

Validating the Co-Worker Mental Health Awareness Training Program (CHAT)

by

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Abstract

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Abstract: Mental health issues are extremely common in Canadian organizations, with 1 in 5 Canadians experiencing a mental illness every year. There are a host of negative outcomes for both organizations and individuals associated with mental health problems. Mental illnesses are still highly stigmatized. One strategy that previous research has shown to be effective in reducing stigma around mental illness in organizations is mental health awareness training (MHAT) for leaders. The aim of the current study is to test the validity of the sister program of the MHAT, the Co-Worker Mental Health Awareness Training Program (CHAT) for employees. The present study uses a wait-list control design in two Maritime organizations ($N = 33$) to test the effectiveness of the CHAT on various outcomes, such as self-efficacy in recognizing and addressing mental health problems in the workplace, psychological health and safety, attitudes and willingness to use resources. Results showed that compared to the employees in the control group, those employees who were trained with the CHAT displayed higher self-efficacy in recognizing and addressing mental health problems in the workplace, and higher mental health promotion intentions. These results provide partial support for the effectiveness of the CHAT, and have practical and methodological implications.

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Validating the Co-Worker Mental Health Awareness Training

The Mental Health Commission of Canada suggests that 1 in 5 Canadians will experience mental illness this year alone (Mental Health Commission of Canada [MHCC], 2012). Nova Scotia residents, in particular, experience more mood disorders per capita than the Canadian average (Statistics Canada, 2016) and report the highest average of mood disorders per capita of all the Atlantic Provinces. According to percentages of Nova Scotia's gross domestic product, Nova Scotia spends more on health care than any other province in Canada (McLeod, 2013). Due to mental health promotion work by the Mental Health Commission of Canada, there is growing recognition of the need for organizations to respond effectively to this social problem (Kelloway, 2017). I addressed this need by testing the validity of a workplace program focused on mental health literacy using a wait-list control group design.

Specifically, I trained employees in Co-worker Mental Health Awareness (CHAT), and evaluated the effectiveness of the training over time. This training was intended to address the stigmatizing attitudes around mental illness that affect to the majority of Canadians who experience mental illness. Due to high levels of stigma (i.e., negative attitudes and subsequent negative actions towards individuals with mental illness or mental health problems, perpetuated by lack of knowledge, common misconceptions and stereotypes; Canadian Mental Health Association-Ontario [CMHA-O], 2017), nearly 70% of individuals suffer in silence and do not seek or receive the necessary help to recover (Henderson, Evans-Lacko & Thornicroft, 2013). This training is based on the success of its sister program, the Mental Health Awareness Training

(MHAT) for leaders which resulted in a host of organizational benefits in large Canadian companies (Dimoff, Kelloway & Burnstein, 2016). Both the CHAT and the MHAT programs were developed by Dimoff et al. (2016), and focus on reducing stigmatizing attitudes, enhancing employee knowledge around mental health and mental illness, and recognizing and acting upon warning signs of these mental health problems. Following the lead of the original program evaluation, the CHAT was implemented using a field experiment design that will allow for a robust assessment of the intervention. This research contributes to the scarce body of literature on mental health awareness training in organizations.

Mental Health in Canada: Definitions and Consequences

The Standing Senate Committee on Social Affairs, Science and Technologies [SCSAST] (2004) defines *mental illness* as an alteration in cognitions, emotions, mood or behaviour associated with clinically significant distress and impaired daily functioning. These illnesses come in several forms such as mood disorders (i.e., depression, schizophrenia, anxiety disorders, personality disorders, eating disorders), and addictions (i.e., substance dependence, gambling addictions). By contrast, *mental health* refers to the capacity of each of us to feel, think, and act in ways that increase our ability to appreciate life and cope with the difficulties we encounter. Mental health encompasses emotional and spiritual well-being that respects the significance of culture, equity, social justice, interconnections and personal dignity (SCSAST, 2004). Although these are two distinct constructs, Canadians can improve overall mental health by reducing mental illness (Public Health Agency of Canada [PHAC], 2012).

Consequences to the Individuals and Canadian Economy

Given the high prevalence of mental illness in Canada, it is important to understand what kind of complications these illnesses have for individuals, society, and the economy. These complications and consequences have been heavily documented; research in this area has become a top priority for the Canadian health care system and occupational health researchers (MHCC, 2011). For individuals, mental health problems can cause suffering, functional impairment and productivity loss (Berndt, Bailit, Kelley, Verner & Finkelstein, 2000; Kessler et al., 1999; Dewa, Goering & Lin, 2000). Serious forms of mental illness can also cause barriers to income and loans, housing options, and employment opportunities (MHCC, *The Aspiring Workforce*, 2013). For the Canadian economy, effects of mental illness are substantial. In 2008, mental health concerns cost our economy 51 billion dollars annually—half of which can be attributed to loss of health-related quality of life (Lim, Jacobs, Ohinmaa, Schopflocher & Dewa, 2008). These costs to the individual and the economy come with corresponding costs to organizations and employers in Canada (Berndt et al., 2000; Kessler et al., 1999; Dewa, Goering & Lin, 2000).

Mental Illness in Organizations

Logically, as there is a high prevalence of mental illness in the Canadian population, there is also a high prevalence of mental health problems, such as anxiety and depression, in the workforce (MHCC, 2011). In fact, 13% of Canadian employees report a worrying level of depression, and as high as 18% report being absent from work due to symptoms of depression (Dunnagan, Peterson & Haynes, 2001; Kessler, Greenberg,

Mickleson, Meneades & Wang, 2001; Grywacz & Ettner, 2000). Employees with mental health problems have shown higher levels of absenteeism, presenteeism and turnover; these issues are estimated to cost Canadian businesses 198 billion dollars in productivity loss over the next 30 years (Smetanin, et al., 2011). Strikingly, the leading cause of short and long term disability in Canada is mental illness—accounting for nearly 30-50% of short and long term disability claims in Canada (MHCC, The National Standard, 2013).

Some of the increases in mental health problems can be attributed to workplaces themselves (MHCC, Aspiring Workforce, 2013). Workplace environments may be stressful, and there are a host of psychosocial risk factors that can contribute to mental health problems, including psychological demands, lack of psychological support, and workload (MHCC, The National Standard, 2013). Stigma is also a problem in organizations, as employees in the organization may develop discriminatory attitudes towards someone who discloses suffering from a mental health problem, and unwell employees often fear that they may lose their job, not be promoted, or become isolated and shamed by co-workers (CMHA-O, 2017; Holden, 2015). Stigma is associated with several negative outcomes, such as spreading fear and misinformation, labelling individuals, perpetuating stereotypes, limiting opportunity for treatment, employment, housing and education, and can cause loss of family and friends (CMHA-NL).

One way that organizations can attempt to limit workplace risk factors and reduce stigma is by creating Psychologically Healthy Workplace environments (MHCC, The National Standard, 2013). Psychologically healthy and safe workplaces are characterized by the promotion of employees' psychological well-being and steps towards the

prevention of harm to employees' psychological health in negligent, reckless, or intentional ways (MHCC, The National Standard, 2013). The majority (70%) of Canadian employees have concerns about the psychological health and safety of their workplace, and 14% believe that their workplace is not healthy or safe at all (MHCC, 2011). Taking into account that the workplace is where Canadian adults spend the majority of their time, and the high costs associated with psychological disability in organizations, prevention through recognizing and addressing mental health problems early on, should be of particular interest to organizations (MHCC, 2011).

There are several barriers to receiving mental health care and services when needed; these include, but are certainly not limited to, stigma, a shortage of mental health professionals and services, and a lack of publicly funded psychological services (CMHA, 2012; Access to Services). Some employers have responded to this issue by implementing resources within their organization that can be used by employees to help them cope with these stressors and demands (e.g., Employee Family Assistance Programs [EFAP], medical and paramedical benefits provided through HR). However, the use of these resources in organizations tends to be very low (Linnan et al., 2008; Reynolds & Lehman, 2003). It is important that employees are aware of these resources and begin to utilize them more often; otherwise, their initial symptoms may perpetuate and grow into a more serious mental illness which may cause the employee to have to leave the workplace (Dimoff, 2016; Dimoff & Kelloway, 2016). Willingness to Use Resources at work is particularly important to the speed by which mental health problems are recognized and addressed in the workplace (Dimoff, 2016). Research findings show that

when employees take advantage of resources provided by the organization, they experience lower levels of strain, burnout and severe mental illnesses (Hobfall, 2011; Sonnentag, 2001). Managers and coworkers may also aid the resource-use process by a) providing support directly, or b) improving awareness of available resources. Dimoff (2016) found that manager training can facilitate this process; leaders who received training were better able to recognize potential warning signs exhibited by subordinates, and in turn, were better able to increase their subordinates' willingness to use resources, such as EFAP.

In terms of stigma, these attitudes often come down to a lack of knowledge of mental illnesses, the behavioural warning signs that are associated with them, and the available treatments and supports. Thus, stigma can be reduced by educating employees and coworkers of these important subjects, and a subsequent systematic change in attitudes and behaviours towards acceptance, respect and equity (CMHA-NL). The Mental Health Commission of Canada suggests that an emphasis on mental health understanding in the workplace may ease the burden of those suffering in silence. In particular, workplace-based training, such as the MHAT and the CHAT, has proven to be an effective way of reducing stigma (Dimoff, et al., 2016). The CHAT will aid in coworker's understanding of mental illnesses, including which behaviours may be exhibited as a result of the illness, and what they can and should do when they witness these behaviours. Therefore, the CHAT is designed to a) increase coworkers' recognition of potential warning signs exhibited by colleagues, and b) provide employees with the confidence and skills to discuss mental health and available resources at work.

Training Co-workers vs. Leaders

The MHAT, the program the CHAT is based on, is intended only for leaders. The CHAT extends this training to co-workers, or in other words, any level of employee at the organization. There were several factors leading to the decision to extend this training to co-workers. Firstly, although the MHAT focused on training leaders, the ultimate goal of the training was to assist individuals in dealing with mental health problem (Dimoff, 2016). The CHAT program and this study, allow us to examine whether training other levels of employees has the same effect as training leaders. This also allows for organizations to educate all of their employees on how to recognize and respond to mental health problems, rather than putting the responsibility to watch for warning signs solely on leaders. Logically, the earlier an individual recognizes that they are experiencing mental health problems, the quicker they are able to be treated and recover; this can reduce the cost of disability for the organization. One way to facilitate early recognition is to increase understanding of “warning signs,” and encourage social support and open communication between employees. The more people who are aware and can easily recognize the signs of mental ill health, the more likely it is that the individual who is suffering will be recommended to the appropriate services for an efficient recovery.

Secondly, it is also likely that training an entire company in mental health literacy may foster an environment that is more open to discussing mental health and offering social support. As the MHAT has shown, it is important to get leaders involved in this recognition and facilitation of social support, however, some research has shown that it is equally, if not more important to also facilitate co-worker social support

(Thoits, 1995). It may be the case that employees are more willing to discuss personal problems with their peers, rather than their leaders or “bosses.” Past research has suggested that social support in organizations can benefit employee mental wellbeing (Heaney, Price & Rafferty, 1995) and can decrease recovery time for people with serious mental illnesses (Hendryx, Green, Perrin, 2010). Co-worker social support specially, has been found to decrease exhaustion levels in human services occupations, and reduce turnover intentions of employees in these fields (Ducharme, Knudsen & Roman, 2007). Not only does the presence of social support among co-workers benefit employee wellbeing, it also may prevent the development of or perpetuation of mental illness; a meta-analysis of workplace psychosocial risk factors on mental health problems revealed that low social support consistently predicted common mental disorders (Stansfeld & Candy, 2006). The CHAT encourages open communication around mental illness, and coworker support, in order to increase the speed of recognition and facilitate recovery.

The Current Study

The CHAT provides a new training-based approach to reducing the stigma surrounding mental illness within a workplace context. Previous research has demonstrated that manager-focused training is capable of significantly reducing stigmatizing beliefs, improving self-efficacy with regard to the promotion of mental health at work, and increasing knowledge and awareness of resources (Dimoff, 2016; Dimoff et al., 2016; Kitchener & Jorm, 2002, 2004, 2008). Therefore, the aim of the current research was to test the validity of the Co-worker Mental Health Awareness Training (CHAT) in bringing about similar desired outcomes when delivered to

employees at all levels in organizations. Like the MHAT, the CHAT focuses on improving awareness of mental illness, reducing stigmatizing attitudes around mental health, and helping employees recognize and act upon behavioural warning signs. The CHAT builds on the MHAT research by extending this training to employees. Following the lead of the original program evaluation in order to maintain the fidelity of the research, the CHAT is implemented using a quasi-experimental design that will allow for a robust assessment of the intervention, measuring its effects on multiple dependent variables. I hypothesized that compared to a control group, employees who participate in the CHAT training will report:

Hypothesis 1: Increased knowledge of mental health issues

Hypothesis 2: Decreased stigmatizing attitudes around mental illness

Hypothesis 3a: Increased willingness to use organizational resources (HR, EFAP, co-worker/supervisor support) when experiencing a struggle or setback in life

Hypothesis 3b: Increased willing to use organizational resources HR, EFAP, co-worker/supervisor support), when experiencing a health problem.

Hypothesis 4: Increased self efficacy in recognizing and responding to mental health issues in the workplace

Hypothesis 5: Increased willingness to promote mental health in the workplace

Hypothesis 6: Increased psychological health

Hypothesis 7: Increased perception of Psychological Safety in the organization

Methodology

Participants

Participants for this study consisted of employees from two organizations. Organization A is a Canadian Real Estate company and had 53 employees from their head office in Halifax complete the training ($n=23$ in training group and $n=30$ in the control group). In Organization A, 41.7% of employees self identified as managers, 73% of the sample was female, and the average age was 39.34 (ranging from 20-62). The majority (58%) of the employees trained from Organization A had worked at the organization from 0-4 years, 27% of the employees had been employed there for 10+ years, and 15% had been employed for 5-9 years. Organization B, is a New Brunswick government organization in the finance industry and had 24 managers complete the training. There was no control group for Organization B because of the small number of employees. In Organization B, 65% of the employees were female and the average age was 43.63 (ranging from 34-61). 40% of the sample had been in the company for 10+ years, 30% had been in the company for 5-9 years, and 30% had been there for 0-4 years. Although there were differences in the demographics between the two organizations prior to the training, a MANOVA concluded that these differences were non-significant, Wilks' Lambda = .776, $F(8, 54)=1.95$, *ns*.

All participants who attended the training were invited to participate in an online survey, and the current analyses are based on those employees from both organizations who completed both the pre and post-test measures. The total sample size the analysis was based on was 33 and included participants from both organizations (21 of these

participants were in the training group, and 12 were in the control group). The number of participants (includes participants from both organizations) in each group that completed the surveys at each time point are presented in Table 1. As you can see from Table 1, the response rate at Time 3 was much lower than at the other two time points, causing these scores to be excluded from the analysis. All but one participant (identified as Japanese) included in the study self identified as “Caucasian”, “white”, or “Canadian”. The age of all participants ranged from 20-62, where the average age was 41, and 70% of the entire sample was female.

Table 1

Sample Sizes

Variable	Group	Time 1 (N)	Time 2 (N)	Time 3 (N)
Knowledge	Control	19	22	13
	Training	28	27	15
Self Efficacy	Control	19	22	13
	Training	28	27	15
Stigmatizing Attitudes	Control	19	22	12
	Training	27	27	15
Mental Health	Control	19	22	13
Promotion	Training	27	27	15
Psychological	Control	19	22	13
Safety	Training	27	27	15
Willingness 1	Control	18	21	12
	Training	27	27	15
Willingness 2	Control	18	21	12

	Training	27	27	15
Psychological	Control	19	22	13
Health	Training	27	25	15

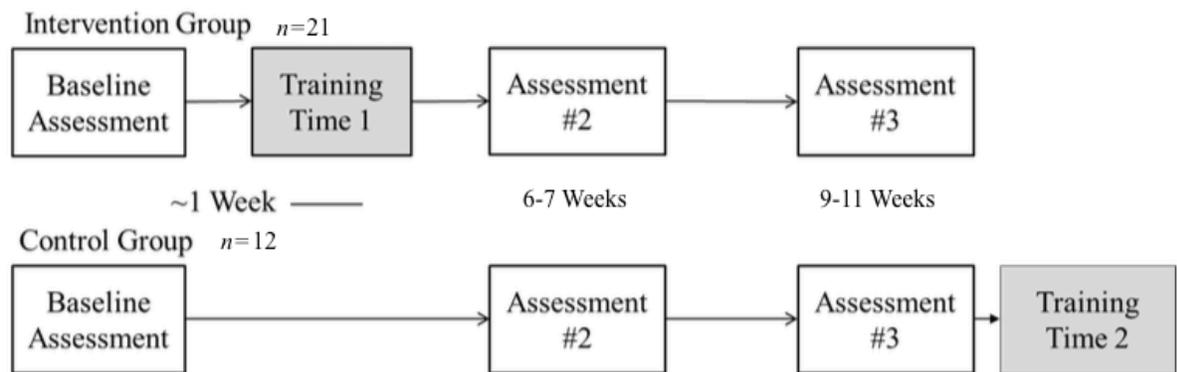
Procedure

Recruitment involved approaching organizations that met the inclusion criteria and that the researchers felt may be interested in training their employees on mental health knowledge. This involved advertising and marketing the training program through social media platforms, as well as conducting cold calls/emails, and reaching out to organizations in which I have mutual connections through professors, family members, and friends. Once Organizations A and B were recruited, the HR contact at each organization notified staff members about the training in order to recruit individual participants from these organizations to participate in an organization specific training session. Participants in each training session were groups of co-workers.

To determine the impact of the training, I used a wait-list control group design to evaluate the training over time (see Figure 1). By using a control group of employees who did not receive the training until following all of the data collection period, a cause-and-effect relationship between the training and any organizational improvements is more easily discernable. To do this, employees in Organization A were split into a training group ($n = 23$) and a waitlist control group ($n = 30$). The organization's HR Manager determined who was going to be in the training group and who was going to be in the control group based on their availability. Since Organization B only had enough

participants for one group ($n = 24$), this was also considered a training group, and followed the same timeline as Organization A's training group. Training groups from Organizations A and B were combined for analysis. In total, 47 employees were assigned to the training group, and 30 were assigned to the control group, and of those, 21 participants from the training group and 12 participants from the control group were ultimately included in the analysis based on survey responses.

Figure 1: Waitlist control research design.



Once the two organizations consented, employees were split into a waitlist-control group and a training group (maximum 30 participants in each group to facilitate discussion while keeping the length of the training at 2 hours). Prior to any training, employee participants in both the training and the control groups were invited to fill out an online survey through Qualtrics (baseline or "pre" assessment). Once the baseline assessment was completed, the principal investigator delivered the training to the employees in the training group in Organization A, and Organization B, respectively. The baseline assessment and the training were delivered to both organizations in October 2016. In November 2016, 6-7 weeks following the delivery of the training in the

organizations, all employees (including both the control and the training groups) were asked to fill out the same survey again for the first post-training assessment. For the third and final assessment in December 2016, 9-11 weeks after the delivery of the training to the training group, employees in both groups were asked to fill out the survey once more.

Following the completion of the surveys, the organizations received a detailed report summarizing the findings from the study both at the group-level, as well as the feedback employees provided regarding the training. As part of this report, the organizations receive a set of recommendations of how to maintain any improvements that were observed as a result of the training programs.

Co-Worker Mental Health Awareness Training. The training (Dimoff, et al., 2016) is 2 hours long and consists of two modules and a case study. The training begins with a case study where groups of 4-5 employees read a scenario about a hypothetical colleague who is displaying unusual behaviour at work. The small groups of employees work together to answer a series of discussion questions surrounding the warning signs in the case study and how the signs could be appropriately addressed. At the conclusion of the case study, I (the facilitator) brought these discussion questions back to all attendees in the training. Together, we discussed differences and similarities between individual group responses and walked through scenarios that were especially appropriate and/or inappropriate. The training also consists of lecture style training, broken up by several “brain blasts” in which the participants are asked a question related to the material, and have 1 minute to reflect and write down their answers. An example of a brain blast in the CHAT is “What do you do to de-stress and keep from getting burnt out?” Participants

volunteer their responses and the facilitator then discusses these brainstorming ideas with the group as a whole. The case study and brain blasts are intended to create discussion around mental illness in the workplace, help normalize mental illness as something that many people experience and/or observe, and to help employees feel empowered about the abilities they already have related to mental health at work. The training also incorporates several videos in order to keep participants engaged.

The first module, entitled “What do you know,” is designed to teach employees about the five most prominent mental health problems that occur within the working population (i.e., stress, burnout, depression, anxiety, and substance abuse), as well as suicide. This focuses on the internal symptoms and external warning signs of these illnesses, with the main objective of teaching employees basic knowledge about mental health and these mental health problems. In doing so, this module is designed to provide employees with the knowledge and skills to recognize warning signs of a developing mental illness. Employees are taught how to recognize warning signs both within themselves and within others (e.g., colleagues, friends, family members).

The second module, “Where do you go,” is intended to teach employees about the resources they have available to them, both through the resources provided by the organizations (e.g., EFAP, health benefits), as well as external resources (i.e., the Mental Health Mobile Crisis Unit, Family Doctors, Psychologists, Counselors, Psychiatrists). This module includes information both on self-help, as well as supporting others such as co-workers, friends, or family members. This skill focused section also emphasizes “taking action,” and how to approach a co-worker (or bring this information to a

supervisor/HR/EFAP) if employees have recognized warning signs of mental ill health in their colleagues, as well as how to disclose to their colleagues and their supervisor if they are experiencing these symptoms.

Throughout the training, open discussion and questions are encouraged, and it is emphasized that this training is meant to provide general tools and resources to be able to recognize and address behavioural and workplace concerns, and take action in a compassionate and appropriate way. My intent was not to train individuals as counsellors and diagnose mental illnesses or offer unsolicited advice or suggestions that should be left to a professional.

As a customized training program, the implementation of the CHAT involves a full day of customization, where I worked closely with the organization's Human Resources team and any other relevant stakeholders (Manager of Organizational Health and Safety, and the Occupational Health Team) in order to collect and prepare organization-specific information (i.e., company resources, policies, EAP information) to tailor the content of the training to the organization, its resources, and its needs. This customization forms the basis of the training workbooks (Dimoff et al., 2016), which are provided to each participant of the training. Training workbooks included the training materials, a list of relevant facts about mental illness and mental health, some tips on managing one's personal stressors, and some additional information about how to help others who are struggling. The workbooks also included copies of relevant organizational policies or programs (i.e., workplace harassment policies, benefits and leave policies, EAP policies, OHS policies), and important contacts.

Measures

Matching and grouping participants. In order to match participants on their survey responses over time without collecting identifiable information, participants were asked on their first survey response to create a unique identification code by combining the first 2 letters of their father's first name, first 2 letters of their mother's maiden name, and the 2 digits of their birthdate (day). This allowed me to keep participants' data anonymous, while still allowing their responses to be matched. The participants were also asked what organization they are employed by, the date they received the training, and whether or not they have already received the training at the time of the survey.

Mental Health Knowledge. This was assessed by the 12 – item ($\alpha = .73$) Mental Health Knowledge Schedule (MAKS; Evans-Lacko, et al., 2010). Items were assessed on a 1-7 Likert scale where 1=Strongly Disagree, and 7=Strongly Agree. Items for each scale are presented in Appendix A.

Employee Attitudes on Mental Health (Stigma). This was assessed using an adapted 9-item ($\alpha = .81$) Personal Depression Stigma Scale (Griffiths, Christensen, Jorm, Evans & Groves, 2004), which ranges from 1 (Strongly Disagree, to 7 (Strongly Agree). The scale was modified by replacing the word “depression” with the term “mental health problem.”

Willingness to Use Resources. This was assessed with 2 questions derived from the General Help-Seeking Questionnaire (GHSQ; Wilson, Deane, Ciarrochi, & Rickwood, 2005) that asked about employees' willingness to seek social support and use resources. Each question asked the participant to respond to 7 items that represent

different resources (Manager, EAP, HR, Coworker, Other source at work, other source outside of work and would not seek help). The first question asked about willingness to use the 7 various resources if the employee were to experience a struggle or set back (e.g., family or personal problem; $\alpha = .61$). The second question asked about willingness to use the 7 various resources if the employee were to experience some kind of health problem (e.g., mental health problem, physical health problem, injury; $\alpha = .58$).

Responses are categorized on a 6-point scale ranging from 1 (Very Unlikely) to 6 (Very Likely). The two items were analyzed separately, as two separate dependent variables. In computing these scales for the analysis, only the items that were relevant to workplace resources (HR, coworker, manager, other resources at work) were included in the analysis. EAP was not included as only one of the two organizations included in this study offered an EAP program.

Self Efficacy. This was assessed using a 12-item ($\alpha = .89$) scale adapted from Chen, Gully and Eden's, (2001) measure. Items were adapted to reflect self efficacy related to recognizing and addressing employee's own mental health. Three items were added to the scale to assess the employee's self efficacy of appropriately responding to a co-worker's mental health problem. These items included "I am confident that I can perform effectively on many activities related to my co-worker's mental health," "I am confident that I would know what to do if a co-worker was having a mental health problem," and "I would be able to appropriately help co-workers if they were having difficulties related to mental health." The scale ranged from 1 (Strongly Disagree) to 7 (Strongly Agree).

Mental Health Promotion Intention. This was measured with an adapted version of a safety scale designed to measure leaders' safety promotion intentions (Mullen & Kelloway, 2009). The measure consisted of three items ($\alpha = .80$). The scale ranged from 1 (Strongly Disagree) to 7 (Strongly Agree).

Psychological Health. This was assessed with the 12-item ($\alpha = .89$) version of the General Health Questionnaire (Goldberg, 1972). The scale has been widely used to study mental health in the general population and was validated for use in measuring mental health in occupational settings by a series of three studies done by Banks et al (1980). The scale consists of 12 questions that were answered on a 5-point Likert Scale (1=*Never*, 5=*All of the Time*). The original scale asks the participants to reflect on 'recent times' but in the current study we asked participants to reflect on the past month.

Psychological Safety. This was measured by a 7 item ($\alpha = .81$) scale developed by Edmondson (1999). The response scale ranges from 1=Strongly Disagree, to 7=Strongly Agree.

Results

Descriptive Statistics for all study variables are presented in Table 2, and correlations between the variables are presented in Table 3. Initial inspection of histograms and stem and leaf plots for each of the outcome variables through SPSS identified four outliers in the data. These cases were removed from the analysis so as not to skew the effect of the training on the outcome variables. This brought the analysis sample size down to $n = 12$ in the control group and $n = 21$ in the training group, ($N=33$

in total); this was the final sample size included in the analysis¹. After deletion of the outliers, the homogeneity of covariance matrices assumption was met, Box's $M = 61.38$, $F(36, 1797.68) = 1.15$, $p = .25$, *ns*. Inspection of Levene's test for individual variables suggested that the assumption of equal variances was met for all eight of the outcome variables. An attrition analysis was also conducted in order to determine whether or not there was attrition bias between Time 1 and Time 2 (a significant difference between scores of respondents who responded at Time 1 and Time 2, and those who responded only at Time 1). To do this, I ran a MANOVA between those who responded at Time 1 and Time 2 and those who only responded at Time 1. The MANOVA was significant, Wilks' Lambda = .76, $F(8, 57) = 2.21$, $p < 0.05$, meaning there was a significant difference between those that responded only at Time 1 and those who responded at both time points. An examination of the univariate effects of the MANOVA showed that the only significant univariate effect was for Psychological Safety, $F(1, 64) = 12.18$, $p < 0.01$, meaning that those who responded at both time points reported a higher level of safety than those who responded only at Time 1. However, the following analysis controls for pretest differences, which mitigates this effect.

Therefore, I proceeded to test my hypotheses using a One-Way MANCOVA all of the Time 2 variables as the dependent variables; all of the Time 1 variables as the covariates; and the Training/Control group variable as the independent variable. Time 3

¹ Analyses were conducted with and without the outliers with similar results in both cases. However including the outliers resulted in a violation of the assumption of homogeneity of covariance matrices so I opted for the more conservative strategy of deleting the outliers (thereby meeting the required assumptions of MANCOVA).

data were not included in the analysis, as it brought the sample size of the analysis down substantially.

The Multivariate effects of the MANCOVA indicated that the Training was significantly associated with the linear combination of the dependent variables, and explained 65% of the variance, Wilks' Lambda = .351, $F(8, 16)=3.70$, $p < 0.05$, $\eta_p^2 = .65$). A post-hoc power analysis revealed that the observed power for the multivariate effect was .90. The individual tests showed that Training was associated with Self Efficacy at Time 2 ($F(1, 23)=10.96$, $p < 0.01$, $\eta_p^2 = .32$), and explains 32% of the variance after controlling for all of the covariates (pre-test effects). Mental health promotion intention at Time 2 was also associated with the Training, $F(1, 23)=4.93$, $p < 0.05$, $\eta_p^2 = .18$, and explains 18% of the variance after controlling for all the covariates (pre-test effects). The estimated marginal means (see Table 2) show that both Self Efficacy and Mental health promotion intention increased from Time 1 to Time 2 for the trained, but not the control group. Due to the null results of several of the univariate effects, I examined the post-hoc, observed power of the analyses, which are presented in Table 4.

Table 2

Estimated Marginal Means for Each Outcome Variable

Variable	Group	Time 1	Time 2	Significance (p)
Knowledge	Control			.16
	Training	5.21	5.51	
Self Efficacy	Control	5.15	5.08	.00

	Training	4.98	5.49	
Stigmatizing Attitudes	Control	2.45	2.55	.14
	Training	2.42	2.29	
Mental Health Promotion	Control	5.31	5.08	.04
	Training	5.25	5.46	
Psychological Safety	Control	5.51	5.42	.38
	Training	5.16	5.28	
Willingness 1	Control	3.95	3.58	.11
	Training	3.62	3.92	
Willingness 2	Control	3.98	3.54	.07
	Training	3.87	3.97	
Psychological Health	Control	3.81	3.79	.30
	Training	3.84	3.93	

Table 3

Correlation Matrix

Variable	M(SD)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. MAKS (T1)	61.81 (7.42)	1															
2. MAKS (T2)	65.30 (5.93)	.69*	1														
3. SE (T1)	60.54 (8.25)	.24	.24	1													
4. SE (T2)	64.09 (8.26)	.36*	.47*	.80**	1												
5. SA (T1)	21.88 (6.39)	-.29	-.31	-.15	-.22	1											
6. SA (T2)	21.45 (5.71)	-.09	-.20	-.11	-.17	.65**	1										
7. MHP (T1)	15.81 (2.95)	.36*	.45*	.37*	.43*	-	-	1									
8. MHP (T2)	15.97 (3.60)	.40*	.47*	.40*	.50**	-.60**	-.53**	-	1								
9. PS (T1)	37.00 (5.45)	-.11	.06	.31	.09	-.42*	-	.45**	.45**	1							
10. PS (T2)	37.33 (4.10)	-.28	-.06	.31	.10	-.30	-.36*	.39*	.39*	.74**	1						
11. WUR1 (T1)	14.97 (3.88)	-.10	-.18	.16	.14	-.25	-.04	.42*	.55*	.42*	.49**	1					

12. WUR1 (T2)	15.18 (2.83)	-.07	-.06	.13	-.03	-.34	-.35*	.43*	.51**	.54**	.49**	.51**	1				
13. WUR2 (T1)	15.64 (3.45)	-.01	-.12	-.13	-.12	-.16	-.07	.44*	.58**	.39*	.33	.73**	.60**	1			
14. WUR2 (T2)	15.24 (3.00)	-.00	-.01	.05	-.05	-.35*	-.37*	.40*	.42*	.49**	.44*	.34	.84**	.58**	1		
15. GHQ (T1)	45.94 (6.59)	-.25	-.06	.35*	.35*	.08	.10	.20	.24	.31	.319	.31	.01	.20	.12	1	
16. GHQ (T2)	46.58 (6.78)	-.38*	-.19	.18	.23	.11	.14	.06	.04	.21	.26	.19	-.14	.09	.05	.82**	1

Table 4

Observed Power

Variable	Observed Power
Knowledge	.17
Self Efficacy	.75
Stigmatizing Attitudes	.12
Mental Health Promotion	.61
Psychological Safety	.32
Willingness 1	.05
Willingness 2	.05
Psychological Health	.16

Discussion

An analysis of Hypotheses 1-7 revealed partial support for the effectiveness of the Co-worker Mental Health Awareness Training, a training program intended on addressing mental health in the workplace, based on the success of the Mental Health Awareness Training Program for Leaders (MHAT; Dimoff et al., 2016). The training had a significant effect on the combination of the outcome variables, explaining over half of the variance in scores. More specifically, looking at the independent effects of the training on each individual outcome variable, the results indicated that the training had a significant effect on participants' self-efficacy surrounding their ability to recognize and respond to mental health problems in the workplace (*Hypothesis 4*), and on participants' intentions to promote mental health in their workplace (*Hypothesis 5*). Both of these constructs are particularly relevant to the success of the CHAT.

Self-efficacy influences individuals' thoughts, emotional reactions, and motivational and behavioural patterns (Simosi, 2012). In this case, self efficacy is especially important because it encapsulates an employees' belief that they can take action to solve a mental health problem at work—either with regard to their own mental health or with regard to the mental health of those around them (e.g., coworkers). When employees feel confident in their abilities to transfer the skills they learned in the CHAT to successful performance of the skill in their workplace, they are more likely to do so autonomously (Simosi, 2012). Previous research shows that employees high in self-efficacy will put more of their resources into their planned future actions, and are more likely to benefit from participation in a training program (Wood & Bandura, 1989;

Simosi, 2012). Self-efficacy is also related to training transfer (i.e., the application of knowledge, skills and attitudes learned from training on the job; Xiao, 1996; Gegenfurtner, 2011), and skill acquisition and maintenance (Chen, Sok & Sok, 2006). Therefore, employees' self-efficacy in their abilities to recognize and respond to mental health problems in the workplace is crucial to the continued success and application of the skills acquired from the CHAT.

In addition to self-efficacy, employees' intentions to promote mental health in their workplace significantly increased after attending the CHAT. The measure of mental health promotion used in this study asked participants if they were likely to promote mental health in the workplace, if they felt comfortable discussing mental health issues at work, and if they would apply what they learned about employee mental health in their work setting. According to the Canadian Mental Health Association, mental health promotion reduces barriers and increases individual capacity to achieve and maintain adequate mental health through the creation and maintenance of supportive environments (Pollett, 2007). Not only does mental health promotion positively affect those in the organization who may be suffering from mental illness, but also those without mental illness (CMHA-O, 2012). Increased mental health promotion in the workplace, combined with increased self-efficacy in recognizing and addressing mental health issues in the workplace may help facilitate the development of a Psychologically Healthy Workplace.

With respect to univariate effects that were non-significant, although the scores for the employee's level of knowledge regarding mental health prior to the training (Time 1) were not high enough to be considered a ceiling effect (5.05-5.21 on a 7 point scale),

the scores indicate that employees were at an average level of mental health knowledge before the training was delivered. The CHAT is not intended to teach a level of knowledge above the average level, but rather to teach the public general knowledge and guidelines related to mental health in the workplace. In fact, this is emphasized several times during the training, as mentioned above. Given the increases in awareness and attention to mental health in the media in recent years, especially in Canada, it is likely that the employees included in this study, and many employees in Canada obtain an average level of understanding of mental health through this exposure. The fact that this outcome was non-significant could be due to the fact that the CHAT does not teach a level of knowledge about mental health to surpass this average level of knowledge that the employees already had.

The non-significant effect of Willingness to Use Resources was particularly surprising, as this effect was significant for the MHAT (Dimoff, 2016). Willingness to Use Resources at work is the result of improved knowledge of resources, reduced stigma surrounding resources, and perceived support/psychological safety surrounding resource-use. (Dimoff, 2016). Dimoff (2016) found that as a result of the MHAT, trained leaders were able to encourage their subordinates to use mental health resources available at work, which caused a significant effect on the Willingness to Use Resources variable. However, in the MHAT design, it was the leaders' improvements in recognizing and addressing mental health issues in their subordinates that increased subordinate's willingness to use available resources, rather than the training itself (as the subordinates were not trained). Therefore, due to the fact that the CHAT used this measure directly on

the employees who were trained, it is possible that this scale was not the most adequate measure to capture employees' use of resources or willingness to use resources following the training.

Unfortunately, objective data on the actual use of available organizational resources was not available in either of the organizations; it is possible that this objective data would have been more fruitful in assessing the use of resources, rather than self-report data on their willingness to use resources in the future. Future research could take this one step further by measuring actual use of resources, rather than just asking about employees' willingness to use them. Furthermore, future researchers could incorporate a qualitative component of this study, which would dig deeper into why someone would or would not use these resources. This would allow an organization to re-evaluate the resources they are offering, or the promotion of these resources, based on responses from their employees regarding their use of these resources.

Although there are some inevitable limitations of this study which I discuss below, there were several strengths of the research as well. This research contributes to the gap in the literature on testing the validity of mental health awareness training in organizations. The MHAT (Dimoff et al., 2016) was the first published validated mental health awareness training program for workplace leaders, and this research extends that study by testing the validity of a similar program for all levels of employees at an organization. This study uses a longitudinal quasi-experimental design to evaluate this organizational intervention, and shows evidence of real change based on the training itself; these types of experimental and quasi-experimental designs of organizational

interventions are also scarce in the existing literature (Spector & Pindek, 2016). These results are in line with previous research which suggests that workplace-based training, such as the MHAT and the CHAT, has proven to be an effective way of increasing self efficacy in recognizing and responding to mental health issues in the workplace and mental health promotion intentions (Dimoff, et al., 2016).

Limitations

This study of course, as is the nature of intervention studies, is not without its limitations. The small sample size, in particular, was a problem in this study – reducing the statistical power of the analysis (see Table 4 above); it is highly probable that this is the cause of the non-significant results on the remaining univariate effects. Due to the voluntary nature of this study, the sample size for the analysis was cut down substantially from the original sample size of the employees who attended the training program, as not all of the employees who completed the training completed all three or any of the surveys. Due to this limited sample size, the power of the analysis was decreased, which means that there is a reduced chance of detecting a significant effect. The majority of these effects were shown to be significant for the MHAT, which was tested on a larger sample than the one used in this study, and used random assignment (Dimoff, et al., 2016); therefore, I would expect that with a larger sample and the use of random assignment, these effects would be similarly significant for the CHAT as for the MHAT. However, given that there were significant effects detected in this study, even using such a small sample, it is evident that these effects were still strong enough to be detected, providing support for the effectiveness of the training with these groups.

Another potential limitation of this study is the fact that all of the measures used were self report, as self report measures are found to have lower validity than other types of measures (Taylor, Lamers, Vincnet & O’Driscoll, 1998). Unfortunately, it was not feasible in this study to collect external or objective measures, as the organizations were not able to provide objective measures such as disability claim data, as Dimoff and colleagues (2016) did in their study of the MHAT. Therefore, only the self-report measures (based on the self-report measures included in the MHAT study) were an appropriate alternative in this case. Future research on mental health training programs should make it a priority to collect objective (i.e. disability claim data) and other-rated data that could add to the evidence of the success of such program. For example, Dimoff (2016), created and validated an other-rated measure of employee strain to assist leaders in recognizing the warning signs of an employee who may be experiencing a mental health problem. Future research on the CHAT could adapt this measure for co-workers, rather than leaders, to use as a tool in recognizing a deterioration in their own, and their co-workers’ mental health.

Certainly, the fact that the MANOVA examining attrition bias was significant is a limitation of this study as well. Attrition is often times inevitable in these kind of intervention studies, given that participation in the study is voluntary, and the employees in these studies are likely very busy with their own work. However, the analysis following the attrition bias analysis controlled for pretest differences, which mitigates the effect of attrition bias. Of course, generalizability of findings to other organizations is a

further limitation to this study, as two different organizations were used, and the sample was so small that generalizability of these effects to other organizations is not guaranteed.

Implications

This research has several practical implications that may impact the social and economic well-being of individual employees and organizations. The Canadian Mental Health Association-B.C Division and the Workplace Mental Health Collaborative conducted a survey regarding workplace mental health with 597 employees across Canada; this survey revealed that employees' top choice method for learning about tools and resources related to workplace mental health was that of in person seminars, workshops and presentations, such as the CHAT (CMHA, 2016). It is important to consider not only what academic researchers are saying about the effectiveness of these types of training programs, but also to consider the wants, needs, and opinions of those stakeholders who will be taking the training and using those skills in the workplace. This will help with employee buy-in, which is particularly helpful for organizational intervention research effectiveness (Salas et al., 2012). Respondents of this Canada-wide survey also indicated that in order for their organization to better support workplace mental health, employees needed knowledge about what tools and resources are available through initiatives, such as awareness workshops, mental health promotion and prevention strategies for the workplace, knowledge on how to access HR-available services, strategies for organizations to lower employee stress, and policies and procedures for handling mental health concerns, etc (CMHA, 2016). The CHAT training provides employees with information on mental health and their organizations services,

available external resources, and strategies to deal with stress and prevent the escalation of mental health problems; this is evidence that this training tool meets the needs and wants of the employees who would be receiving it.

Additionally, although we were not able to measure disability claim data, based on the success of the MHAT, it is possible that the CHAT contributed to reduced disability costs in these organizations (Dimoff et al., 2016). Additionally, these training programs empower employees and organizations by increasing their self-efficacy and ability to recognize and respond to their own and their coworkers' mental health in the workplace. This will contribute to a more efficient and supportive recovery for employees suffering with mental health problems who may have previously suffered in silence. My hope is that the results from this study can encourage Nova Scotian organizations to participate in the Coworker Health Awareness Training, inform policy, and in turn, decrease the prevalence of mental health issues enhanced by workplace psychosocial risk factors in the province that requires the most assistance with these issues.

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Appendix A: Scale Items

Knowledge Measure For Employees

Instructions: Please use the scale below to rate the extent to which you agree with each statement.

1=Strongly disagree; 2=Disagree; 3=Somewhat disagree; 4=Neutral or don't know; 5=somewhat agree; 6=agree; 7=strongly agree

1. Most people with mental health problems want to have paid employment. +
2. If a friend had a mental health problem, I know what advice to give them to get professional help. +
3. Medication can be an effective treatment for people with mental health problems. +
4. Psychotherapy (for example, talking therapy or counselling) can be an effective treatment for people with mental health problems. +
5. People with severe mental health problems can fully recover. +
- 6. Most people with mental health problems go to a health care professional to get help. -**
7. Depression is a mental health problem. +
- 8. Stress is a mental health problem. -**
9. Schizophrenia is a mental health problem. +
10. Bipolar disorder is a mental health problem. +
11. Drug addiction is a mental health problem. +
- 12. Grief is a mental health problem -**

MAKS (Mental Health Knowledge Schedule); *Source*: Evans-Lacko, S., Little, K., Meltzer, H., Rose, D., Rhydderch, D., Henderson, C., & Thornicroft, G. (2010)

Self Efficacy Measure For Employees

Instructions: Please use the scale below to rate the extent to which you agree with each statement.

1=Strongly disagree; 2=Disagree; 3=Somewhat disagree; 4=Neutral or don't know; 5=somewhat agree; 6=agree; 7=strongly agree

1. I will be able to achieve most of the health related goals that I have set for myself. +

2. When facing difficulties related to my own mental health, I am certain that I will handle them appropriately. +
3. In general, I think that I can obtain mental health outcomes that are important to me. +
4. I believe that I can succeed at most any endeavor to which I set my mind. +
5. I will be able to successfully overcome many challenges related to my own mental health. +
6. I am confident that I can perform effectively on many activities related to maintaining my own mental health +
7. I am confident that I can perform effectively on many activities related to supporting my coworker's mental health +
8. Compared to other people, I can do most tasks very well. +
9. Even when things are tough, I can perform tasks related to mental health. +
10. I feel confident about promoting employee mental health. +
11. I am confident that I would know what to do if a coworker was having a mental health problem +
12. I would be able to appropriately help coworkers if they were having difficulties related to mental health +

9-item adapted self-efficacy scale; *Source*: Chen, G., Gully, S., & Eden, D. (2001)

Employee Attitudes on Mental Health

Instructions: Please use the scale below to rate the extent to which you agree with each statement.

1=Strongly disagree; 2=Disagree; 3=Somewhat disagree; 4=Neutral or don't know; 5=somewhat agree; 6=agree; 7=strongly agree

- People with a mental health problem are unpredictable. +
- I would not vote for a politician if I knew they suffered from a mental health problem. +
- I would not employ someone if I knew they had a mental health problem. +
- People with mental health problems are dangerous. +
- People with mental health problems could snap out of it, if they wanted. +
- If I had a mental health problem, I would not tell anyone. +
- A mental health problem is a sign of personal weakness. +
- Mental health problems are not real medical illnesses. +
- It is best to avoid people with mental health problems so that you don't develop the problem. +

Personal Depression Stigma Scale; *Source*: Griffiths, K., Christensen, H., Jorm, A., Evans, K., Groves, C., (2004)

Mental Health Promotion Intentions For Employees

Instructions: Please use the scale below to rate the extent to which you agree with each statement.

1=Strongly disagree; 2=Disagree; 3=Somewhat disagree; 4=Neutral or don't know; 5=somewhat agree; 6=agree; 7=strongly agree

1. It is very likely that I will promote mental health in my workplace +
2. I would feel comfortable discussing mental health issues at work +
3. I want to apply what I learn about employee mental health to my work setting +

Psychological Health/Wellbeing of Employees

Instructions: Please use the scale below to rate how often you experienced each of the following statements in the last month

1=Never, 2=Rarely, 3=Sometimes, 4=Often, 5=All The Time

In the past three months, have you:

1. Been able to concentrate on whatever you're doing +
- 2. Lost much sleep over worry? -**
3. Felt that you are playing a useful part in things +
4. Felt capable of making decisions about things, +
- 5. Felt constantly under strain, -**
- 6. Felt you couldn't overcome your difficulties, -**
7. Been able to enjoy your normal day-to-day activities, +
8. Been able to face your problems, +
- 9. Been feeling unhappy or depressed, -**
- 10. Been losing confidence in yourself, -**
- 11. Been thinking of yourself as a worthless person, -**
12. Been feeling reasonably happy all things considered?

Shortened version of the General Health Questionnaire; *Source*: Goldberg, (1972).

Psychological Safety for Employees

Instructions: Please use the scale below to rate the extent to which you agree to the following statements:

1=Strongly disagree; 2=Disagree; 3=Somewhat disagree; 4=Neutral or don't know;
5=somewhat agree; 6=agree; 7=strongly agree

1. **If you make a mistake in this organization, it is often held against you.** -
2. Employees/coworkers are able to bring up problems and tough issues, +
3. **People in this organization sometimes reject others for being different,** -
4. It is safe to take a risk in this organization +
5. **It is difficult to ask the people I work with for help** -
6. No one in this organization would deliberately act in a way that undermines my efforts +
7. Working in this organization, my unique skills and talents are valued and utilized. +

Psychological Safety Scale; *Source*: Edmondson, A. (1999).

Willingness to Use Resources

Instructions: Please use the following scale to rate how likely you would be to seek help from each of the sources listed below.

1=Not at all Likely; 2=Very Unlikely; 3=Unlikely; 4=Somewhat Likely; 5=Likely;
6=Very Likely

1. In the next 12 months if you were to experience some kind of struggle or set back (e.g., family or personal problem), how likely are you to seek help from the following?
 - a. Manager
 - b. Employee Assistance Program (EAP)
 - c. Human Resources
 - d. Coworker
 - e. Other Source at Work: _____
 - f. Other Source not at Work: _____
 - g. I would not seek help
2. In the next 12 months if you were to experience some kind of health problem (e.g., mental health problem, physical health problem, injury), how likely are you to seek help from the following?
 - a. Manager
 - b. Employee Assistance Program (EAP)
 - c. Human Resources

- d. Coworker
- e. Other Source at Work: _____
- f. Other Source not at Work: _____
- g. I would not seek help

2 Questions from the General Help-Seeking Questionnaire (GHSQ); *Source:* Wilson, Deane, Ciarrochi, & Rickwood, 2005