



Mental Health  
Commission  
of Canada

Commission de  
la santé mentale  
du Canada

# Opening Minds In High School:

Results of a Contact-Based Anti-Stigma Intervention

The Dream Team Program

Michelle Koller, PhD Candidate, Shu-Ping Chen, PhD,  
Carmen Charles, Lindsay Kochen, Peter Lye, Linda Chamberlain,  
Phillip Dufresne, Mark Shapiro, Margaret Redford, Heather Cunningham,  
Heather Stuart, PhD

January, 2013

### Acknowledgements

This project was made possible through funding from the Opening Minds Anti-stigma Anti-discrimination Initiative of the Mental Health Commission of Canada. The work of the Mental Health Commission of Canada is supported by a grant from Health Canada. The views expressed in this publication are those of the authors.

The authors wish to thank the schools, teachers, staff, students, community professionals, and speakers who participated in this project.



## **OPENING MINDS: Changing how we see mental illness.**

As part of its 10-year mandate, The Mental Health Commission of Canada has embarked on an anti-stigma initiative called *Opening Minds* to change the attitudes and behaviours of Canadians towards people with a mental illness. *Opening Minds* is the largest systematic effort undertaken in Canadian history to reduce the stigma and discrimination associated with mental illness. *Opening Minds* is taking a targeted approach, initially reaching out to healthcare providers, youth, the workforce and media. *Opening Minds* philosophy is to build on the strengths of existing programs from across the country, and to scientifically evaluate their effectiveness. A key component of programs being evaluated is contact-based educational sessions, where target audiences hear personal stories from and interact with individuals who have experience with mental illness and have recovered or are managing their illness. *Opening Minds* goal is to replicate effective programs nationally, develop new interventions to address gaps in existing programs and add other target groups over time.

For more information go to:

[www.mentalhealthcommission.ca/English/Pages/OpeningMinds.aspx](http://www.mentalhealthcommission.ca/English/Pages/OpeningMinds.aspx)

## **Introduction and Purpose**

Stigma and discrimination have gained the attention of the public health and policy communities as a hidden and costly burden caused by society's prejudicial reaction to people with a mental illness (World Health Organization, 2001), Stigma and discrimination pose major obstacles in virtually every life domain, carrying significant negative social and psychological impacts. Reducing stigma and discrimination have become important policy objectives at both international and national levels (Sartorius & Schulze, 2005). The 2009 launch of the Mental Health Commission's *Opening Minds* anti-stigma anti-discrimination initiative marked the largest systematic effort to combat mental illness related stigma in Canadian History.

The *Opening Minds* program has partnered with a number of programs that deliver contact-based education to primary and high school students throughout Canada. Contact-based education involves people who have experienced a mental illness to educate students by telling their personal stories and allowing time for active discussion. In some cases, teacher lesson plans accompany the classroom presentations.

This report is intended to provide programs with an overview of their key evaluation results. A subsequent initiative will examine each program's components in depth in order to highlight the active ingredients that are associated with the largest change.

## **The Dream Team**

### **Program Overview**

The Dream Team's experience demonstrates that a supportive, inclusive society is vital for reducing stigma. Their message is simple yet powerful. In order to battle the stain of stigma and discrimination surrounding mental illness, we need to ensure active participation by consumer survivors in the process. The Dream Team program rests on empowering consumers to be agents of change through collaborative efforts in education, research, advocacy work. The Dream Team engages in a contact based approach through telling our stories to youth in middle schools, high schools and universities. The members of the Dream Team each share their personal story about their struggle with mental health, addictions and some of their life battles. They address the importance of confronting stigmatizing attitudes and behaviors that help perpetuate stigma in society, particularly around mental health issues. Some members of the Dream Team hold the view that the stigma they experienced as a result of having a mental illness was worse than the illness itself. By sharing their vulnerability and very personal details about their life experiences, the Dream Team helps to "normalize" the experience of those living with mental health issues. An integral part of their story also involves the importance of having supports in place, supportive housing being a central tenet of their recovery. Students appreciate their openness, honesty, and knowledge around mental health.

The Dream Team Program was tested in high schools across the Greater Toronto Region. Each presentation lasted for approximately 1 hour and 30 minutes, and consisted of a background of the Dream Team and their work in stigma reduction, and involved 3 - 4 individuals telling their own story of living with mental health and some of the implications of what that means. Individuals of the Dream Team explain that often living with mental health issues was a precursor for falling through the cracks of our current system, in the areas of health care, housing and education. While each story varies in its content, the role of having an inclusive, supportive environment in which to recover from mental illness is echoed in every story. In the Dream Team's case, the role of having "supportive housing" – that is housing that offers supports such as social workers, community kitchens, care giving, recreational programming plays a pivotal role in helping people with mental illness keep and retain housing. The Dream Team are very effective in demonstrating that mental illness can affect anyone, and open the way for youth to engage in open and honest dialogues about perceptions about mental illness.

### **Approach to Data Collection**

Students were surveyed before and after the contact-based intervention.

All programs participating in this network initiative used the same pre- and post-test survey questionnaires to collect their data. These surveys were adapted from items used by the six contact based programs that participated in the instrument development phase of this project. The resulting Stigma Evaluation Survey contained 22 self-report items. Of these:

- 11 items measured **stereotyped attributions**
  - controllability of illness – 4 items,
  - potential for recovery – 2 items, and
  - potential for violence and unpredictability – 5 items
- 11 items measured expressions of **social tolerance**, which include both social distance and social responsibility items
  - desire for social distance – 7 items, and
  - social responsibility for mental health issues – 4 items

All items were scored on a 5-point agreement scale, ranging from strongly agree to strongly disagree. To avoid potential response sets some items were positively worded while others were negatively worded. Items were scored so that higher scores on any item would reflect higher levels of stigma. The scales had good reliability in this pooled sample with a pre-test Cronbach's alpha of 0.80 for the Stereotype Scale and 0.82 for the Social Tolerance Scale. Both are well above the conventional threshold of 0.70 indicating that they are highly reliable. Information on gender, age, grade, and prior contact with someone with a mental illness (close friend or family member) was also collected.

## Results

### Sample Characteristics

Three hundred and twenty seven high school students completed the pre-test and post-test surveys. The characteristics of the students are presented in **Table 1**. The majority (97%) were female. Over half (57%) were 15 or 16 years old and just over one half (56%) were in either grade 9 or grade 10. On the pre-test one half (50%) of the students indicated they knew someone with a mental illness and 25% indicated that they had a mental illness.

**Table 1.** Sample Characteristics for Those Who Completed Both the Pre and Post-test

Characteristic	% (n=327)
<b>Gender</b> <ul style="list-style-type: none"> <li>• Male</li> <li>• Female</li> <li>• Missing</li> </ul>	3.1% (10) 96.9% (316) -- (1)
<b>Age</b> <ul style="list-style-type: none"> <li>• 14</li> <li>• 15</li> <li>• 16</li> <li>• 17</li> <li>• 18+</li> <li>• Missing</li> </ul>	17.0% (55) 31.5% (102) 25.0% (81) 18.5% (60) 8.0% (26) --(3)
<b>Grade</b> <ul style="list-style-type: none"> <li>• 9</li> <li>• 10</li> <li>• 11</li> <li>• 12</li> <li>• Missing</li> </ul>	25.7% (84) 30.6% (100) 23.5% (77) 20.2% (66) -- (0)
<b>Contact- Pre-test - Does someone you know have a mental illness (multiple responses accepted)</b> <ul style="list-style-type: none"> <li>• No</li> <li>• Uncertain</li> <li>• Close friend</li> <li>• Family member</li> <li>• Somebody else</li> <li>• I do</li> <li>• Missing</li> </ul>	31.6% (95) 18.6% (56) 6.3% (19) 13.3% (40) 11.0% (33) 24.6% (74) -- (26)

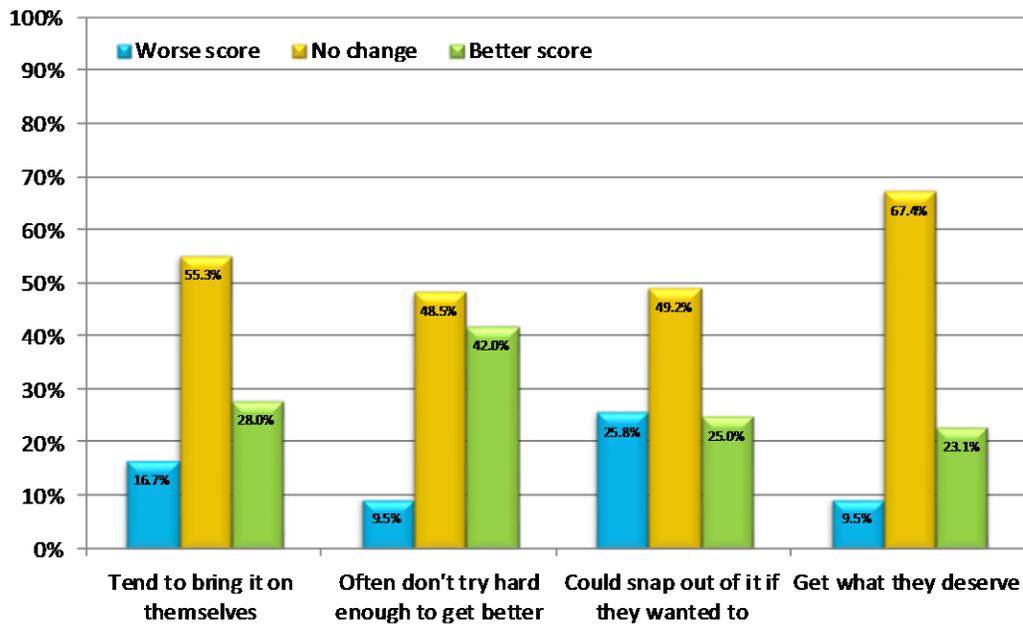
## Stereotypes Attributions

With the exception of the items measuring dangerousness, violence, and predictability, at the time of the pre-test, the majority of respondents held positive (non-stereotypical) attitudes toward people with a mental illness. For example, before the intervention students tended to disagree with the common stereotypes that people with a mental illness get what they deserve (77%) or that they need to be locked away (73%). Seventy percent disagreed that people with mental illnesses don't try hard enough to get better and sixty one percent disagreed with the statements "People with a mental illness could snap out of it if they wanted to" and "Most people with a mental illness are too disabled to work". However, only 14% disagreed with the stereotype you can never know

what someone with a mental illness is going to do and only 17% disagreed with the statement that people with a mental illness often become violent if not treated (see **Appendix A** for detailed tables).

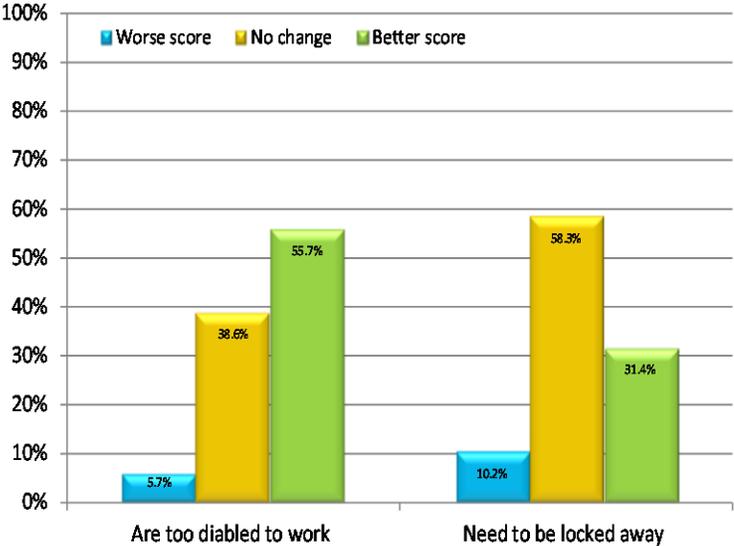
**Figure 1** shows the proportion of students who made any change on the controllability items from pre-test to post-test (where pre-test and post-test surveys were individually matched). The greatest positive shift (reflecting reduced stigma) was for the item, “people with mental illnesses often don’t try hard enough to get better” (42% improvement). The proportion that improved their response on the item “people with mental illnesses tend to bring it on themselves” was 28%. There was a 25% improvement for the item, “people with mental illnesses could snap out of it if they wanted to”, and a 23% improvement for the item, “most people with mental illness get what they deserve”. The majority of students (48.5%-67.4%) did not change scores. Percentages varied by item. These reflected two conditions: either they already held a non-stigmatizing attitude and stayed the same or they had a negative attitude on the pre-test and did not improve. A detailed item-by-item breakdown is shown in Appendix A, page A3. On most items, a relatively small proportion of students (5.7%-25.8%) showed a negative change. Please refer to **Appendix A** (p. A3) for specifics.

**Figure 1.** Proportion of students who made any change on the Likert scale from pre-test to post-test – Controllability Items (n=264 pre-test/post-test pairs). The bars show the proportion (%) of students who had a post-test score that was worse than the pre-test score, did not change, and got better.



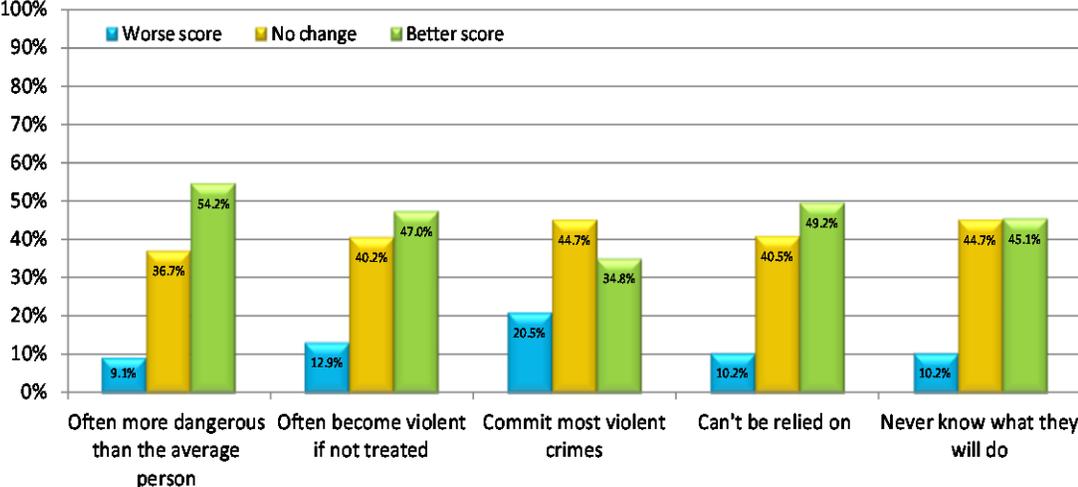
**Figure 2** shows the proportion of students who made any change on the recovery items. Over one half (55.7%) improved on the item, “most people with a mental illness are too disabled to work”. This was the largest improvement on any single item. Almost one third (31.4%) improved on the item, “people with serious mental illnesses need to be locked away”. Students whose scores did not change reflected two conditions: either they already held a non-stigmatizing attitude and stayed the same or they had a negative attitude on the pre-test and did not improve. A relatively small proportion of students (5.7% and 10.2%) showed a negative change. Please refer to **Appendix A** (p. A3) for specifics.

**Figure 2.** Proportion of students who made any change on the Likert scale from pre-test to post-test – Recovery Items (n=264 pre-test/post-test pairs)



**Figure 3** shows the proportion of students who made any change on the items dealing with violence and unpredictability. All showed a large improvement of 35% or more. The greatest improvement was for the items, “people with a mental illness are often more dangerous than the average person” (54.2% improvement) and “you can’t rely on someone with a mental illness”(49.2% improvement). Students whose scores did not change reflected two conditions: either they already held a non-stigmatizing attitude and stayed the same or they had a negative attitude on the pre-test and did not improve. Some students (9.2% - 20.5%) showed a negative change. Please refer to **Appendix A** (p. A3) for specifics.

**Figure 3.** Proportion of students who made any change on the Likert scale from pre-test to post-test – Violence/Unpredictability Items (n=264 pre-test/post-test pairs)

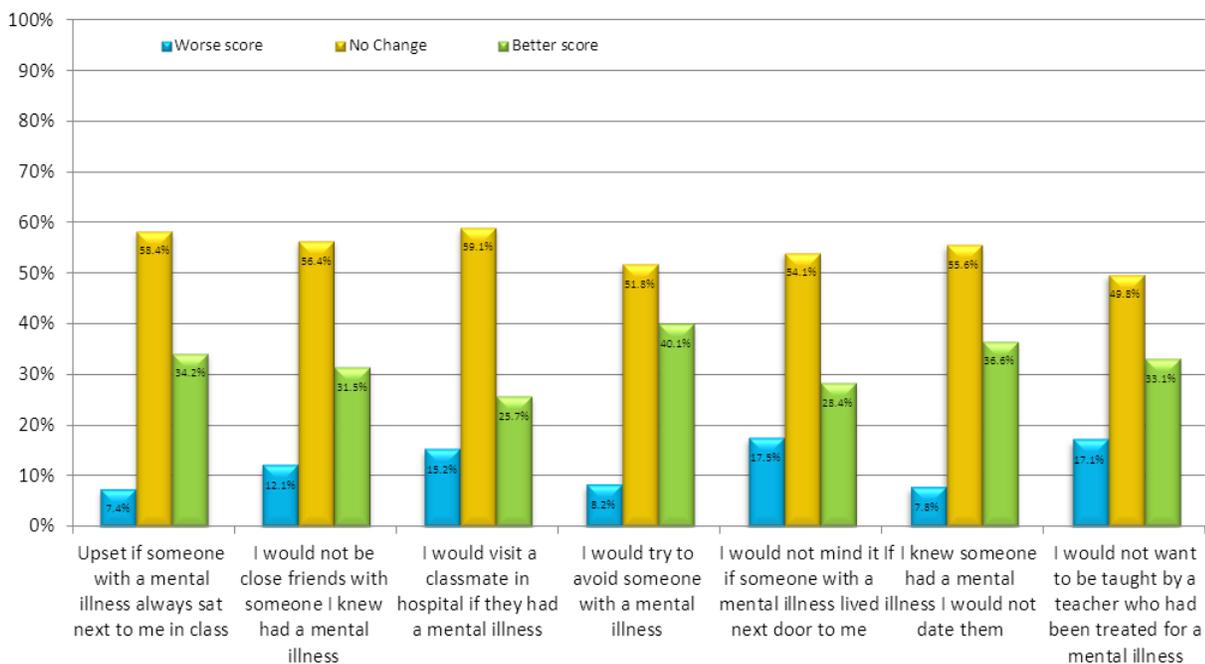


## Expressions of Social Distance

Prior to the intervention students showed generally positive, non-stigmatizing responses to six out of the seven social distance items. For example, 76.7% agreed with the statement “I would not mind if someone with a mental illness lived next door to me”; and 74.7% agreed with the statement “I would visit a classmate in hospital if they had a mental illness”. The most stigmatizing responses were given for the item “If I knew someone had a mental illness I would not date them” with only 21.0% of respondents disagreeing with the statement (see **Appendix A** for detailed tables).

**Figure 4** shows the proportion of students who made any change on the social distance items. All items showed improvement. For example, following the intervention there was a 40.1% improvement for the item, “I would try to avoid someone with a mental illness” and a 36.6% improvement for the item “If I knew someone had a mental illness I would not date them”. Students whose scores did not change reflected two conditions: either they already held a non-stigmatizing attitude and stayed the same or they had a negative attitude on the pre-test and did not improve. Some students (7.4%-17.5%) showed a negative change (see **Appendix A**, p. A8).

**Figure 4.** Proportion of students who made any change on the Likert scale from pre-test to post-test – Social Distance Items (n=257 pre-test/post-test pairs)

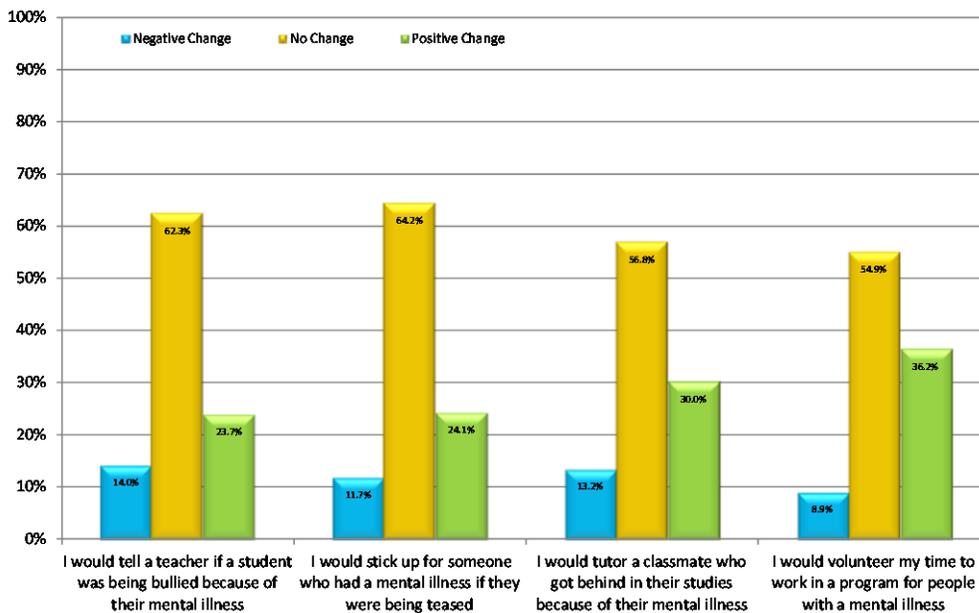


## Social Responsibility

Before the program intervention, students were generally socially conscious. Eighty-two percent said “they would stick up for someone who had a mental illness if they were being teased” and 82% percent said they “would tell a teacher if a student was being bullied because of their mental illness” (see **Appendix A** for detailed tables)

**Figure 5** shows the proportion of students who made any change on the social responsibility items. The highest changes were for the items “I would volunteer my time to work in a program for people with mental illness” (36.2% improvement) and “I would tutor a classmate who got behind in their studies because of their mental illness” (30.0% improvement). Students whose scores did not change reflected two conditions: either they already held a non-stigmatizing attitude and stayed the same or they had a negative attitude on the pre-test and did not improve. A relatively small proportion of students (8.9% and 14.0%) showed a negative change (see Appendix A, p. A8).

**Figure 5.** Proportion of students who made any change on the Likert scale from pre-test to post-test – Social Responsibility items (n=257 pre-test/post-test pairs)



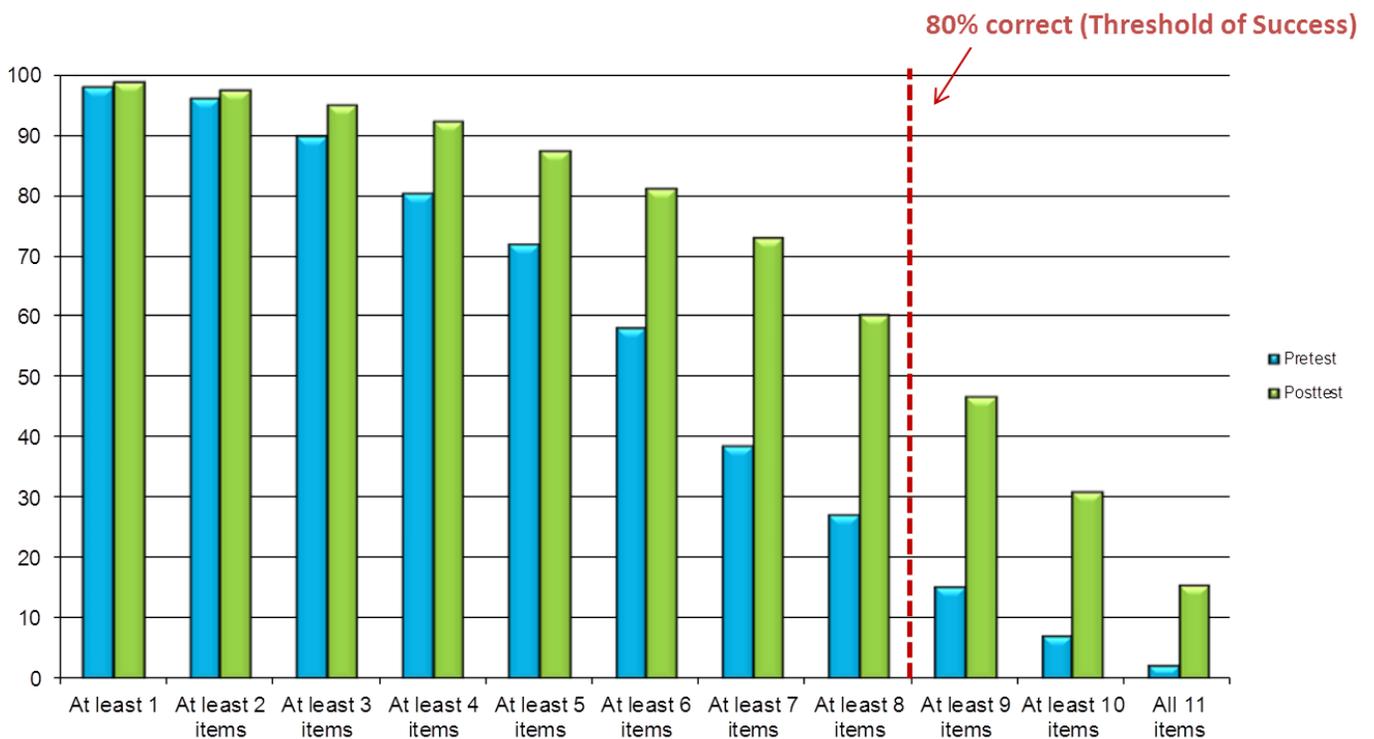
## Program Success

In order to provide a measure of the overall success of the intervention, we chose (*a priori*) a cut-off score of 80% correct. Though somewhat arbitrary, we have used this cutoff in previous work to count the number of students who achieve an A grade or higher following an educational session. More specifically, success was measured by

comparing the proportion of students who obtained 80% or more correct (non-stigmatizing) answers on the post-test compared to the pre-test.

**Figure 6** shows the cumulative percent of items reflecting non-stigmatizing responses for the Stereotype Scale. Prior to the intervention, 15% of students gave a non-stigmatizing response to at least 9 of the 11 stereotype items reflecting 80% correct (corresponding to the red-dotted line on the graphs below). At post-test this had increased to 47% (reflecting a 32% improvement overall). When items scores were aggregated to reflect a scale value out of 55 (higher scores reflecting more stigma), the average (median score) dropped from 27% at pre-test to 22% at post-test (reflecting a 5% drop in average score). A Wilcoxon Signed Rank Test showed that at post-test there was a significant drop in the Stereotype Scale Score ( $Z = -10.45, p < .001$ ).

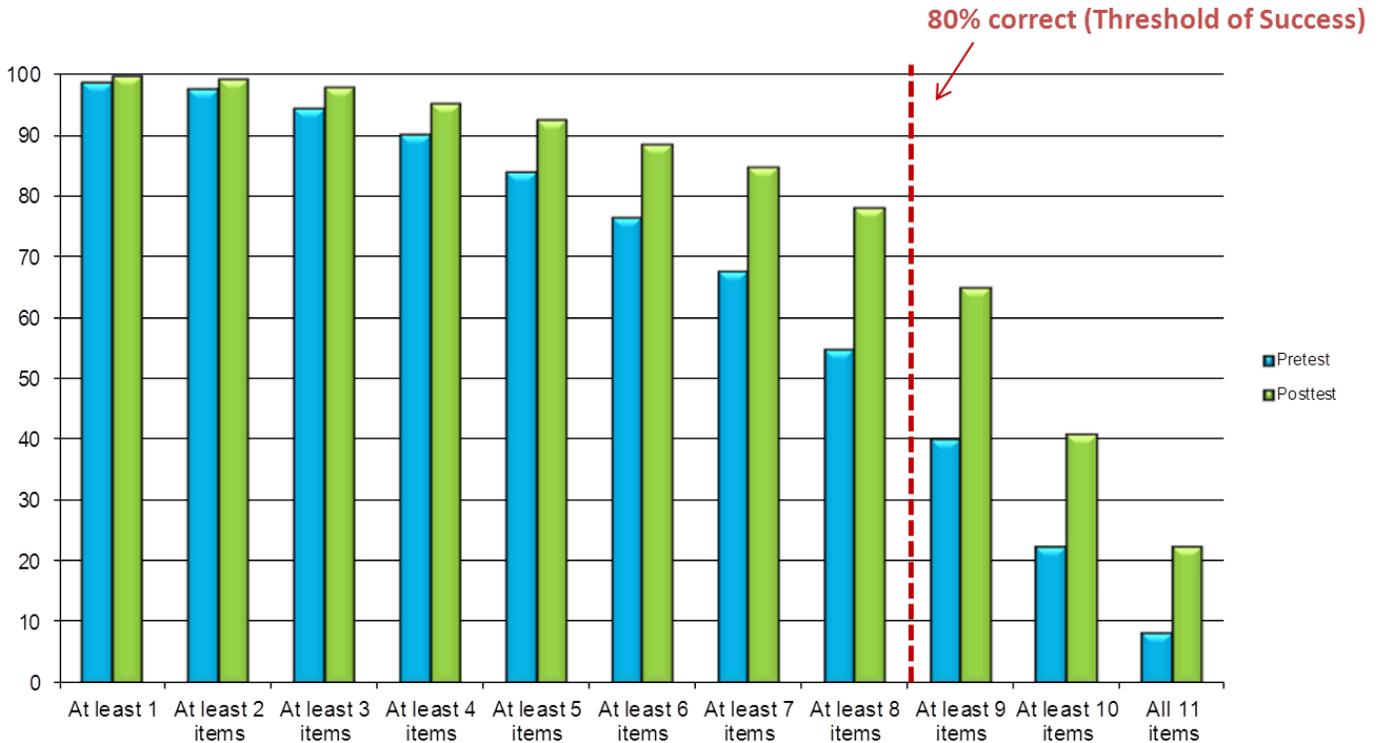
**Figure 6.** Cumulative Percent of Stereotype Scale Items Reflecting Non-stigmatizing response (n=264)



**Figure 7** shows the cumulative percent of items reflecting non-stigmatizing responses for the Social Tolerance Scale. Prior to the intervention, 40% of students gave a non-stigmatizing response to at least 9 of the 11 items reflecting 80% correct (corresponding to the red-dotted line on the graphs below). At post-test this had increased to 65% (reflecting a 25% improvement overall). When items scores were aggregated to reflect a scale value out of 55 (higher scores reflecting more stigma), the average (median score) dropped from 24% at pre-test to 22% at

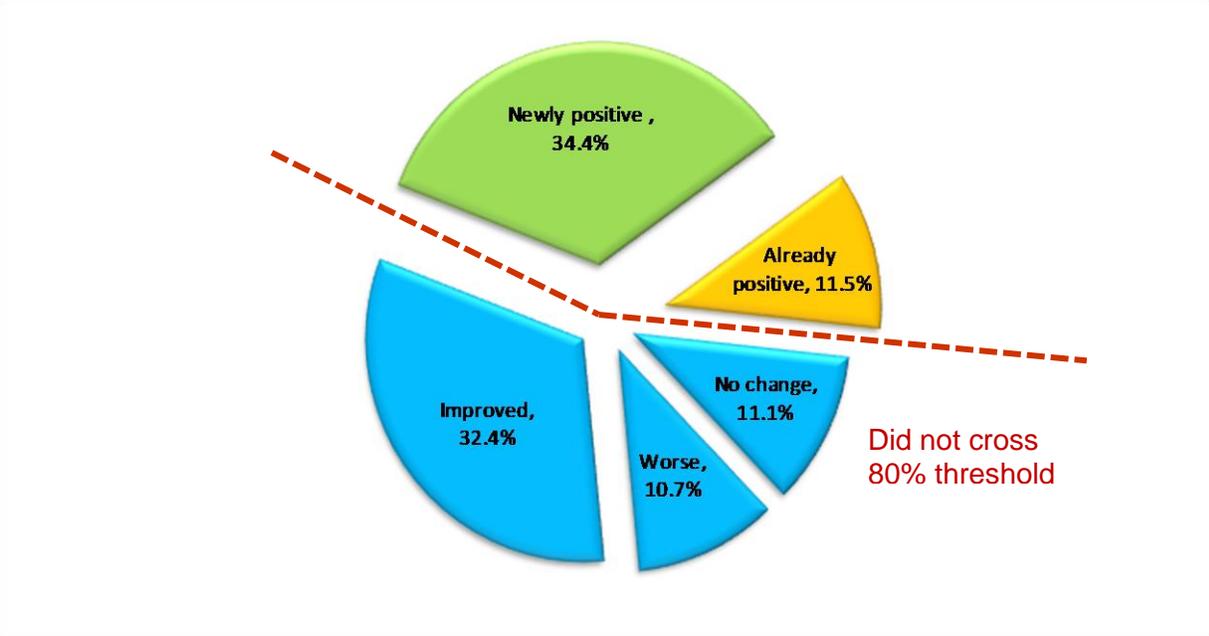
post-test (reflecting a 2% drop in average score). A Wilcoxon Signed Rank Test showed that at post- test there was a significant drop in the Stereotype Scale Score ( $Z = -7.84.45, p < .001$ ).

**Figure 7.** Cumulative Percent of Tolerance Items Reflecting Non-stigmatizing response (n=257)



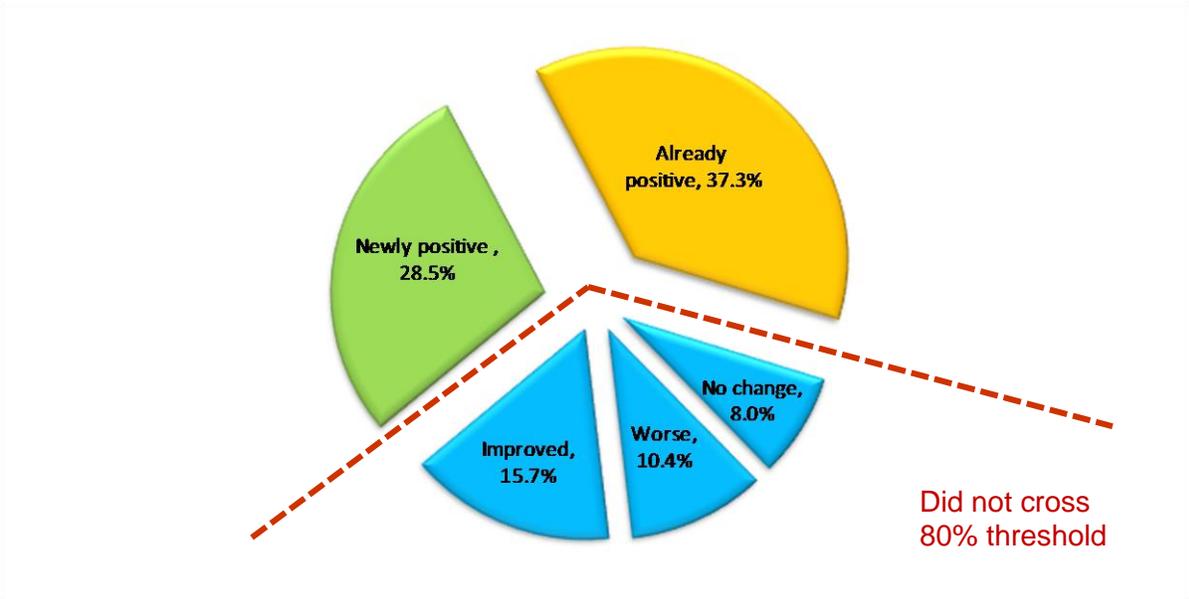
**Figure 8 and 9** show the change in stereotype and social tolerance scale scores. Prior to the intervention more respondents were positive (80% threshold, 9 out of 11 positive responses) on the tolerance scale (37.3%) compared to the stereotype scale (11.5%). After the intervention, the percent that improved their attitudes by crossing the 80% threshold was 34.4% (stereotype scale) and 28.5% (tolerance scale). The percent that improved their scores but did not cross the 80% threshold was 32.4% (stereotype scale) and 15.7% (tolerance scale).

**Figure 8.** Change in Stereotype Scale Score (n=249)



Notes: To adjust for regression to the mean, pre-test outliers (those whose pre-test scale scores were over 2 standard deviations beyond the mean) were omitted from this analysis.

**Figure 9.** Change in Social Tolerance Scale Score (n=249)



## Conclusion

This report describes the results of a contact-based anti-stigma intervention provided to high school students. The results show that this program was successful in improving the proportion of students who got 80% of the answers correct, so received the equivalent of an A grade on the tests used to assess social stereotypes and social tolerance.

The Dream Team is a compelling illustration of how stigma can be reduced by those it affects most; people with lived experience of mental illness. By involving people with lived experience in the battle against stigma and discrimination, they are empowering themselves, building their confidence and normalizing the experience of people with mental health issues. The idea that the Dream Team members run program can in fact be an effective tool for stigma reduction. The Dream Team program demonstrates a meaningful change that comes from utilizing the expertise and experience of those who have lived through the stigma. Changing societal stereotypes needs to be deliberate, but it also needs to be inclusive of those whose lives have been negatively affected by stigma. Although it may take some time for the full effects of empowerment to be felt, the Dream Team experience is a positive one. The model of the Dream Team can be utilized as a tool to produce meaningful, impactful strategies for reducing the effects of stigma and discrimination in society.

## Appendix A – The Dream Team

Stereotyped attribution items are shown in the three tables below. For ease of presentation, items were recoded into three categories: agree (strongly agree and agree), neutral, and disagree (disagree and strongly disagree) and grouped by theme controllability of illness, potential for recovery and potential for violence and unpredictability.

### Stigma Stereotype Results

#### Controllability Items

Stereotyped Attributions Items	Pre-test % (n=264)	Post-test % (n=264)	% Change
<b>4. People with a mental illness tend to bring it on themselves.</b> <ul style="list-style-type: none"> <li>Strongly disagree/disagree</li> <li>Unsure</li> <li>Strongly agree/ agree</li> </ul>	59.8% (158) 28.0 % (74) 12.1% (32)	69.3% (183) 20.8% (55) 9.8% (26)	9.5 -7.2 -2.3
<b>5. People with mental illnesses often don't try hard enough to get better.</b> <ul style="list-style-type: none"> <li>Strongly disagree/disagree</li> <li>Unsure</li> <li>Strongly agree/ agree</li> </ul>	69.7% (184) 18.9% (50) 11.4% (30)	88.3% (233) 7.6 % (20) 4.2% (11)	18.6 -11.3 -7.2
<b>6. People with a mental illness could snap out of it if they wanted to.</b> <ul style="list-style-type: none"> <li>Strongly disagree/disagree</li> <li>Unsure</li> <li>Strongly agree/ agree</li> </ul>	61.0% (161) 26.1 % (69) 12.9 % (34)	62.9% (166) 20.1% (53) 17.0% (45)	1.9 -6.0 4.1
<b>14. Most people with a mental illness get what they deserve.</b> <ul style="list-style-type: none"> <li>Strongly disagree/disagree</li> <li>Unsure</li> <li>Strongly agree/ agree</li> </ul>	77.3% (204) 18.9% (50) 3.8% (10)	85.2%(225) 12.9% (34) 1.9% (5)	7.9 -6.0 -1.9

### Recovery Items

Stereotyped Attributions Items	Pre-test % (n=264)	Post-test % (n=264)	% Change
<b>3. Most people with a mental illness are too disabled to work.</b>			
• Strongly disagree/disagree	60.6% (160)	87.1% (230)	26.5
• Unsure	26.9% (71)	9.1% (24)	-17.8
• Strongly agree/ agree	12.5 % (33)	3.8 % (10)	-8.7
<b>15. People with serious mental illnesses need to be locked away.</b>			
• Strongly disagree/disagree	73.1% (193)	85.6% (226)	12.5
• Unsure	19.7% (52)	12.1% (32)	-7.6
• Strongly agree/ agree	7.2% (19)	2.3% (6)	-4.9
Note: Missing excluded from percent calculation			

### Violence/ Unpredictability Items

Stereotyped Attributions Items	Pre-test % (n=264)	Post-test % (n=264)	% Change
<b>7. People with a mental illness are often more dangerous than the average person.</b>			
• Strongly disagree/disagree	41.7% (110)	75.8 % (200)	34.1
• Unsure	34.1% (90)	17.4% (46)	-16.7
• Strongly agree/ agree	24.2% (64)	6.8% (6.8)	-17.4
<b>8. People with a mental illness often become violent if not treated.</b>			
• Strongly disagree/disagree	17.0% (45)	43.6% (115)	26.6
• Unsure	48.1% (127)	33.7% (89)	-14.4
• Strongly agree/ agree	34.8% (92)	22.7% (60)	-12.1
<b>10. Most violent crimes are committed by people with a mental illness.</b>			
• Strongly disagree/disagree	56.8% (150)	69.7% (184)	12.9
• Unsure	31.1% (82)	22.3% (59)	-8.8
• Strongly agree/ agree	12.1% (32)	8.0% (21)	-4.1
<b>11. You can't rely on someone with a mental illness.</b>			
• Strongly disagree/disagree	54.2% (143)	77.7% (205)	23.5
• Unsure	32.6% (86)	19.7% (52)	-12.9
• Strongly agree/ agree	13.3% (35)	2.7% (7)	-10.6
<b>12. You can never know what someone with a mental illness is going to do.</b>			
• Strongly disagree/disagree	13.6% (36)	33.7% (89)	20.1
• Unsure	36.4% (96)	38.6% (102)	2.2
• Strongly agree/ agree	50.0% (132)	27.7% (73)	-22.3
Note: Missing excluded from percent calculation.			

Appendix A – The Dream Team

Survey Item	Negative change % (n)	No change % (n)		Positive change % (n)	McNemar-Bowker Significance
		Stigmatizing* % (n)	Non-stigmatizing* % (n)		
<b>Controllability Items</b>					
4 People with a mental illness tend to bring it on themselves	16.7% (44)	55.3% (146)		28.0% (74)	$\chi^2 = 14.6$ ; df = 8; p=.066
		16.7% (44)	38.6% (102)		
5 People with mental illnesses often don't try hard enough to get better	9.5% (25)	48.5% (128)		42.0% (111)	$\chi^2 = 60.1$ ; df = 8; p<.001
		6.1% (16)	42.4% (112)		
6 People with a mental illness could snap out of it if they wanted to	25.8% (68)	49.2% (130)		25.0% (66)	$\chi^2 = 8.2$ ; df = 9 p= .513
		14.8% (39)	34.5% (91)		
14 Most people with a mental illness get what they deserve	9.5% (25)	67.4% (178)		23.1% (61)	$\chi^2 = 15.2$ ; df = 3; p<.002*
		11.0% (29)	56.4% (149)		
<b>Recovery Items</b>					
3 Most people with a mental illness are too disabled to work	5.7% (15)	38.6% (102)		55.7% (147)	$\chi^2 = 113.5$ ; df = 10; p<.001
		6.8% (18)	31.8% (84)		
15 People with serious mental illnesses need to be locked away	10.2% (27)	58.3% (154)		31.4% (83)	$\chi^2 = 24.5$ ; df = 3 ; p<.001*
		8.3% (22)	50.0% (154)		
<b>Violence / Unpredictability Items</b>					
7 People with a mental illness are often more dangerous than the average person	9.1% (24)	36.7% (97)		54.2% (143)	$\chi^2 = 92.3$ ; df = 10; p<.001
		14.4% (38)	22.3% (59)		
8 People with a mental illness often become violent if not treated	12.9% (34)	40.2% (106)		47.0% (124)	$\chi^2 = 63.0$ ; df = 10; p<.001
		34.1% (90)	6.1% (16)		
10 Most violent crimes are committed by people with a mental illness	20.5% (54)	44.7% (118)		34.8% (92)	$\chi^2 = 18.5$ ; df = 9; p=.029
		12.9% (34)	31.8% (84)		
11 You can't rely on someone with a mental illness	10.2 (27)	40.5% (107)		49.2% (130)	$\chi^2 = 72.9$ ; df = 8; p<.001
		11.0% (29)	29.5% (78)		
12 You can never know what someone with a mental illness is going to do	10.2 (27)	44.7% (118)		45.1% (119)	$\chi^2 = 63.7$ ; df 9=; p<.001
		37.9% (100)	2.3% (6)		
<p>Notes:</p> <ul style="list-style-type: none"> <li>• Base size is those who responded to all the pre-test and post-test items (n=264)</li> <li>• Change was defined as moving on 5-point Likert Scale from the pre-test to the post-test (negative change: toward a more stigmatizing answer; positive change: toward a less stigmatizing answer)</li> <li>• *The non-stigmatizing response means agree or strongly agree; the stigmatizing response includes unsure, disagree, and strongly disagree</li> <li>• Statistical tests use the original five point scale, positive change does not necessary imply non stigmatizing response</li> <li>• Degrees of freedom depend on the number of non-empty cells and may vary by question due to different response patterns</li> <li>• * Due to a large number of empty cells, analyses were performed using a collapsed 3 point scale instead of the original five point scale.</li> </ul>					

Percent Non Stigmatizing Endorsement of Stereotype Items

	<b>Pre-test % (n=264)</b>	<b>Post-test % (n=264)</b>
None	1.9% (5)	1.1% (3)
At least 1	98.1% (259)	98.9% (261)
At least 2 items	96.2% (254)	97.3% (257)
At least 3 items	89.8% (237)	95.1% (251)
At least 4 items	80.3% (212)	92.4% (244)
At least 5 items	72.0% (190)	87.5% (231)
At least 6 items	58.0% (153)	81.1% (214)
At least 7 items	38.6% (102)	73.1% (193)
At least 8 items	27.3% (72)	60.2% (159)
At least 9 items	15.2% (40)	46.6% (123)
At least 10 times	7.2% (19)	31.1% (82)
All 11 times	2.3% (6)	15.5% (41)

## Social Tolerance Results

### Social Distance Items

Social tolerance Items	Pre-test % (n=257)	Post-test % (n=257)	% Change
<b>18. I would be upset if someone with a mental illness always sat next to me in class.</b> <ul style="list-style-type: none"> <li>• Strongly disagree/disagree</li> <li>• Unsure</li> <li>• Strongly agree/ agree</li> </ul>	71.6% (184) 20.6% (53) 7.8% (20)	90.7% (233) 8.2% (21) 1.2 % (3)	19.1 -12.4 -6.6
<b>19. I would not be close friends with someone I knew had a mental illness.</b> <ul style="list-style-type: none"> <li>• Strongly disagree/disagree</li> <li>• Unsure</li> <li>• Strongly agree/ agree</li> </ul>	69.3% (178) 25.7% (66) 5.1% (13)	86.0% (221) 10.9% (28) 3.1% (8)	16.7 -14.8 -2.0
<b>20. (R) I would visit a classmate in hospital if they had a mental illness.</b> <ul style="list-style-type: none"> <li>• Strongly agree/ agree</li> <li>• Unsure</li> <li>• Strongly disagree/disagree</li> </ul>	74.7% (192) 18.3% (47) 7.0% (18)	78.6% (202) 16.0% (41) 5.4% (14)	3.9 -2.3 -1.6
<b>21. I would try to avoid someone with a mental illness.</b> <ul style="list-style-type: none"> <li>• Strongly disagree/disagree</li> <li>• Unsure</li> <li>• Strongly agree/ agree</li> </ul>	67.3 % (173) 23.0% (59) 9.7% (25)	87.2% (224) 10.1% (26) 2.7% (7)	19.9 -12.9 -7.0
<b>22. (R) I would not mind it if someone with a mental illness lived next door to me.</b> <ul style="list-style-type: none"> <li>• Strongly agree/ agree</li> <li>• Unsure</li> <li>• Strongly disagree/disagree</li> </ul>	76.7% (197) 17.5% (45) 5.8 % (15)	81.3% (209) 10.1% (26) 8.6% (22)	4.6 -7.4 2.8
<b>24. If I knew someone had a mental illness I would not date them.</b> <ul style="list-style-type: none"> <li>• Strongly disagree/disagree</li> <li>• Unsure</li> <li>• Strongly agree/ agree</li> </ul>	21.0% (54) 54.9 % (141) 24.1 % (62)	33.5 % (86) 54.9% (141) 11.7% (30)	12.5 0.0 -12.4
<b>25. I would not want to be taught by a teacher who had been treated for a mental illness.</b> <ul style="list-style-type: none"> <li>• Strongly disagree/disagree</li> <li>• Unsure</li> <li>• Strongly agree/ agree</li> </ul>	55.6% (143) 32.3% (83) 12.1 % (31)	66.9% (172) 24.1% (62) 8.9% (23)	11.3 -8.2 -3.2
Notes: <ul style="list-style-type: none"> <li>• (R) Signifies the item was reverse coded in the scale calculation. Higher scale scores reflect higher levels of stigma</li> </ul>			

### Social Responsibility Items

Stereotyped Attributions Items	Pre-test % (n=257)	Post-test % (n=257)	% Change
<b>28. (R) I would tell a teacher if a student was being bullied because of their mental illness.</b> <ul style="list-style-type: none"> <li>• Strongly agree/ agree</li> <li>• Unsure</li> <li>• Strongly disagree/disagree</li> </ul>	81.7% (210) 13.2 % (34) 5.1% (13)	90.3% (232) 6.2% (16) 3.5 % (9)	8.6 -7.0 -1.6
<b>32. (R) I would stick up for someone who had a mental illness if they were being teased.</b> <ul style="list-style-type: none"> <li>• Strongly agree/ agree</li> <li>• Unsure</li> <li>• Strongly disagree/disagree</li> </ul>	82.1% (211) 15.2 % (39) 2.7% (7)	89.9% (231) 7.4 % (19) 2.7 % (7)	7.8 -7.8 0.0
<b>33. (R) I would tutor a classmate who got behind in their studies because of their mental illness.</b> <ul style="list-style-type: none"> <li>• Strongly agree/ agree</li> <li>• Unsure</li> <li>• Strongly disagree/disagree</li> </ul>	72.8% (187) 23.3% (60) 3.9% (10)	82.1 % (211) 14.8% (38) 3.1% (8)	9.3 -8.5 -0.8
<b>34. (R) I would volunteer my time to work in a program for people with a mental illness.</b> <ul style="list-style-type: none"> <li>• Strongly agree/ agree</li> <li>• Unsure</li> <li>• Strongly disagree/disagree</li> </ul>	62.6% (161) 29.2% (75) 8.2% (21)	79.0% (203) 17.5% (45) 3.5% (9)	16.4 -11.7 -4.7
Notes: <ul style="list-style-type: none"> <li>• (R) Signifies the item was reverse coded in the scale calculation. Higher scale scores reflect higher levels of stigma.</li> </ul>			

Survey Item	Negative change % (n)	No change % (n)		Positive change % (n)	McNemar-Bowker Significance
		Stigmatizing* % (n)	Non-stigmatizing* % (n)		
<b>Social Distance Items</b>					
18 I would be upset if someone with a mental illness always sat next to me in class	7.4% (19)	58.4% (150)		34.2% (88)	$\chi^2 = 43.3; df = 3; p < .001^*$
		6.2% (16)	52.1% (134)		
19 I would not be close friends with someone I knew had a mental illness	12.1% (31)	56.4% (145)		31.5% (81)	$\chi^2 = 32.1; df = 3; p = .001^*$
		8.6% (22)	47.9% (123)		
(R)20 I would visit a classmate in hospital if they had a mental illness	15.2% (39)	59.1% (152)		25.7% (66)	$\chi^2 = 12.9; df = 9; p = .169$
		10.1% (26)	49.0% (126)		
21 I would try to avoid someone with a mental illness	8.2% (21)	51.8% (133)		40.1% (103)	$\chi^2 = 64.7; df = 9; p < .001$
		5.8% (15)	45.9% (118)		
22 (R) I would not mind it if someone with a mental illness lived next door to me	17.5% (45)	54.1% (139)		28.4% (73)	$\chi^2 = 20.5; df = 9; p = .015$
		7.0% (18)	47.1% (121)		
24 If I knew someone had a mental illness I would not date them	7.8% (20)	55.6% (143)		36.6% (94)	$\chi^2 = 49.9; df = 8; p < .001$
		43.6% (112)	12.1% (31)		
25 I would not want to be taught by a teacher who had been treated for a mental illness	17.1% (44)	49.8% (128)		33.1% (85)	$\chi^2 = 18.1; df = 9; p = .033$
		17.9% (46)	31.9% (82)		
<b>Social Responsibility Items</b>					
28 (R) I would tell a teacher if a student was being bullied because of their mental	14.0% (36)	62.3% (160)		23.7% (61)	$\chi^2 = 19.4; df = 7; p = .007$
		6.2% (16)	56.0% (144)		
32 (R) I would stick up for someone who had a mental illness if they were being teased	11.7% (30)	64.2% (165)		24.1% (62)	$\chi^2 = 24.5; df = 8; p = .002$
		7.0% (18)	57.2% (147)		
33(R) I would tutor a classmate who got behind in their studies because of their mental illness	13.2% (34)	56.8% (146)		30.0% (77)	$\chi^2 = 26.8; df = 8; p = .001$
		11.3% (29)	45.5% (117)		
34(R) I would volunteer my time to work in a program for people with a mental illness	8.9% (23)	54.9% (141)		36.2% (93)	$\chi^2 = 49.8; df = 9; p < .001$
		13.6% (35)	41.2% (106)		
<p>Notes:</p> <ul style="list-style-type: none"> <li>• Base size is those who responded to all the pre-test and post-test items (n=257)</li> <li>• Change was defined as moving on 5-point Likert Scale from the pre-test to the post-test (negative change: toward a more stigmatizing answer; positive change: toward a less stigmatizing answer)</li> <li>• *The non-stigmatizing response means agree or strongly agree; the stigmatizing response includes unsure, disagree, and strongly disagree.</li> <li>• Statistical tests use the original five point scale, positive change does not necessary imply non stigmatizing response.</li> <li>• Degrees of freedom depend on the number of non-empty cells and may vary by question due to different response patterns.</li> <li>• * Due to a large number of empty cells, analyses were performed using a collapsed 3 point scale instead of the original five point scale.</li> </ul>					

Percent Non Stigmatizing Endorsement of Social Tolerance Items

	<b>Pre-test % (n=257)</b>	<b>Post-test % (n=257)</b>
None	1.2% (3)	0.0% (0)
At least 1	98.8% (254)	100.0% (257)
At least 2 items	97.7% (251)	99.2% (255)
At least 3 items	94.6% (243)	98.1% (252)
At least 4 items	90.3% (232)	95.3% (245)
At least 5 items	84.0% (216)	92.6% (238)
At least 6 items	76.7% (197)	88.7% (228)
At least 7 items	67.7% (174)	84.8% (218)
At least 8 items	54.9% (141)	78.2% (201)
At least 9 items	40.1% (103)	65.0% (167)
At least 10 times	22.6% (58)	40.9% (105)
All 11 times	8.2% (21)	22.6% (58)

	<b>Already positive % (n)</b>	<b>Positive Change % (n)</b>	<b>Did Not Cross 80% Threshold % (n)</b>
<b>Stereotype scale score (n=253)</b>	<b>11.5% (29)</b>	<b>34.4% (87)</b>	<b>54.2% (137)</b>
<b>Social tolerance scale score (n=249)</b>	<b>37.3% (93)</b>	<b>28.5 % (71)</b>	<b>34.1% (85)</b>
Notes:  To adjust for regression to the mean, pretest outliers (those whose pretest scale scores were over 2 standard deviations beyond the mean) were omitted from this analysis.			

Appendix A – The Dream Team

The responses to the items on each of the scales can be summed to obtain a scale score. The possible score for each scale ranges from 11 to 55 with a lower score indication less stigma.

Scale scores

Stereotype Scale Score (n=264)	
Median (interquartile range)	
Pre-test	27 (22-31)
Post-test	22 (18-27)

Tolerance Scale Score (n=257)	
Median (interquartile range)	
Pre-test	24 (19-28)
Post-test	22 (17-25)