Healthy Young Minds: The Effects of a 1-hour Classroom Workshop on Mental Illness Stigma in High School Students

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Abstract

Background—This study aimed to test the effects of a one-hour classroom-based workshop, led by medical students, on mental illness stigma amongst secondary school students.

Method—Students (aged 14–17) from three public secondary schools in British Columbia participated in the workshop. A questionnaire measuring stigma (including stereotype endorsement and desire for social distance) was administered immediately before (T1), immediately after (T2), and 1-month post-workshop (T3).

Results—A total of 279 students met the study inclusion criteria. Total scores on the stigma scale decreased by 23% between T1 and T2 ($p < 0.01$). This was sustained 1-month post-workshop with a 21% stigma reduction compared to pre-intervention ($p < 0.01$). This effect was primarily due to improvements in scores that measured desire for social distance. There were no significant changes in scores that measured stereotype endorsement.

Conclusion—Adolescents' stigmatizing attitudes can be effectively reduced through a one-hour easily implementable and cost-effective classroom-based workshop led by medical students.

INTRODUCTION

Mental illnesses are profoundly stigmatized health conditions. Stigma is a complex social process that involves labeling, stereotyping, separation, status loss and discrimination, which occurs when a power differential exists (Bailey 1999; Corrigan, Kerr, & Knudsen 2005; Link & Phelan 2001; Pejovi -Milovancevi , Leci -Tosevski, Tenjovi , Popovi -Deusi , & Dragani -Gaji 2009; Schulze, Richter-Werling, Matschinger, & Angermeyer 2003; Stuart & Arboleda-Florez 2001). Public stigma is a phenomenon that occurs when large social groups endorse stereotypes about and act against those labeled as belonging to a socially disadvantaged group (Bailey 1999; Brown 2008; Corrigan et al. 2005; Flavell, Miller, &

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CONFLICT OF INTEREST

The authors do not have any conflicts of interest, and all authors certify responsibility.

Miller 2001; Schulze et al. 2003; Stuart & Arboleda-Florez 2001). Negative stereotypes, often endorsed in relation to people with mental illnesses such as “dangerous”, “violent”, “less intelligent”, “incapable”, “weak”, and “indolent” (Brown 2008; Link 2011; Manzo 2004; Pejovi -Milovancevi et al. 2009) can result in alienation, discrimination, and social isolation (Bailey 1999; Corrigan et al. 2005; Link 2011; Pejovi -Milovancevi et al. 2009; Schulze et al. 2003; Stuart & Arboleda-Florez 2001).

Fortunately, public stigma can be mitigated (Bailey 1999; Brown 2008; Corrigan et al. 2005; Flavell et al. 2001; Schulze et al. 2003; Stuart & Arboleda-Florez 2001). As stereotypes begin to form and consolidate during adolescence (Flavell et al. 2001; Schulze et al. 2003), this phase of development represents a key opportunity during which to undercut the process of stigma formation. Although a variety of educational programs exist, education plus video-based contact is more effective in modifying attitudes than education alone (Chan et al. 2009). Combinations of education with direct contact or video-based contact with persons with mental illness have all shown to be effective in reducing stigmatizing attitudes among children/youth (Chan, Mak, & Law 2009; Corrigan et al. 2001; Schulze et al. 2003; Warner 2005; Yamaguchi, Mino, & Uddin 2011). These interventions to-date have ranged in length from one-hour sessions (Pinfold et al. 2003) to a full week of lessons (Schulze et al. 2003; Watson et al. 2004). Various interactive modalities have been implemented, including games (Yamaguchi et al. 2011), art work (Schulze et al. 2003), web-based modules (Watson et al. 2004), and short videos (Brown, Evans, Espenschade, & O'Connor 2010; Chan et al. 2009; Wood & Wahl 2006). The combination approach of education and video-based or direct contact has been shown to be effective in improving knowledge (Pinfold et al. 2003) and attitude (Chan et al. 2009; Schulze et al. 2003; Watson et al. 2004; Wood & Wahl 2006), with effects that are sustained over one (Schulze et al. 2003) to six months (Pinfold et al. 2003).

We designed a workshop that reduced limitations to the broad applicability of previous interventions, such as the need for multiple classroom sessions (Watson et al. 2004), time commitment outside of school (Schulze et al. 2003), direct contact with patients (Economou et al. 2012; Pinfold et al. 2003), and well-trained individuals to deliver the workshop (Stuart 2006). We used a combined approach of education with indirect video-based contact, along with strategies to promote participation, including games with small prizes, quizzes, open discussions and active demonstrations involving students.

The educational component of the workshop involved using a “Wordle” (Figure 1, a visual depiction of words commonly used to describe someone with a mental illness, generated from a previous focus group involving Grade 10 students in Vancouver) to spark a safe and open discussion aimed at introducing the concept of how negative labels and stereotyping contribute to mental illness stigma and how this can potentially have harmful consequences (Corrigan et al. 2001; Patrick W Corrigan et al. 2002; Penn et al. 1994). Subsequently, we presented factual information about etiology, symptomatology and treatment of three focal mental illnesses, anxiety, depression, and schizophrenia. Studies have shown that when people attribute mental illness to environmental or experiential factors, this can increase blame (Angermeyer & Dietrich 2006). Conversely, attributing mental illness to genetics can increase perceptions that patients are dangerous (Harré 2001; Read & Law 1999; Schnitker

2008; Walker & Read 2002). Thus, we presented an evidence-based picture of the etiology of mental illness – that these are conditions that arise as a result of the combined effects of genetics and environment, and are not purely due to genetics nor the fault of the person (Corrigan et al. 2001; Yamaguchi et al. 2011) – and engaged students in a hands-on demonstration of this, using the “Mental Illness Jar” concept (Peay & Austin 2011).

The contact component of the workshop featured video clips of local youths speaking about their experiences of living with and recovering from their condition, as well as about what defined them outside of their illness. Literature has suggested that the effect of indirect video-based contact on adolescent attitudes, when compared to direct in-person contact, are comparable (Reinke & Corrigan 2004), and in reality more feasible (Stuart 2006). In a facilitated discussion, students were asked to reflect on their own experiences and interests, in order to recognize and appreciate commonalities between themselves and the youths in the videos. In doing so, we aimed to counteract any pre-conceptions about fundamental differences between people with and without mental illnesses that are foundational to stigma processes (Chong et al. 2007). Both the educational and contact-based components of the workshop a) challenged students to re-evaluate their understanding or misunderstanding of mental illness and to empathize with those living with these conditions, and b) emphasized that mental illness can be successfully treated and that recovery is possible.

In the present study, we tested the effect on mental illness-related stigma among grade 9–10 students of the one-hour, resource non-intensive workshop led by individuals without extensive training that we designed, as described above.

METHODS

The study was approved by the UBC Children’s and Women’s Research Ethics Board (CW11-0202/H11-01824), as well as the Vancouver and Surrey School Boards in British Columbia, Canada.

Study Design

Since there are no previous studies that have tested this workshop, and there is no accepted “gold standard” against which to compare this intervention, we adopted a single-group, repeated measures pilot study design. In this design, students completed an anonymous questionnaire at three time points: immediately before the workshop (T1, in class, on paper), immediately after the workshop (T2, in class, on paper), and one month after the workshop (T3, either at home online, or in class on paper).

Participants

Three secondary schools from Vancouver and Surrey, British Columbia, Canada, participated in this study. The workshops were scheduled during regular class time in Grades 9 and 10 (students of ages 14–17).

Questionnaire

Demographic information was obtained and participants were asked at the T1 time point to indicate “yes”, “no”, or “unsure”, to the prompt “Have you ever known anyone with a mental illness?” Students’ stigmatizing attitudes toward people with lived experience of mental illness were assessed using a survey developed specifically for use in adolescents and previously used by Schulze et al. in the “Crazy? So what! – It’s normal to be different” project in Leipzig (Schulze et al. 2003). The wording was modified such that each statement referred to mental illness broadly, rather than to schizophrenia specifically. Students were asked to mark “agree”, “disagree” or “unsure” on 19 statements, seven of which inquired about whether or not they endorse common stereotypes about people with mental illness (the stereotype endorsement subscale), and 12 of which asked whether they were willing to engage in various types of social relationships with someone who has a mental illness (the social distance subscale).

Workshop Intervention

In order to standardize delivery of the workshop content, a script was written, thoroughly reviewed, and rehearsed prior to presentation. The workshops were all delivered by two medical students to classes comprising 14–38 students.

The workshop contained three main segments: i) introduction to mental illness and public stigma, ii) education about psychiatric disorders, and iii) treatment of mental illness and available community resources. As an introduction, students were asked about their perception and understanding of mental illness. The Wordle of stigmatizing terms (Figure 1) was used to lead an interactive discussion involving the prevalence, etiology, and negative stereotypes associated with mental illness. In the second segment, students were educated about the symptoms of depression, anxiety disorder, and schizophrenia, which were compared with normal emotional responses such as sadness and anxiety. In the last section, students were given information on the treatment of psychiatric disorders and community mental health resources relevant to them. Video clips of youths diagnosed and treated for the 3 mental illnesses were interspersed throughout the presentation. A visual demonstration of the “Mental Illness Jar” concept (Peay & Austin, 2011) was used to illustrate the multifactorial etiology of mental illness.

Data analysis

We excluded surveys from students who i) did not complete at least T1 and T2 surveys on the day of intervention, ii) submitted surveys without completing all 19 items, iii) or submitted surveys with multiple responses per item. Responses to each survey item were conceptualized as a three-point Likert scale ranging from 0 to 1, where a response indicating low stigma received a score of 0, an “unsure” response received 0.5, and a response indicating high stigma received a score of 1. An average total stigma score incorporating all 19 survey items was calculated for each student at each time point. Average scores for the stereotype endorsement and desire for social distance subscales were also calculated from the relevant seven and 12 items respectively. Planned comparisons across time points (T1 vs T2 and T1 vs T3) were carried out within subjects using the Wilcoxon signed rank test for

related samples for average total stigma scores, as well as stereotype scores and social distance scores.

We also looked at the change in stigma score across time points for each individual survey item. Three-by-three tables were constructed for each item, reflecting the frequency of response changes between survey time points (Supplemental Table 1). This was repeated for each comparison. Statistical significance was determined using the Stuart-Maxwell test for marginal homogeneity. For all tests, a Bonferroni correction was applied ($p = 0.05/25 = 0.002$) to adjust for the number of comparisons made between each single-item time-point pair ($n=19$), and total scale and subscale scores between time points ($n=6$).

To screen for possible effects of prior personal experience with mental illness, a post-hoc subgroup analysis was performed between participants who indicated “yes”, “no”, or “unsure” to whether they have ever known someone with mental illness. Average stigma scores at T1, change in average stigma score between T1 and T2 (T1 score – T2 score), and change in score between T1 and T3 (T1 score – T3 score) were compared between the three groups (Kruskal-Wallis one-way ANOVA).

RESULTS

Workshop participants included 355 students (58% female, age 14–17), of whom 321 consented to participate in the study, and of these, 76 were excluded (see methods). Of the 279 students who met inclusion criteria, 139 (50%) completed the T3 survey. Table 1 provides the demographics of our study participants broken down by gender, age, and response rate per school. Exploratory analysis found that average scores fell into a non-parametric distribution.

Total stigma scale scores decreased significantly from before (T1) to immediately after (T2) the workshop ($Z=-8.17$, $p<0.001$; $n=279$), and comparison between T1 and T3 showed a sustained reduction in total stigma scale scores one month following (T3) the workshop ($Z=-5.19$, $p<0.001$, $n=139$), see Figure 2. Specifically, the average stigma score prior to the workshop (T1) was 0.241 ($SD=0.008$), which declined significantly by 23% to 0.185 ($SD=0.007$) at T2 and sustained at 0.190 ($SD=0.012$) at T3.

Subscale scores for stereotype endorsement and desire for social distance were compared across the same time points. The significant reduction in stigma following the workshop was primarily attributed to a reduction in the desire for social distance stigma scores. Desire for social distance decreased from T1 to T2 ($Z=-10.16$, $p<0.001$, $n=279$), and remained low one month post-workshop ($Z=-5.80$, $p<0.001$, $n=139$), see Figure 3. Specifically, the average score for questions measuring desire for social distance was 0.233 ($SD=0.010$) at T1, which decreased by 40% to 0.140 ($SD=0.009$) at T2, and remained at 0.165 ($SD=0.014$) at T3. There were no significant changes in scores on the stereotype endorsement subscale immediately following workshop ($Z=-0.825$, $p=0.41$, $n=279$) or at one month post-workshop ($Z=-1.03$, $p=0.31$, $n=139$), see Figure 4.

In item-by-item analyses of average scores between T1 and T2, three out of seven stereotype items and 11 out of 12 social distance items had significantly reduced scores following the workshop, while two stereotype items had increased scores (Table 2).

The number of participants who indicated prior personal experience with mental illness, and the proportion who completed the T3 survey, are indicated in Table 3. In the subgroup analysis of participants who indicated “yes”, “no”, or “unsure” to whether they have ever known someone with mental illness, there were no significant differences in average stigma score at baseline (T1: $H(2)=5.49$, $p=0.064$), immediate workshop effectiveness ($H(2)=2.39$, $p=0.30$), or one month post-workshop effectiveness ($H(2) = 0.52$, $p = 0.77$).

There was a skewed response rate to T3 across schools (see Table 1). However, there were no significant differences between T3 responders and non-responders in baseline average stigma scores (T1: $Z=-0.696$, $p=0.52$), or change in stigma score immediately after the workshop (T1–T2: $Z= -1.69$, $p= 0.91$).

DISCUSSION

In this study, our aim was to evaluate an intervention we designed that would be simple enough to be delivered effectively by individuals without specialist training (in this case, second year medical students), short enough to be easily integrated into already-pressured school curricula, resource non-intensive (e.g. without a need to find and schedule local individuals with lived experience of mental illness who are willing to come and talk to the students), and effective in reducing public stigma related to mental illness. Our data show that a one-hour workshop led by medical students reduced stigma towards mental illness among high school students, with effects that were sustained over one month. To our knowledge, this is the first study to have evaluated the effect on mental illness stigma among adolescents of a short (one-hour) intervention combining indirect contact and education delivered by non-experts. Most interventions in the adolescent population have been led by experts (Pinfold & Stuart 2005), have ranged in length from 2 hours (Economou et al. 2012) to week-long duration (Schulze et al. 2003), or used a single method such as only education to target stigma (Watson et al. 2004).

Our data add support to the existing evidence that short (50 min to 1 hour) interventions can positively influence young adults’ attitudes towards mental illness (Chan et al. 2009; Patrick W Corrigan, Larson, Sells, Niessen, & Watson 2007; Desforjes et al. 1991; Morrison, Becker, & Bourgeois 1979). Our data also support the existing evidence that indirect contact (via video) can be effective in reducing mental illness stigma, at least in the short term (Brown et al. 2010; Chan et al. 2009; Wood & Wahl 2006). As the use of videos may be more readily and widely implementable, determining whether or not the positive effects can be sustained for more than one month would be a worthwhile endeavor.

The reduction in stigma scores immediately after the workshop can be primarily attributed to a 40% decrease in scores on the subscale reflecting desire for social distance from people with mental illness. Desire for social distance is a measure of an individual’s willingness to interact with someone who has a mental illness, and could be considered as a proxy for

behaviors related to discrimination against people with mental illness (Lauber, Nordt, Falcato, & Rössler 2004; Link & Phelan 2001). Thus, reductions in this facet of stigma are potentially important (Link & Phelan 2001).

However, there were no significant changes in the degree to which stereotypes about mental illness were endorsed before and after the workshop. There are a number of potential explanations for this observation. First, perhaps it is a function of the constructs of interest themselves. Stereotype endorsement has been described to be an automatic process, operating at a preconscious level (Gaertner & McLaughlin 1983; Macrae, Milne, & Bodenhausen 1994). Social distance, on the other hand, may require a higher level of cognitive function, incorporating emotions with knowledge as well as rationalizing. Social distance may therefore be more modifiable than the more automatic, preconscious process of stereotyping (Stuart & Arboleda-Florez 2001). Second, the content of the workshop may have targeted desire for social distance more effectively than stereotype endorsement. Third, perhaps there was some tension inherent between the content of our workshop and the specific manner in which the instrument we used measured stereotype endorsement. Specifically, the workshop involved providing evidence-based information about the symptoms of mental illness including, for example that in adolescents, loss of concentration and declining grades may indicate that someone is struggling with a mental health problem (Diagnostic and Statistical Manual of Mental Disorders, 5th Edition: DSM-5 2013; Gaertner & McLaughlin 1983; Macrae et al. 1994). Notably, more students agreed with the statement: "Someone who has a mental illness cannot cope with stress before exams" after the workshop than before. Agreement with this statement was classified as reflecting greater stigma, but it could be argued that this reflects how students understood the factual information about acute and untreated symptomology of mental illness. This raises potentially important questions about how negative stereotypes are conceptualized and measured in the context of stigma assessment, and suggests that knowledge of the symptoms associated with the acute and untreated phase of mental illness may actually exacerbate stigma (Diagnostic and Statistical Manual of Mental Disorders, 5th Edition: DSM-5 2013; Lauber et al. 2004; Penn et al. 1994).

We found that the reduction in average stigma scores both immediately and one month after the workshop was similar between participants who reported prior exposure to someone with mental illness and participants who did not. This suggests that prior exposure was neither a confounder in our study nor a pre-requisite to a positive response to intervention. However, we note that a large proportion of students reported prior experience with mental illness. Although this may reflect the true prevalence of mental illness in the community, we hypothesize that this may also in part reflect a perception of mental illness in family members and friends stemming from an incomplete understanding of clinical criteria. Further studies could perform more detailed screening of prior exposure and potential differences in response to intervention.

Although the logic behind the stigma process suggests a stepwise process by which stereotypes serve to justify negative social reactions and increase social distance (Link & Phelan 2001), our data suggest that it may be possible to influence later stages of the process without influencing earlier steps.

Limitations

As this was a pre-experimental study, we did not include a control group; therefore, it is impossible to definitively attribute the observed changes in stigma scale scores to our intervention. This would be an important avenue for future investigation. Furthermore, the sustained decrease in stigma scores one month post-intervention should be taken in light of the fact that not all students completed T3. The response rates were low, particularly in school C (where we suspect logistical issues were largely responsible for the low and disproportionate response rate). Although T1 and T2 surveys were administered in person by the authors, and completion of both was an inclusion criterion, T3 surveys were self-administered and completion of this time-point was not an inclusion criterion. In our sample, basic demographic factors, baseline stigma, and responses to the workshop did not appear to differ drastically between responders and non-responders to the one month post-intervention survey. Our study population also represents a restricted demographic (urban schools, average-high socioeconomic status). Future work may consider the influence of other variables (e.g. socioeconomic status, ethnicity) on attitudes. As with any questionnaire-based study, there is the possibility of social desirability bias (the tendency for the respondents to answer questions in a manner that will be viewed favorably by others) and the possibility that measured reduction in stigma may not translate into a change in behavior.

CONCLUSION

In this study, a resource non-intensive, one-hour classroom-based workshop delivered by non-experts was effective in reducing public stigma towards mental illness in adolescents. This effect was sustained at one month following the workshop. Further controlled studies are required to determine whether the effects are sustained over longer periods. Our data were driven by changes in desire for social distance. There was no change in the degree to which stereotypes were endorsed – this raises potentially important questions about measurement of stereotype endorsement in studies of stigma.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Figure 1.

A Wordle visually depicting words that Grade 10 high school students used to describe someone with a mental illness that was used in the workshop to facilitate discussion. Larger words displayed in more prominence were used more frequently.

Figure 2.

Average total stigma scores at each time point: immediately prior (T1, n=279), immediately following (T2, n=279), and one month following (T3, n=139) the workshop. The full range of possible average scores was from 0 and 1, and a lower score indicates less stigma.

Figure 3.

Average scores on the social distance subscale at each time point: immediately prior (T1, n=279), immediately following (T2, n=279), and one month following (T3, n=139) the workshop. The full range of possible average scores was from 0 and 1, and a lower score indicates less stigma.

Figure 4.

Average scores on the stereotype subscale at each time point: immediately prior (T1, n=279), immediately following (T2, n=279), and one month following (T3, n=139) the workshop. The full range of possible average scores was from 0 and 1, and a lower score indicates less stigma.

Table 1

Demographic characteristics of study participants that satisfy inclusion criteria.

	Male	Female	Unspecified gender	Average Age (Range)	Response T1 and T2	Response T3 (% of T1/T2 respondents)	Total Participants
School A	41	57	0	15.3 (15–16)	98	80 (82%)	98
School B	29	56	1	14.3 (14–16)	86	37 (43%)	86
School C	46	47	2	15.3 (15–17)	95	22 (23%)	95
All Schools	116 (42%)	160 (57%)	3 (1%)	15.0 (14–17)	279	139 (50%)	279

Table 2

Item-by-item analysis of overall stigma scores pre- and post-workshop. Items 1 to 7 comprise the stereotype endorsement subscale and items 8 to 19 comprise the social distance subscale. Stigma scores are averages of all responses, where yes = 1, unsure = 0.5, and no = 0. Items 5, 7, 9, 10, 13 were reverse coded prior to analysis. Data presented are from 279 secondary students (160 female, age range 14–17).

Item	Average Stigma Score (SD)		Maxwell-Stuart Chi square statistic (*p<0.05/25)
	T1	T2	
1. Someone who has a mental illness cannot cope with stress before exams.	0.31 (0.32)	0.42 (0.41)	38.64 (*p<0.0001)
2. Mostly, someone who has a mental illness comes from a family with little money.	0.039 (0.14)	0.052 (0.17)	1.31 (p = .52)
3. Someone who has a mental illness cannot be helped by doctors.	0.095 (0.21)	0.036 (0.15)	30.72 (*p<0.0001)
4. When meeting someone with a mental illness, one should better watch out.	0.25 (0.36)	0.18 (0.32)	16.02 (*p = 0.0003)
5. Someone who has a mental illness can be good at school.	0.13 (0.29)	0.12 (0.28)	1.38 (p = 0.4995)
6. Someone who has a mental illness blows his/her top for the slightest reason.	0.35 (0.34)	0.42 (0.39)	1.38 (*p <0.0001)
7. Students who have a mental illness are particularly good at music or art.	0.62 (0.33)	0.61 (0.35)	7.15 (p = 0.0280)
8. I would be afraid to talk to someone who has a mental illness.	0.15 (0.31)	0.050 (0.17)	31.80 (*p <0.0001)
9. I would not be upset or disturbed to be in the same class with someone who has a mental illness.	0.20 (0.36)	0.22 (0.39)	13.84 (*p = 0.0010)
10. I could imagine making friends with someone who has a mental illness.	0.22 (0.32)	0.11 (0.26)	38.64 (*p <0.0001)
11. I would feel embarrassed or ashamed if my friends knew that someone in my family has a mental illness.	0.13 (0.29)	0.082 (0.24)	19.68 (*p = 0.0001)
12. If the person sitting next to me in class develops a mental illness, I would rather sit somewhere else.	0.26 (0.37)	0.12 (0.29)	46.98 (*p <0.0001)
13. If one of my friends developed a mental illness, I would go and see him/her at the hospital.	0.059 (0.21)	0.048 (0.19)	5.61 (p = 0.0602)
14. I would not invite someone who has a mental illness to my birthday party.	0.28 (0.35)	0.15 (0.29)	51.11 (*p <0.0001)
15. I would not bring along someone who has a mental illness when I meet my friends.	0.30 (0.36)	0.19 (0.32)	38.49 (*p <0.0001)
16. When going on a class outing, someone with a mental illness should rather stay at home.	0.10 (0.23)	0.079 (0.23)	13.73 (*p = 0.001)
17. I would never fall in love with someone who has a mental illness.	0.46 (0.38)	0.30 (0.34)	52.29 (*p <0.0001)
18. Someone who has a mental illness should not work in jobs that involve taking care of children or young people.	0.45 (0.40)	0.27 (0.37)	57.65 (*p <0.0001)
19. Someone who has a mental illness should not go to a regular school.	0.17 (0.31)	0.070 (0.23)	43.79 (*p <0.0001)

Table 3

Proportion of participants with prior exposure to someone with mental illness

Prior exposure to someone with mental illness/Survey time point	Baseline, T1 (% of total cases)	T3 (% of baseline cases)
Yes	191 (69%)	88 (46%)
No	59 (21%)	38 (64%)
Unsure	27 (10%)	13 (48%)
Total	277 (2 unreported cases)	139