

**UNDERSTANDING STIGMA: A POOLED ANALYSIS OF A NATIONAL PROGRAM  
AIMED AT HEALTH CARE PROVIDERS TO REDUCE STIGMA TOWARDS PATIENTS  
WITH A MENTAL ILLNESS**

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**ABSTRACT**

**Background and Objective**

The problem of mental illness-related stigma within health care is an area of increasing attention and concern. *Understanding Stigma* is an anti-stigma workshop for health care providers that uses social contact as a core teaching element, along with educational and action-oriented components. The objective of our study was to determine the impact of this program on health care providers' attitudes and behavioural intentions towards patients with a mental illness, and also to ascertain whether various participant and program characteristics affected program outcomes. Our paper reports the results of a pooled analysis from multiple replications of this program in different Canadian jurisdictions between 2013 and 2015.

**Material and Methods**

We undertook a pooled analysis of six separate replications of the *Understanding Stigma* program. All program replications were evaluated using a non-randomized quasi experimental pre- post- follow-up design. The Opening Minds Scale for Health Providers (OMS-HC) was used as the main assessment tool. Study-level and individual-level meta-analysis methods were used to synthesize the data. First, the "metan" command was used to show outcomes by study, using a forest plot. Then, a pooled dataset was produced and analyzed using a random intercept linear mixed model approach with each program being modelled as a random effect. Program and participant characteristics were examined as independent variables using this approach. These were each entered individually. Individual tests included pre- to post-change by program version (original or condensed), by occupation (nurses versus other health care providers), by gender, age, and previous diagnosis of a mental illness.

**Results**

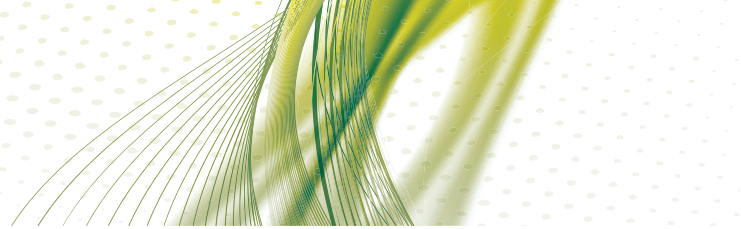
Program effect sizes ranged from .19 to .51 (Cohen's d), with an overall combined effect size of .30. The results of the mixed model analysis showed the improvement from pre- to post-intervention was statistically significant for the total scale and subscales. Analysis of program and participant factors found that version type, health care provider type, gender, and previous diagnosis of a mental illness were all non-significant

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factors on program outcomes. A significant inverse association was revealed between increasing age and score change. Results also showed a significant positive linear relationship between baseline score and improvement from pre- to post-intervention. Maintenance of scores at follow-up was observed for participants who attended a booster session.

### **Conclusion**

The results are promising for the effectiveness of this brief intervention model for reducing stigmatizing attitudes and improving behavioural intentions among nurses and other health care providers.

Stigmatization is often conceptualized as a complex social process of labelling, separation and devaluation, and discrimination which involves an interconnection of cognitive, emotional and behavioural components.<sup>1-3</sup> As an outcome of a process, a stigmatized person is considered different from the ‘normal’ people with whom he or she regularly interacts, is viewed negatively, and becomes reduced from “a whole and usual person to a tainted and discounted one.”<sup>1</sup> Stigmatization also operates on multiple simultaneous levels – intrapersonal (e.g., self-stigma), interpersonal (e.g., relations with others) and structural (e.g., discriminatory and/or exclusionary policies, laws and systems).<sup>2</sup>

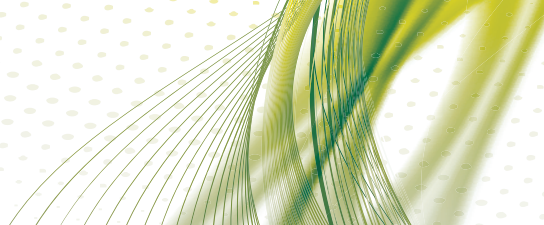
The problem of mental illness-related stigma within health care is an area of increasing attention and concern.<sup>4-6</sup> It can be a barrier to effective treatment and recovery, as well as poorer quality physical care for persons with mental illnesses.<sup>4-13</sup> Stigma within the health care sector has also been shown to affect the help-seeking behaviours of health care providers themselves, and negatively influences their work environment.<sup>6,12-15</sup> Unfortunately, nurses are no less implicated than other health professionals.<sup>12,16,17</sup>

A recent study measuring attitudes and behavioural intentions towards persons with a mental illness across various health care groups in Canada found that nurses, along with physicians, displayed the highest levels of stigma of all groups measured.<sup>18</sup> A 2009 review of mental illness-related stigma within the nursing profession found a number of problematic attitudes and beliefs towards patients with mental illnesses.<sup>12</sup> The study identified negative attitudes of hostility, blame, fear, devaluation mental health care needs, and pessimism towards client prognoses and outcomes to be common among nurses. The study also found that many nurses hold beliefs about people with mental

illnesses that commonly exist in the general population; namely, that those with mental illnesses tend to be dangerous, unpredictable, violent, and strange, and that mental illnesses are associated with weaknesses of character or will, laziness, or lack of self-control or discipline. While the authors found that nurses working in psychiatric setting generally showed more positive attitudes overall than general medical nurses, they also found that nurses working in psychiatric settings were found to hold more pessimistic attitudes towards prognoses and recovery.

The considerable deleterious impacts of stigma have promoted increased calls to action for health care organizations to take leadership roles in tackling the problem.<sup>4-6,8,16</sup> Since 2009, Opening Minds (OM), the anti-stigma initiative of the Mental Health Commission of Canada, has conducted a large series of evaluations of anti-stigma programs targeting various health care provider audiences.<sup>19,20</sup> OM partnered with organizations conducting anti-stigma interventions for the purpose of evaluating program effectiveness. Qualitative research and synthesis of quantitative data arising from these evaluations helped to identify key ingredients and best practices for programming success.<sup>21,22</sup>

This research has revealed a number of lessons for combating mental illness-related stigmatization in health care, including key ingredients for effective anti-stigma programming.<sup>21,22</sup> These include: (a) educational strategies to raise awareness and correct false beliefs; (b) teaching skills that help health care providers know ‘what to say’ and ‘what to do’ to help patients with mental illnesses; (c) ‘setting the tone’ through modelling of person-first behaviour and key message reinforcement; (d) demonstrating and emphasizing recovery – including the ways in which



health care providers play a key role in that process; and (d) making ample use of social contact, which includes hearing personal testimonies from trained speakers with lived experience of mental illness

Social contact has been shown to be a particularly potent ingredient for reducing stigma, as it represents a qualitatively different kind of contact from typical provider-patient interactions.<sup>23–26</sup> In social contact interventions, people with lived experience of a mental illness are seen not as patients but as educators.<sup>23–26</sup> Social contact has been identified as a key strategy for interprofessional educational approaches to stigma reduction in health care and works through such pathways as disconfirming stereotypes, diminishing anxiety, heightening empathy, making personal connections, and improving understanding of recovery.<sup>23–26</sup> It has also been discussed as a valuable tool for awareness-raising/transformational learning (e.g., through relaying experiences about language use, the impact of therapeutic pessimism, and experiences with diagnostic or treatment overshadowing, etc.), and also to help health care providers see the person behind the illness.<sup>17,22,27</sup>

### THE UNDERSTANDING STIGMA PROGRAM

*Understanding Stigma* is an anti-stigma workshop for health care providers that uses social contact (both video and in-person stories and perspectives) as a core teaching element, along with educational and action-oriented components. The original program, called *Mental Illness and Addictions: Understanding the Impact of Stigma*, was designed by the Mental Health and Addiction Network Education Work Group of the Ontario Central LHIN (Local Integrated Health Network) in 2007 in response to an identified need for greater anti-stigma education and training for professionals providing services to people with mental health issues. In 2010, it was adapted to specifically target health care providers and piloted at 8 sites within the Ontario Central LHIN, including hospitals and community care clinics. Program participants included both medical and allied health professionals. The pilot program was evaluated using a pre-, post- and three-month follow-up measure for workshop participants, and pre- and post-tests for

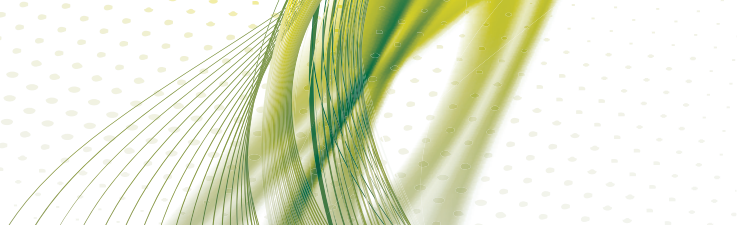
a small control group. The evaluation survey used questions from a pilot questionnaire developed by OM as well as instrument developed and used by the Ontario Central LHIN. Results were promising, showing improved attitudes and knowledge from pre- to post-intervention, although some slippage was noted at the time of follow-up.<sup>28</sup>

The report recommended further replications of the program and ongoing evaluations with validated measures and also recommended the implementation of ‘booster’ or refresher sessions to reinforce key messages and sustain positive changes over time.<sup>28</sup> The program was further refined in 2012 and renamed *Understanding Stigma*.<sup>29</sup> In addition to the existing 90-minute version of the workshop, a 60-minute condensed version was developed which allots a shorter amount of time to each segment, and booster sessions were designed.

The Ontario Central LHIN has made *Understanding Stigma* freely available for sharing and implementation. The main components of the program are as follows:

- Famous People PowerPoint: a looping slideshow featuring famous people who have a mental illness plays continuously as participants enter the room.
- Interactive Exercises: activities that encourage participants to think about the impact of stigma in the health care environment.
- Stigma Definition: stigma is defined followed by a short discussion about prejudice and discrimination.
- Myths vs. Facts Questionnaire: participants complete a questionnaire on their own then review answers on the screen as a large group. The exercise is designed to clarify incorrect beliefs health care providers may have.
- Anti-Stigma DVD: the video features perspectives from people with lived experience of a mental illness, family members of a person with a mental illness, and health care providers who work with patients with mental illnesses.
- Group discussion: participants break into small groups to discuss a set of questions about stigma as it pertains to their own work environments, then report back to the group and discussion follows.





- **First Voice Presentation:** a person with lived experience of a mental illness shares their story of illness and recovery, followed by discussion. Speakers highlight examples of stigma in health care interactions as well as positive experiences that led to their recovery.
- **Anti-Stigma Commitment:** participants make a personal commitment to change their practice in a specific way that will contribute to eliminating stigma in their practice or workplace.
- **Wrap Up and Take-Home Resources:** key lessons are revisited and reinforced. Participants receive a resource manual with information about mental illness, stigma and community resources.

Since 2012, *Understanding Stigma* has been implemented and evaluated by OM in a number of different Canadian health care settings with various health care provider audiences. While the program includes a combination of best-practice strategies,<sup>21,22</sup> there are also differences in its various evaluated implementations, providing a rich source of data for deciding how to best implement this kind of programming. Identifying these characteristics of successful implementation is one of the goals of this project, as was the determination of the program's effectiveness at reducing stigma. The specific objective of this study was to determine the impact of the *Understanding Stigma* program on health care providers' attitudes and behavioural intentions towards patients with a mental illness, and also to ascertain whether various participant and program characteristics affected program outcomes.

## METHODS

Our paper reports the results of a pooled analysis from multiple replications of this program in different Canadian jurisdictions between 2013 and 2015.

## DATA SOURCES

We undertook a pooled analysis of six separate replications of the *Understanding Stigma* program in different Canadian jurisdictions between 2013 and 2015. Two implementations were in British Columbia, three were in Ontario, and one was in Nova Scotia. Details about the six different program implementations is provided in Table 1. As highlighted, 4 of the 6 replications relied primarily on the original version and two used the condensed version. Three of the replications offered a post-workshop booster session, delivered a month or two after the original intervention. Ethics approval for these evaluation studies was granted by the University of Calgary Conjoint Human Research Ethics Board (ID: 22724).

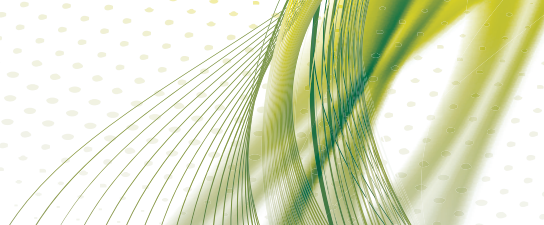
All program replications were evaluated using a non-randomized quasi experimental pre-post design. Five of the six studies (all except Study 1) included a follow-up measure, collected at approximately three months' post-intervention.

## Assessment of Stigma

The Opening Minds Scale for Health Providers (OMS-HC) was used as the main assessment tool. The OMS-HC is a validated and widely used scale designed to measure attitudes and behavioural intentions of health care providers towards persons with

**TABLE 1** Setting, Target Audience, and Program Details of *Understanding Stigma* Implementations

Study Number	Province	Health Care Setting	Audience	Program Version	Booster Session?
1	BC	Hospital	ED staff	Original	No
2	Nova Scotia	Hospital	Clinical and non-clinical staff	Original	No
3	BC	Hospital	Clinical and non-clinical staff	Condensed	No
4	Ontario	Hospital	ED staff	Condensed	Yes
5	Ontario	Hospital	ED and mental health staff	Original	Yes
6	Ontario	Community Health Centre	Clinical and non-clinical staff	Original	Yes



mental illnesses.<sup>18,30</sup> While initial psychometric testing of the OMS-HC suggested a 12-item scale (out of an original 20 items) with two factors – negative attitudes and willingness to disclose/seek help for a mental illness<sup>30</sup> – an updated study conducted in 2014 with a larger and more diverse sample found a 15-item version with three factors – negative attitudes, willingness to disclose/seek help for a mental illness, and preference for social distance – was likely superior.<sup>18</sup>

Across the six replications, four employed the 15-item scale and two used the 12-item scale. The two evaluations using the 12-item scale were rescaled to the 15-item. The dimension of ‘preference for social distance’ was not captured for these two evaluations. Cronbach’s alpha was used to assess reliability of the scale with the pooled sample. To create a total scale score for the OMS-HC, items were summed for each participant. Scores can range from 15 to 75, with lower scores indicating less stigma.

Demographic information including age, gender, occupation, and previous experience having a mental illness was also captured. Each evaluation’s post-test survey also asked a number of questions pertaining to program satisfaction and usefulness. These data were not used in the current analysis, but can be found in individual evaluation reports.<sup>31,32</sup>

Due to the nature of the intervention, participants could not be assigned a unique study identification number. Therefore, surveys were linked across time points through a process whereby participants provided their mother’s initials and the last two digits of their year of birth on their survey forms. The primary outcome measure was change in OMS-HC score from pre- to post-intervention on the pooled sample. Analyses were completed using Stata, V12.<sup>33</sup> Study-level and individual-level meta-analysis methods were used to synthesize the data.

First, the “metan” command was used to show outcomes by study, using a forest plot. The Q test was used to assess the homogeneity of study results in this meta-analysis, but a random effect meta-analysis was chosen a priori since this approximates the fixed effect model when heterogeneity is low. Then, in order to explore determinants of program outcome, a pooled dataset was produced. For analysis of the pooled

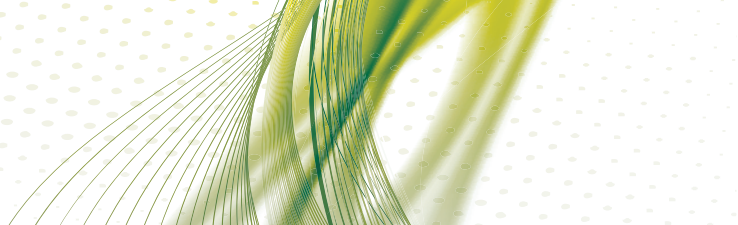
dataset, a random intercept linear mixed model approach was used, with program being modelled as a random effect. This approach supported the modeling of individual- as well as program-level characteristics whereas only program-level effects could have been modelled using meta-regression as an extension of the meta-analysis. The mixed models predicted changes in OMS-HC scores before and after the intervention, with the random intercept being used to account for random variability across the different studies. Program and participant characteristics were examined as independent variables using this approach. These were each entered individually. Individual tests included pre- to post-change by program version (original or condensed), by occupation (nurses versus other health care providers), by gender, age, and previous diagnosis of a mental illness.

## RESULTS

The dataset for the pooled analysis included 1,429 participants across the six studies and a total of 1,090 of completed and matched pre- and post-OMS-HC surveys. Cronbach’s alphas for the OMS-HC were .81 at pre-test, .82 at post-test and .84 at follow-up, indicating an acceptable level of internal consistency at all three time points. An examination of a histogram and QQ plot showed the distribution of OMS-HC scores to be normal but with one outlier case. This case was removed, leaving a total of 1,089 matched surveys for analysis. Table 2 shows matched completed pre- and post-surveys for each study site, and program and participant characteristics for the pooled sample.

Figure 1 shows the forest plot of the individual program effects (Heterogeneity chi-squared = 3.08, d.f. = 5,  $p = 0.69$ ,  $\text{Tau}^2 = 0.00$ ). Despite this homogeneity, a random effects model was used in the meta-analysis. Program effect sizes ranged from .19 to .51 (Cohen’s  $d$ ), with an overall combined effect size of .30. The 95% confidence interval for the pooled estimate does not cross the null value of zero, indicating that the pooled effect was significant at the  $p < 0.05$  level.

For the pooled sample, OMS-HC average total score at pre-test was 32.96 (SD = 7.36). At post-test, the score was 30.86 (SD = 6.96), representing an overall improvement of 6.4%. The results of the mixed



**TABLE 2** Sample Characteristics

	<i>n</i> *	%
Study Number		
1**	183	16.8
2	478	43.9
3	93	8.5
4	23	2.1
5	288	26.5
6	24	2.2
Total	1089	100
Program version		
Original	938	86.1
Condensed	151	13.9
Total	1089	
Booster session		
Yes	327	30.0
No	762	70.0
Total	1089	100
Occupation		
Nurse	528	49.6
Physician	29	2.7
Allied health	143	13.4
Other (non-clinical)	365	34.3
Total	1065	100

(Continues)

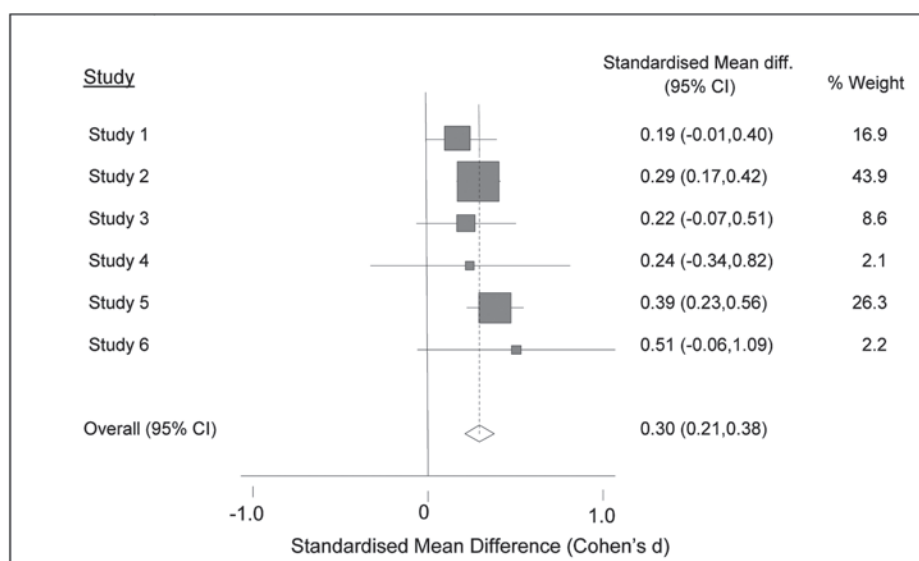
**TABLE 2** (Continued)

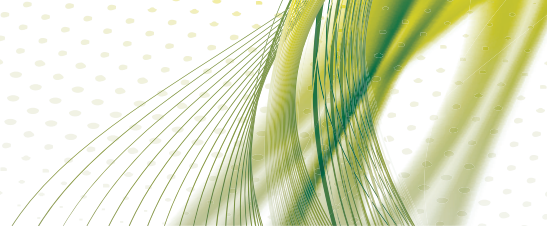
	<i>n</i> *	%
Gender		
Male	146	13.5
Female	931	86.4
Other	1	0.1
Total	1078	100
Age		
Under 30	212	20.0
30–39 years	282	26.6
40–49 years	295	27.9
50–59 years	224	21.2
60–69 years	44	4.2
70 +	1	0.1
Total	1058	100
Ever been treated for a mental illness?		
Yes	266	25.1
No	792	74.9
Total	1058	100

\*totals range from 1058-1089 due to missing values.

\*\*No follow up measure

**FIG. 1** Forest plot of program effects by study site: understanding stigma program





model analysis showed the improvement from pre- to post-intervention was statistically significant for the total scale and subscales (Table 3).

The analysis of program and participant factors (Table 4) found that version type, health care provider type, gender, and previous diagnosis of a mental illness were all non-significant factors on program outcomes. A significant inverse association was revealed between increasing age and score change. Results also showed a significant positive linear relationship between baseline score and improvement from pre- to post-intervention. A repeat of the mixed model analyses with baseline score included as a control variable did not change the significance of program or participant characteristics on program outcomes.

Follow-up surveys were completed by 277 participants across the five studies that collected follow-up data, 64 of whom had participated in booster or refresher session and 213 that had not. Results of score changes from post-test to follow-up for all respondents as well as according to whether or not they participated in a booster session are reported in Table 5. Given the high rate of attrition from post-test to follow-up, these estimates must be interpreted with caution.

### DISCUSSION

Overall, the study results are encouraging for the effectiveness of the *Understanding Stigma* program at improving attitudes and behavioural intentions among health care providers towards patients with mental illnesses in real world settings, although in principle the before-after study design precludes interpreting these results as confirmation that the intervention actually caused the observed changes. Significant improvements in scores were noted on the total scale as well as all three subscales; negative attitudes, willingness to disclose/seek help for a mental illness, and preference for social distance. While the effect sizes for each of the sites as well as the overall average is considered a small effect, this is not unexpected as the intervention itself is quite brief. These effect sizes are comparable to those observed in other brief interventions evaluated by OM using similar levels of social contact, and somewhat better

**TABLE 3** Random Intercept Mixed Model Regression: OMS-HC Pre- to Post-Change, Total Scale and Subscales

	Coeff.	Sd. Error	z	p
Total scale (T1-T2)	2.031	.335	6.07	<.001
Negative attitudes	.865	.098	8.78	<.001
Willingness to disclose/seek help	.588	.113	5.22	<.001
Social distance*	.409	.109	3.75	<.001

*n* = 1089; \**n* = 753 as two studies used an earlier version of the scale that did not include the social distance factor.

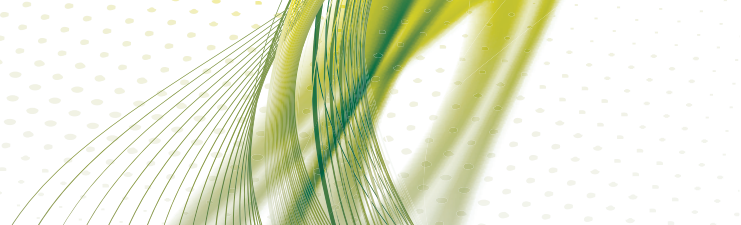
**TABLE 4** Random Intercept Mixed Model Regression: Effect of Program and Participant Characteristics on OMS-HC Change Pre- to Post-Intervention\*

	Coeff.	Sd. Error	z	p
Total Scale (T1-T2 change)	2.031	.335	6.07	<.001 <sup>^</sup>
Original vs. condensed				
Original version	0.497	.563	0.88	.378
Condensed version (constant)	1.661			
Health care provider type				
Nurse	-0.315	.312	-1.01	.314
Other health care provider (constant)	2.203			
Age**				
Years from 20	-0.031	.013	-2.31	.021 <sup>^</sup>
20 years old (constant)	2.662			
Gender				
Male	0.251	.420	0.60	.549
Female (constant)	1.991			
Previous diagnosis of a mental illness				
Yes	-0.316	.353	-0.89	.371
No (constant)	2.139			
Baseline score				
Score from 15	0.275	.019	14.77	<.001 <sup>^</sup>
Baseline score = 15 (constant)	-2.908			

*n* = 1089 \*Each characteristic evaluated individually. Positive coefficient values represent positive (improved) outcomes.

\*\*An analysis using an age squared term in the model was non-significant. <sup>^</sup>Significant at <.05.





**TABLE 5** OMS-HC Score Change from Post-Test to Follow-Up, by Booster Session and Overall

	<i>n</i>	Mean change T2-T3 (SD)	95% CI	<i>p</i>
Total Scale (T2-T3)	277	-.549 (.322)	-1.184 – 0.086	.09
Booster session				
No	213	-.796 (5.13)	-1.489 – -1.103	.02
Yes	64	.271 (6.07)	-1.245 – 1.785	.73

than those observed in brief interventions incorporating little to no social contact.<sup>34–37</sup> Programs using a more intensive contact-based approach (e.g. social contact sustained over several months of regularly scheduled interaction) see somewhat stronger results than those observed for *Understanding Stigma*,<sup>16</sup> but these kinds of interventions may not always practical in time-constrained health care environments and tend to be easier to implement in student populations.

Particularly encouraging about the results of the *Understanding Stigma* program is that findings represent multiple replications of the program in different settings with various audiences and program facilitators, as opposed to a single program implementation. It is also encouraging that program effects do not appear to be compromised when the intervention is delivered in a more condensed form. Indeed, being able to offer the program in a shorter amount of time may be important for busy health care environments faced with ongoing time and other resource challenges for training and in-service delivery. Another encouraging finding is that program outcomes did not significantly differ by occupational group, suggesting that the intervention may work equally well for nurses as for allied health professionals, physicians, and other clinical or non-clinical staff.

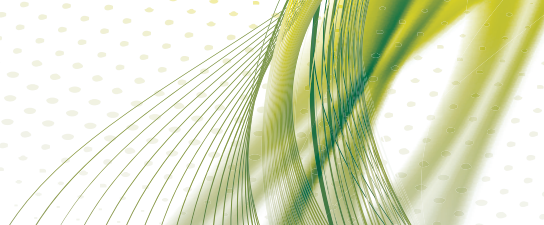
The finding that higher baseline scores (i.e. more stigma at baseline) was associated with greater pre/post-improvement is perhaps somewhat unsurprising. It is also encouraging, however. Stigma is often described as an ‘unidentified learning need’ in that many health care providers often don’t believe or aren’t aware of their own stigmatizing beliefs or behaviours.<sup>27</sup> If we speculate that those with higher levels of baseline stigma may also be less aware of their own stigmatizing beliefs and practices, their greater level of improvement may possibly indicate

some level of transformative learning or shifting of perspective and understanding.

It is uncertain why program impacts seem to decrease with increasing participant age. Perhaps some health care providers are more resistant to change as they become more advanced in their careers and years of practice. It has been argued that ‘starting with where the learner is at’ is an important consideration for ensuring educational interventions are targeted appropriately for maximum learning impact.<sup>27</sup> The correlation between program outcomes and age may mean targeting health professionals when they are earlier in their careers could be an important consideration for maximizing program efficacy.<sup>16</sup> This will be an important area for future research.

It will also be important for future research to continue to evaluate the longer-term effects of this program on attitude and behavioural change, particularly as they relate to the inclusion of booster or refresher sessions in the delivery model. Although the results are promising and point to the effectiveness of a brief intervention model for reducing stigmatizing attitudes and improving behavioural intentions among nurses and other health care providers, the study has a number of limitations that should be noted. First, although the quasi-experimental design is superior than many other evaluations of anti-stigma programming found in the workplace,<sup>38</sup> evaluation of this program using an experimental design (e.g., RCT) would improve the strength of the conclusions made in this study. Also, it is important to note the small sample sizes in some locations, although the “metan” command does account for this (through inverse variance weighting), and the high rate of attrition from post-test to follow-up. While program elements are standardized through the program design, the current study was unable to investigate differences in program





delivery across the different implementations, such as facilitator style and the content and delivery of first voice personal testimonies. Strengths of the current study include a large sample size from pooling data, being able to examine effectiveness of a practical easy-to-implement intervention tested at numerous sites with different health care providers, and ascertaining the how different program and participant characteristics impact outcomes.

Realizing culture change in health care organizations and changing to a culture that is supportive of mental health and those with mental illnesses requires a sustained, coordinated and integrated commitment. Although the *Understanding Stigma* program was not designed specifically or only for nurses, nor are nurses the only target for anti-stigma interventions, nurses are nevertheless well positioned to play a meaningful leadership role in solving the problem of mental illness stigmatization. Implementing strategies and evidence-informed interventions for stigma reduction can inspire practice both within and beyond the profession in ways that can improve provider-patient interactions, quality of care, and ultimately, policy and system change.

### CONCLUSIONS

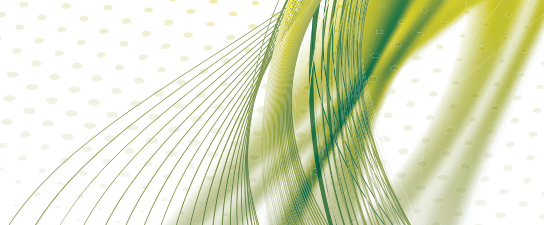
The results are promising for the effectiveness of this brief intervention model at reducing stigmatizing attitudes and improving behavioural intentions among nurses and other health care providers.

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