version of the CREST.BD-CANMAT anti-stigma intervention in a variety of populations.

Method

Participants

Through collaboration with partner organizations, the DVD was presented to 137 participants (98 women and 39 men) in four target audiences: (1) $N = 32$ health-care professionals, (2) $N = 48$ people with BD and their friends/family members, (3) $N = 28$ students taking health-care courses and (4) $N = 29$ members of the general public. Sociodemographic characteristics of study participants are presented in Table 1. Health-care professionals had been in practice for an average of 17.9 years (standard deviation (*SD*) = 14.1 years) and 80.6% had either direct or indirect professional contact with individuals with BD or their families. The BD Community sample consisted of individuals self-identifying as having BD (47.9%) and friends or family members accompanying them to the screening (52.1%). The general public sample was a diverse group recruited through public movie hobbyist groups, as well as guests accompanying health-care workers or working in non-health-care positions at the health-care sites (i.e. shipping and receiving staff, etc.). Partner organizations and research event locations included the University Health Network, the Canadian Nurses Association, Queen's University, Ryerson University, the Barrie Community Health Centre, the 'We Don't Do Mainstream Films' Film Group, the Mood Disorders Association of Ontario, the Hamilton Mood Menders Support Group and the Mood Disorders Self-Help Group of Barrie.

Procedure

A total of nine research events were held, each recruiting an average of 15.2 study participants (*SD* = 10.1). Participants were recruited through various sources, including postings and e-mails to health-care institutions, support groups, hospitals and movie hobbyist groups. While most events had a specific sample as the focus of recruitment, participants were not excluded from an event if they met criteria for a different sample; as such, most events had some mixed attendance.

The film was presented in group format, including (1) a standard greeting and introduction, (2) film viewing, (3) posttest assessments and (4) interactive post-film discussion. The introduction and discussion were led by the first author (L.D.H.), who was then a postdoctoral research fellow with a psychology background and BD specialty. Participants provided informed consent and completed pretest evaluations either online during the week prior to the viewing or on site immediately prior, depending on logistical constraints and requirements of the host organization. The post-film group discussion was intended as an opportunity for participants to discuss both the film and their perspectives on stigma. While standard questions were used to launch the discussion, the course and content depended on the input from the attendees at each viewing. Post-film evaluations were conducted prior to discussions since discussion content could not be standardized.

One month after the DVD screening, participants were contacted by mail or e-mail to complete the follow-up assessments. The rate of response to follow-up was 73.0%. There was no statistically significant difference in the follow-up rate by sample, $\chi^2(3) = 6.124$, $p = .11$.

Intervention

The intervention is the product of a Canadian Institutes for Health Research–funded 'Knowledge to Action' project by CREST.BD and CANMAT. It is a 50-minute filmed version of a one-woman stage play performed by a recognized educator and speaker on the lived experience of mental illness and recovery (coauthor Victoria Maxwell of *Crazy for*

Life Co.). Consistent with intergroup contact theory and narrative medicine, the actress dramatizes her experience with BD, psychosis and anxiety. The narrative begins with her experience as the child of a parent with BD and the condition's impact on family life and relationships. She then goes on to describe her experience as she began to exhibit her own symptoms and gradually transitioned from acute illness and denial to acceptance, insight and improved health. The intervention constitutes an entertainment–education approach that uses drama, humor and storytelling to provide information on the lived experience of BD.

Measures

In addition to providing basic sociodemographic data, participants completed the following self-report assessments.

Mental Illness Stigma Scale. The Mental Illness Stigma Scale (MISS; Day, Edgren, & Eshleman, 2007) is a 28-item self-report questionnaire assessing stigmatizing attitudes toward a mental illness. The mental illness of choice is inserted into the items to customize it to a specific mental illness. It consists of seven subscales: anxiety about contact with people with the mental illness (*Anxiety*), the belief that mental health professionals are ineffective (*Professional Efficacy*), that people with the mental illness cannot maintain meaningful relationships (*Relationship Disruption*), that they have poor grooming habits (*Hygiene*), that they can be easily identified by appearance (*Visibility*), that they cannot be treated effectively (*Treatability*) and that they cannot recover from a mental illness (*Recovery*). Level of agreement with the statements is indicated on a 7-point Likert scale, where a high score indicates a high endorsement of stigmatizing beliefs. The MISS has been validated, showing good internal consistency for each of the subscales and detecting stigmatizing attitudes toward multiple conditions (Day et al., 2007).

Social Distance Scale. The desire for social distance is assessed by asking participants how willing they would be, on a 4-point Likert scale, to (1) move next door to a person with the mental illness indicated, (2) spend an evening socializing with the person, (3) make friends with the person, (4) start working closely with the person and (5) have the person marry into the family. A mean score is calculated, with a low score indicating a strong desire for social distance and a high score indicating a high willingness to interact. From the data used in this study, the Social Distance Scale (SDS; Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999) shows strong internal consistency, at Cronbach's $\alpha = .90$, and a unifactoral structure (baseline data).

Mental Illness: Clinicians' Attitudes Scale. The Mental Illness: Clinicians' Attitudes Scale (MICA; Kassam, Glozier, Leese, Henderson, & Thornicroft, 2010) is a 16-item self-report scale assessing the stigmatizing attitudes specific to any health-care or social service profession. Items, answered on a 6-point Likert scale, address issues specific to the health-care role, such as 'Working in the mental health field is just as respectable as other fields of health and social care'. A total score is calculated, with higher scores indicating higher levels of stigma. Validation results show good internal consistency and construct validity (Kassam et al., 2010). In this study, the MICA was completed by the health-care professional sample only.

Analysis

Data were subjected to a repeated-measures analysis of variance (ANOVA) using the mixed linear model to handle attrition and missing data. The false discovery rate (FDR) correction was used to control for type 1 error inflation (Narum, 2006). With nine measures for the health-care provider and student samples and eight measures for the BD/friend/family and general public measures, the corrected alpha values to establish significance with a family-wise error rate of .05 is $\alpha < .018$ within each sample. Based on this significance criterion, p values between .05 and .018 are interpreted as trends toward significance. Statistical analyses were conducted with SPSS-21. Sensitivity analysis was conducted with G*Power power analysis software (Faul, Erdfelde, Lang, & Buchner, 2007). With final sample sizes of $n = 22$–29 at the 1-month follow-up, statistical power of .80, a significance criterion of .018 and three assessment times, the analysis is sufficient to detect medium effect sizes of $f = .26$–$.30$ on each subscale, depending on the sample.

The discussion period was not recorded for formal qualitative analysis, since the purpose was to provide participants with an opportunity for mutual exchange on the topic, not to formally collect qualitative feedback about the intervention. However, since portions of the discussion revolved around participants' impression of the intervention as a stigma-reduction tool, the general climate of the discussions was noted after the event. This information is presented qualitatively.

Results

Stigma levels prior to the intervention are presented in Table 2. Results show several significant differences in two stigma subscales by group: stigmatizing beliefs about the ability to recover from BD and hygiene habits were highest among the BD community and lowest among health-care students. A nonsignificant trend suggested that the BD community had the highest level of belief about the visibility of the disorder, compared to the general public with the lowest level. On other categories of stigma, there were no statistically significant group effects.

Table 2. Descriptive statistics for each group prior to the intervention, with significance tests.

Scale	Health-care service providers, *M* (*SD*)	Health-care students, *M* (*SD*)	BD community, *M* (*SD*)	General public, *M* (*SD*)	*F*	*df*	*p*
MISS							
Anxiety	2.36 (1.03)	2.35 (0.91)	2.39 (1.14)	2.82 (1.16)	1.279	3, 122	.29
Professional efficacy	3.03 (1.43)	2.45 (1.00)	3.00 (1.42)	2.71 (1.34)	1.311	3, 122	.27
Relationship disruption	2.92 (0.99)	2.45 (0.86)	3.05 (1.34)	3.25 (1.34)	2.412	3, 133	.07
Hygiene	2.05 (0.84)[a,b]	1.92 (0.63)[a]	2.78 (1.38)[b]	2.50 (1.25)[a,b]	4.296	3, 122	.006
Visibility	3.48 (1.17)	3.27 (0.99)	3.78 (1.02)	2.92 (1.31)	3.374	3, 122	.021
Treatability	2.17 (0.95)	2.05 (0.71)	2.58 (1.23)	2.43 (1.08)	1.952	3, 133	.12
Recovery	3.11 (1.41)[a,b]	2.66 (1.11)[a]	3.79 (1.83)[b]	3.57 (1.50)[a,b]	3.644	3, 133	.014
SDS	3.71 (0.87)	3.60 (0.65)	3.88 (0.83)	3.42 (0.67)	2.146	3, 131	.10
MICA	2.11 (0.42)	2.16 (0.45)	N/A	N/A	0.251	1, 69	.62

BD: bipolar disorder; SD: standard deviation; *df*: degrees of freedom; MISS: Mental Illness Stigma Scale; SDS: Social Distance Scale; MICA: Mental Illness Clinicians' Attitudes Scale.
The false discovery rate–corrected significance criterion is .018; the same superscript letter indicates that pairs are not significantly different.

Table 3. Stigma levels among *health-care service providers* at pretest, posttest and 1-month follow-up assessments, with significance tests.

Scale	Pretest, *M* (*SD*)	Posttest, *M* (*SD*)	1-month follow-up, *M* (*SD*)	*F*	*df*	*p*
MISS						
Anxiety	2.36 (1.03)[a]	1.85 (0.91)[b]	1.78 (0.74)[b]	6.116	2, 28	.006
Professional efficacy	3.03 (1.43)[a]	2.25 (0.95)[b]	2.06 (0.98)[b]	5.373	2, 30	.010
Relationship disruption	2.92 (0.99)[a]	2.53 (0.95)[a,b]	2.30 (0.95)[b]	5.265	2, 28	.011
Hygiene	2.05 (0.84)	1.87 (1.03)	1.85 (1.04)	0.738	2, 27	.49
Visibility	3.48 (1.17)	3.37 (1.16)	3.00 (1.26)	2.354	2, 28	.11
Treatability	2.17 (0.95)[a]	1.57 (0.61)[b]	1.89 (0.69)[a,b]	11.998	2, 29	<.001
Recovery	3.11 (1.41)	2.81 (1.63)	3.00 (1.53)	0.688	2, 28	.51
SDS	3.71 (0.87)	3.88 (0.80)	4.08 (0.65)	2.628	2, 29	.09
MICA	2.08 (0.43)	1.90 (0.38)	2.13 (0.77)	3.358	2, 25	.05

SD: standard deviation; *df*: degrees of freedom; MISS: Mental Illness Stigma Scale; SDS: Social Distance Scale; MICA: Mental Illness Clinicians' Attitudes Scale.
The false discovery rate–corrected significance criterion is .018; the same superscript letter indicates that pairs are not significantly different.

The impact of the intervention on health-care service providers is presented in Table 3. The intervention had significant stigma-reduction effects on four MISS subscales: Anxiety, Professional Efficacy, Relationship Disruption and Treatability. For three of the four subscales, the significant reduction was maintained 1 month later. Improvements in beliefs regarding Treatability were partially lost at 1 month.

Students in health-care disciplines (Table 4) did not demonstrate any significant changes in stigmatizing attitudes, but did demonstrate a trend toward improvement in the desire for social distance; these gains continued to improve at the 1-month follow-up assessment, with the T1–T3 pairwise comparison reaching statistical significance ($p = .012$). The intervention's impact on members of the BD community was modest (Table 5). Only one MISS subscale showed significant improvement (Relationship Disruption), and this was lost at 1 month. The general public demonstrated significant pre–post improvements in beliefs about Treatability and the desire for social distance, with partial loss of both effects at 1 month (Table 6).

Qualitative feedback

In most cases, *health-care providers* greatly appreciated the intervention. They felt it was an emotionally impactful film with a strong humanizing impact. Many felt it would be very useful for others in their discipline. While many felt that 50 minutes was too long, others felt that this amount of time is required to assimilate the content in an

Table 4. Stigma levels among *students* registered in health-care-related courses at pretest, posttest and 1-month follow-up assessments, with significance tests.

Scale	Pretest, *M* (*SD*)	Posttest, *M* (*SD*)	1-month follow-up, *M* (*SD*)	*F*	*df*	*p*
MISS						
Anxiety	2.35 (0.91)	1.97 (0.68)	2.20 (0.93)	2.218	2, 23	.13
Professional efficacy	2.45 (1.00)	2.06 (1.23)	2.09 (1.22)	2.411	2, 24	.11
Relationship disruption	2.45 (0.86)	2.07 (0.79)	2.32 (1.16)	2.529	2, 24	.10
Hygiene	1.92 (0.63)	1.67 (0.80)	1.78 (0.84)	1.121	2, 20	.35
Visibility	3.27 (0.99)	3.49 (1.16)	3.12 (1.31)	1.990	2, 21	.16
Treatability	2.05 (0.71)	1.59 (0.87)	1.68 (0.89)	3.243	2, 20	.06
Recovery	2.66 (1.11)	2.46 (1.30)	2.48 (1.29)	0.738	2, 23	.49
SDS	3.60 (0.65)[a]	3.73 (0.80)[a,b]	3.85 (0.57)[b]	3.723	2, 26	.04
MICA	2.09 (0.34)	2.04 (0.41)	2.02 (0.52)	1.412	2, 21	.27

SD: standard deviation; *df*: degrees of freedom; MISS: Mental Illness Stigma Scale; SDS: Social Distance Scale; MICA: Mental Illness Clinicians' Attitudes Scale.
The false discovery rate–corrected significance criterion is .018; the same superscript letter indicates that pairs are not significantly different.

Table 5. Stigma levels among *members of the bipolar disorder community* at pretest, posttest and 1-month follow-up assessments, with significance tests.

Scale	Pretest, *M* (*SD*)	Posttest, *M* (*SD*)	1-month follow-up, *M* (*SD*)	*F*	*df*	*p*
MISS						
Anxiety	2.39 (1.14)	2.33 (1.14)	2.56 (1.00)	1.486	2, 33	.24
Professional efficacy	3.00 (1.42)	3.07 (1.55)	2.89 (1.62)	0.050	2, 36	.95
Relationship disruption	3.05 (1.34)[a]	2.78 (1.27)[b]	3.17 (1.21)[a,b]	5.789	2, 37	.006
Hygiene	2.77 (1.38)	2.59 (1.40)	2.87 (1.11)	1.272	2, 33	.29
Visibility	3.78 (1.02)	3.55 (1.23)	3.78 (1.08)	0.855	2, 35	.43
Treatability	2.58 (1.23)	2.46 (1.25)	2.16 (1.04)	0.781	2, 37	.47
Recovery	3.79 (1.83)	3.64 (1.76)	3.81 (1.39)	0.425	2, 41	.67
SDS	3.88 (0.83)	3.86 (0.88)	3.77 (0.85)	0.075	2, 39	.93

SD: standard deviation; *df*: degrees of freedom; MISS: Mental Illness Stigma Scale; SDS: Social Distance Scale.
The false discovery rate–corrected significance criterion is .018; the same superscript letter indicates that pairs are not significantly different.

emotional way. They appreciated the intervention's ability to remind them of the human dimension of the illness – a knowledge which they felt may be eroded by the day-to-day activity of working with patients who are in a symptomatic phase of the illness, possibly leading to burnout-like reactions.

Members of the *student* sample were receptive to the film and seemed to enjoy it for its entertainment value. However, the nursing students reported that they had seen similar types of interventions in the past. They felt that this type of humanizing message was already part of their regular curriculum, and that this intervention was not new material. Student groups were more difficult to engage in the post-film discussion than other samples.

Members of the *BD community* were less receptive to the film as a stigma-reduction intervention, although most did enjoy it for its entertainment value. They admired the actress' courage and identified with her story as an accurate portrayal of BD. While the film did not meet their expectations with regard to stigma reduction, many felt it would have some anti-stigma impact for health-care workers. However, many participants also mentioned wanting more concrete solutions to stigma and struggled to understand how one woman's personal story could be expected to produce large reductions in stigma.

Only one research event specifically targeted the *general public*, and it accounted for a minority of the general public sample. At that sample-specific event, participants

Table 6. Stigma levels among the *general public* at pretest, posttest and 1-month follow-up assessments, with significance tests.

Scale	Pretest *M* (*SD*)	Posttest *M* (*SD*)	1-month follow-up *M* (*SD*)	*F*	*df*	*p*
MISS						
Anxiety	2.82 (1.16)	2.72 (1.01)	2.56 (1.04)	1.184	2, 27	.32
Professional efficacy	2.71 (1.34)	2.48 (1.18)	2.17 (0.86)	2.701	2, 27	.09
Relationship disruption	3.25 (1.34)	3.04 (1.12)	2.93 (1.10)	1.711	2, 24	.20
Hygiene	2.50 (1.25)	2.28 (1.07)	2.23 (1.14)	0.796	2, 25	.46
Visibility	2.91 (1.31)	3.05 (1.27)	2.81 (1.13)	0.803	2, 26	.46
Treatability	2.43 (1.08)[a]	1.79 (0.66)[b]	1.99 (1.01)[a,b]	8.703	2, 26	**.001**
Recovery	3.57 (1.50)	3.24 (1.52)	3.65 (1.56)	1.283	2, 24	.30
SDS	3.42 (0.67)[a]	3.71 (0.55)[b]	3.54 (1.02)[a,b]	5.764	2, 24	**.009**

SD: standard deviation; *df*: degrees of freedom; MISS: Mental Illness Stigma Scale; SDS: Social Distance Scale.
The false discovery rate–corrected significance criterion is .018; the same superscript letter indicates that pairs are not significantly different.

were very receptive to the intervention. They found it to be an informative and entertaining portrayal of a condition with which they were unfamiliar. After viewing the intervention, they engaged easily in a rich discussion about medical versus mental illness, common media portrayals of mental illness and the implications of stigma. Since the remainder of participants were recruited as guests at the various other events, post-screening feedback specific to general public participants as a whole is not available.

Discussion

This study examined the impact of a filmed theatrical intervention aiming to reduce stigma toward people with BD among multiple target groups. The intervention had positive, sustained impacts on several categories of stigmatizing attitudes among health-care service providers, that is, the treatability of the disorder, the efficacy of the professionals who treat it, anxiety about interacting with members of this group and impacts on interpersonal relationships. Other categories of stigmatizing beliefs were not affected: beliefs regarding poor hygiene, the visibility of the disorder and potential for recovery. The impact on members of the BD community, health-care students and the general public was limited and less sustained. As such, it would appear that this intervention is a useful component of a stigma-reduction strategy specifically for members of the health-care sector.

Consistent with intergroup contact theory, which proposes that direct contact with affected individuals is one of the keys to reducing prejudice (Pettigrew & Tropp, 2006), multiple studies have shown that live contact-based interventions are effective in reducing stigma (Dalky, 2012). Filmed interventions providing indirect contact have also been shown to have anti-stigma effects (Clement et al., 2011; Faigin & Stein, 2008; Kerby, Calton, Dimambro, Flood, & Glazebrook, 2008). The use of a theatrical approach appears particularly relevant, since the combination of entertainment and education can reach audiences on both a cognitive and emotional level (Ritterfeld, Weber, Fernandes, & Vorderer, 2004). Specific to psychiatric stigma, Ritterfeld and Jin (2006) found that the entertainment value of a movie combines with its educational value to reduce stigmatizing attitudes. Indeed, many participants in our study referred to the emotional impact of the intervention, which reflects previous findings (Roberts et al., 2007). This is promising news, since entertainment–education may have the potential to reach audiences that might not otherwise be reached by targeted educational training sessions – and to reach them in a powerful, emotional way. The intervention examined in our study is a single, disseminatable tool that is consistent with both the indirect-contact and entertainment–education approaches to stigma reduction using a personal narrative.

Among previous stigma-reduction efforts, a randomized-controlled trial was conducted to compare a live contact-based intervention to a filmed version and a lecture-style presentation (Clement et al., 2011). In that study, the live and filmed interventions both produced sustainable positive impacts on stigma, exceeding the effectiveness of the lecture format. Given similar impacts across the live and filmed formats, the authors concluded that both were appropriate, but that the filmed version had notable advantages in terms of scalability and cost-effective dissemination. Another study comparing live and filmed formats found that both formats had anti-stigma benefits, the live version being more powerful (Faigin & Stein, 2008). Although our study did not directly compare the live and filmed formats, our results are in line with those of the original research project testing the same intervention delivered live (Michalak et al., 2013). With baseline stigma levels in the same range, the live intervention produced several

statistically significant pre–post reductions in stigma among health-care service providers, including three of the four attitudinal scales impacted here; however, the changes were not sustained 3 months later. Also consistent with this study, the live intervention's quantitative impact on individuals with BD was more equivocal, although a positive short-term impact was again found for Relationship Disruption and results were bolstered by positive qualitative findings. As such, it appears that the intervention has similar impacts across the live and filmed formats, consistent with the study by Clement et al. (2011). Specifically, the intervention appears to have moderately sustainable anti-stigma impacts on certain aspects of stigma specifically among health-care providers, lasting more than 1 month but less than 3 months. It also appears to have particular impacts on stigmatizing views of relationships, suggesting relevance to social stigma, human interaction and possibly even the social withdrawal and social anxiety associated with stigma.

Since stigmatizing attitudes are longstanding and resistant to change, current recommendations call for sustainable, long-term, continuous stigma-reduction campaigns rather than single, short-term interventions (Stuart, Arboleda-Flórez & Sartorius, 2012). In fact, the anti-stigma impacts of short-term interventions tend to be modest (e.g. Faigin & Stein, 2008; Quinn et al., 2011), as they were in this study, affecting four of seven categories of stigmatizing attitudes among the health-care sample. The solution, then, may be long-term, extensive stigma-reduction campaigns, which will require substantial toolkits of activities and interventions to maintain novelty and momentum. While each individual component of such a toolkit may have a modest impact and affect only certain categories of stigmatizing atttitudes, as the current intervention does, multiple interventions may each reinforce the message of the other, together accomplishing substantial, broad-based, sustainable change. The CREST.BD-CANMAT intervention is one such tool that may be a valuable component of a larger stigma-reduction campaign for the health-care sector.

Since members of the BD community seem to gain less from the intervention than health-care workers, this narrative may not be quite what they need. Previous suggestions for reducing self-stigma have included cognitive psychotherapeutic approaches that target negative self-schemas and services that increase personal empowerment (Corrigan & Calabrese, 2005). Indeed, maladaptive self-schemas are elevated among individuals with BD (Hawke & Provencher, 2012), while a higher sense of empowerment is associated with lower self-stigma (Brohan, Gauci, Sartorius, & Thornicroft, 2011), making self-schemas and empowerment promising treatment targets. If these perspectives were integrated with the current entertainment–education approach, it might take the form of a new dramatic intervention featuring a narrative of wellness and ability – debunking some commonly shared negative self-schemas while building a sense of hope and empowerment. It is possible that this type of personal narrative would provide more stigma reduction for the BD community than the current intervention, which focused largely on the experience of symptoms and their impact on relationships. Alternatively, the wellness component of the current intervention could be expanded, providing a clearer picture of recovery and wellness. Pending further exploration of varying narratives and messages, this intervention may still have value within the BD community. Even with minimal unique, quantifiable impacts on stigma in this group, the intervention may still be an effective means of stimulating dialogue about stigma and its impacts within a therapeutic context.

For students, baseline stigma levels were the lowest and the impact of the intervention on most stigmatizing attitudes was not significant, possibly due to a floor effect. Since other studies of theatrical stigma-reduction interventions have found positive impacts among young adults (Faigin & Stein, 2008; Roberts et al., 2007), it may also be that the characteristics of this intervention were less well adapted to a young adult audience. However, our intervention did significantly increase students' willingness to interact with individuals with BD. If this renewed willingness translates into increased contact and reduced avoidance behaviors, it has the potential to produce tangible changes in the lives of those affected. It could also continue to serve to further reduce or maintain reductions in stigmatizing attitudes through the mechanism of direct contact. Several students indicated that this type of humanizing educational tool was already a part of their curriculum, which is supported by the low stigma levels. This report emerged from a single university's nursing program, and the generalizability therefore cannot be determined. However, if this new trend in education holds true in many training environments, it may be good news for the future of stigma: if health-care students are already being educated in ways that humanize the illness, it may mean the emergence of a new era of acceptance in the health-care sector once today's students take their positions in the sector. Alternatively, it may be that their levels of endorsement of stigmatizing beliefs will rise once they enter into the workforce and begin to have regular contact with symptomatic individuals, emphasizing importance of providing continuing access to humanizing education throughout their careers.

In terms of the general public sample, this was a very mixed group with a diversity of experience. Despite a lack of measurable attitudinal change, this group engaged easily in the post-film discussion and qualitatively responded strongly to the intervention. As in the student sample, it may be that the characteristics of the intervention were not well adapted to reducing stigma in this group. However, given the level of interest and engagement, it may be that a single intervention that introduces many viewers to the

topic for the first time is insufficient to trigger measurable changes in stigma.

Several limitations should be kept in mind when interpreting these results. First, since sample sizes were modest, it is possible that the intervention had quantitative impacts that were not detected. It could also have subtle impacts that are difficult to detect using a quantitative approach. A gender bias was also present in the sample, with a female majority. The absence of a control group is another notable limitation, since it was not possible to determine whether outside influences (e.g. national anti-stigma messages and stigmatizing presentations of BD in the media) might have impacted stigma levels between the assessment points. It is also possible that social desirability impacted some participants' responses. Finally, it should be noted that the qualitative findings do not represent a systematic qualitative research method, but rather open summaries post-viewing discussions.

In sum, this study demonstrates that a filmed, dramatic intervention appears to have positive, sustainable impacts on several categories of stigmatizing attitudes toward BD specifically among health-care service providers. However, only modest or temporary impacts were observed on people with BD and their families, health-care students and the general public. This study tentatively supports the use of the intervention as a useful ingredient in a larger toolkit of stigma-reduction interventions targeting health-care service providers. Future research is required to delineate the needs of different target groups to maximize stigma-reduction efforts.

Acknowledgements

L.D.H. attributes this work to the University Health Network/ University of Toronto although she is currently affiliated to Université de Saint-Boniface.

Conflict of interest

Victoria Maxwell performs the intervention for financial compensation.

Funding

That's Just Crazy Talk was developed thanks to a Knowledge-to-Action grant exploring the impacts of a 'lived experience' theatrical performance on attitudes and understandings of mental illness. The grant was awarded to Dr Sagar Parikh and Dr Erin Michalak by the Canadian Institutes of Health Research. This research project evaluating the impact of the filmed version of the intervention was funded separately through a University of Toronto Faculty of Medicine Continuing Education and Professional Development Award to Dr Sagar Parikh and Dr Lisa Hawke.

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