

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/325831749>

# A longitudinal assessment of the road to mental readiness training among municipal police

Article in *Cognitive Behaviour Therapy* · June 2018

DOI: 10.1080/16506073.2018.1475504

CITATIONS

6

READS

544

9 authors, including:



**R. Nicholas Carleton**

University of Regina

153 PUBLICATIONS 3,858 CITATIONS

[SEE PROFILE](#)



**Stephanie Korol**

University of Regina

4 PUBLICATIONS 9 CITATIONS

[SEE PROFILE](#)



**Kadie Hozempa**

University of Regina

9 PUBLICATIONS 77 CITATIONS

[SEE PROFILE](#)



**Gregory S. Anderson**

The Justice Institute of British Columbia (JIBC)

108 PUBLICATIONS 1,052 CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:



Post Disaster Building Assessment [View project](#)



Integration of Cognitive Behavioral Therapy and Active Imagination [View project](#)



## A longitudinal assessment of the road to mental readiness training among municipal police

R. Nicholas Carleton, Stephanie Korol, Julia E. Mason, Kadie Hozempa, Gregory S. Anderson, Nicholas A. Jones, Keith S. Dobson, Andrew Szeto & Suzanne Bailey

To cite this article: R. Nicholas Carleton, Stephanie Korol, Julia E. Mason, Kadie Hozempa, Gregory S. Anderson, Nicholas A. Jones, Keith S. Dobson, Andrew Szeto & Suzanne Bailey (2018): A longitudinal assessment of the road to mental readiness training among municipal police, *Cognitive Behaviour Therapy*, DOI: [10.1080/16506073.2018.1475504](https://doi.org/10.1080/16506073.2018.1475504)

To link to this article: <https://doi.org/10.1080/16506073.2018.1475504>



© 2018 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 18 Jun 2018.



Submit your article to this journal [↗](#)






View related articles [↗](#)



View Crossmark data [↗](#)

## A longitudinal assessment of the road to mental readiness training among municipal police

R. Nicholas Carleton<sup>a</sup> , Stephanie Korol<sup>a</sup>, Julia E. Mason<sup>a</sup> , Kadie Hozempa<sup>a</sup> , Gregory S. Anderson<sup>b</sup>, Nicholas A. Jones<sup>c</sup>, Keith S. Dobson<sup>d</sup>, Andrew Szeto<sup>d</sup> and Suzanne Bailey<sup>e</sup>

<sup>a</sup>Anxiety and Illness Behaviour Laboratory, Department of Psychology, University of Regina, Regina, Canada; <sup>b</sup>Justice Institute of British Columbia, New Westminster, Canada; <sup>c</sup>Department of Justice Studies, University of Regina, Regina, Canada; <sup>d</sup>Department of Psychology, University of Calgary, Calgary, Canada; <sup>e</sup>SSO Social Work & MH Trg, CF Health Services Group HQ, Canadian Armed Forces, Ottawa, Canada

### ABSTRACT

Police agencies increasingly implement training programs to protect mental health. The Road to Mental Readiness (R2MR) program was designed by the Canadian military to increase mental health resilience. A version of R2MR was adapted for municipal police by the Mental Health Commission of Canada (MHCC). The current research was designed to assess the R2MR program, as adapted and delivered by the MHCC, in a municipal police sample. Participants were 147 Canadian police agency employees (57% women) who received a single R2MR training session. Participants completed pre- and post-training self-report questionnaires, and follow-ups at 6 and 12 months. The questionnaires assessed mental health symptoms, work engagement, resiliency, mental health knowledge, and stigma. Multilevel modeling analyses assessed for within-participant changes over time. The results were consistent with other single session interventions; specifically, there were no significant changes in mental health symptoms, resilience, or work engagement ( $p > .05$ ). There were small, but significant ( $p < .05$ ), reductions in stigma at post-training that may facilitate help-seeking among police; relatedly, in open-ended response fields, participants commonly described the training as helpful for changing attitudes and improving communication. More engagement with the material may produce larger, sustained gains, but more published research is critically needed.

### ARTICLE HISTORY

Received 4 February 2018  
Accepted 24 April 2018

### KEYWORDS

Resiliency; training; road to mental readiness (R2MR); stigma

## Introduction

Police officers are regularly exposed to many diverse stressors within their organization (e.g. interference with family life, excessive workload, uncivil interactions with coworkers; Adams & Buck, 2010; Collins & Gibbs, 2003; Davey, Obst, & Sheehan, 2001; Karaffa & Koch,

**CONTACT** R. Nicholas Carleton  Nick.Carleton@uregina.ca

© 2018 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way.

2016; Morash, Kwak, & Haarr, 2006; Pasillas, Follette, & Perumean-Chaney, 2006) and in relation to their job duties (e.g. interactions with hostile suspects, offenders, and emotionally distraught victims; Anderson, Litzenberger, & Plecas, 2002; Garcia, Nesbary, & Gu, 2004). Among police officers, social stressors produced from civilian, suspect, co-worker, and supervisor interactions, have also been significantly related to reduced productivity, increased aggressiveness (Karaffa & Koch, 2016), turnover intention, psychological distress, and emotional exhaustion (Adams & Buck, 2010). The organizational and operational stressors that police officers regularly face can be associated with negative mental health outcomes (van der Velden, Kleber, Grievink, & Yzermans, 2010) including depression (Wang et al., 2010), maladaptive coping strategies (i.e. anger repression; Hakan Can & Hendy, 2014), and posttraumatic stress disorder (PTSD) (Maguen et al., 2009), as well as risk for physical health problems, burnout, smoking, sleep disorders, alcohol abuse, and suicide ideation (Anshel, 2000; Brown & Campbell, 1994; Gershon, Barocas, Canton, Li, & Vlahov, 2009; Karaffa & Koch, 2016; Waters & Ussery, 2007). Karaffa and Koch (2016, p. 760) reported that “the accumulation of stress can overwhelm even the most resilient officers”.

In a large survey of public safety personnel (PSP; e.g. correctional workers and officers, call center operators and dispatchers, firefighters, paramedics, police officers), Carleton et al. (2018) found substantial proportions of PSP self-report symptoms consistent with one or more mental health concerns (Carleton et al., 2018). Many municipal/provincial police (36.7%) and Royal Canadian Mounted Police (RCMP; 50.2%) screened positive for at least one mental disorder (e.g. PTSD, major depressive disorder, generalized anxiety disorder, social anxiety disorder, panic disorder, alcohol abuse). There is also evidence of high levels of chronic pain among municipal/provincial police (35.9%) and RCMP (43.4%) (Carleton et al., 2017), as well as high levels of lifetime suicidal ideation (20.5; 25.7%), planning (8.9; 11.2%), and attempts (2.1, 2.4%) (Carleton et al., *in press*). Accordingly, there has been a call for developing a national action plan to address the mental health challenges faced by Canadian PSP (Oliphant, 2016).

Despite the mental health risks faced by police, evidence suggests cultural stigma and fear of reprisal appear to be significant barriers to seeking treatment (Wester, Arndt, Sedivy, & Arndt, 2010). In particular, Karaffa and Koch (2016, p. 761) report police officers’ decision-making regarding seeking mental health assistance can be influenced by a desire to avoid what they believe are other officers’ perceptions; specifically, that those who seek help may be unable to perform their duties or “be relied upon for backup”, as well as that other officers are less likely than they are to seek help. The potential disconnect between an officer’s personal view of seeking mental health assistance and what they perceive other officers’ perceptions to be—pluralistic ignorance—can result in additional stress when the perception potentiates the “out group” in relation to the police subculture (Rose & Unnithan, 2015). Pluralistic ignorance, if left unchecked, can perpetuate officers’ reticence to seek help (Karaffa & Koch, 2016); however, Millar (2002, p. 163) reported that, contrary to an officer’s own expectations, those who sought mental health support and shared their experience received “overwhelming support” from colleagues (Millar, 2002).

In general, the contemporary work environment involves increasing workloads as the economic pressure to get more from less rises (Houdmont, Randall, Kerr, & Addley, 2013). As workloads have been progressively getting heavier, workplace stress has increased by 40% and absenteeism has increased by 25% (Houdmont et al., 2013). Increased workload and workplace pressures have invigorated dialog around the use of workplace training,

particularly for interventions supporting the development of personal and organizational resilience (Robertson & Cooper, 2013). Resilience training programs are designed to sustain and protect employee well-being and performance in the face of adversity (Anderson, Vaughan, & Mills, 2017; Robertson, Cooper, Sarkar, & Curran, 2015). There have been two systematic reviews (Leppin et al., 2014; Robertson et al., 2015) evidencing the programs as having small to moderate effect sizes for improving resilience, mental health, and subjective well-being of participants (e.g. reductions in stress, symptoms of depression, negative affect).

Embedding resilience training that includes evidence-based psychoeducation on stress and trauma directly into police recruitment and training programs may benefit officers by reducing stigma and minimizing barriers to seeking treatment (Papazoglou & Andersen, 2014). The Road to Mental Readiness (R2MR) was originally developed by the Canadian Department of National Defense to “improve short term performance and long term mental health outcomes” through building a “solid foundation in the concept of resilience” (National Defence & the Canadian Armed Forces, 2017). The R2MR program provides evidence-based psychoeducation on mental health and stress (i.e. the contemporary Mental Health Continuum Model where mental health spans *Healthy, Reacting, Injured, Ill*), as well as providing a series of evidence-based cognitive behavioral therapy style skills designed to help participants to manage stress; for example, goal setting, mental rehearsal/visualization, adapted cognitive monitoring (i.e. awareness of self-talk), and arousal management through adapted breathing (i.e. tactical breathing). The Canadian Armed Forces report evidence that the R2MR program is reducing stigma and removing barriers to care seeking among their members (National Defence & the Canadian Armed Forces, 2017). The Mental Health Commission of Canada (MHCC) adapted the R2MR material, in collaboration with police and the Canadian Department of National Defense (DND), for extended use in other environments, particularly among police, but retaining the same goals of reducing stigma, reducing barriers to care seeking, improving short-term performance, and supporting long-term mental health (Mental Health Commission of Canada, 2017; Stuart et al., 2014; Szeto & Adair, 2016); specifically, the R2MR content was modified from the original DND content by authors Dobson and Szeto, including using videos and photos relevant to police rather than military, and continually updated thereafter based on feedback from the Calgary police. Despite the evidence-based foundations for the psychoeducation and skills provided by the R2MR training programs offered by the Canadian Armed Forces and the Mental Health Commission of Canada, there is a paucity of research assessing the impact of the program on PSP. The research results are intended to inform and support the recommended national PSP mental health action plan (Oliphant, 2016), including police officers.

The present study was designed to assess the impact of the MHCC R2MR training on several factors in a sample of Canadian municipal police officers. Specifically, the research was designed to assess for changes in self-reported mental health symptoms, resilience, mental health awareness, work engagement, and mental health stigma attitudes over a one-year time frame. We expected that, consistent with prior reports (Leppin et al., 2014; Robertson et al., 2015), there would be small to moderate improvements in mental health stigma attitudes immediately after R2MR training and that the improvements would be sustained at 6- and 12-month follow-ups. In addition, we expected small to moderate improvements across all factors (mental health symptoms, mental health knowledge, resilience, work engagement) at 6- and 12-month follow-ups after R2MR training. The research results are intended to inform and support the recommended national PSP mental health action plan (Oliphant, 2016).

## Method

### Procedure

The study was approved by the first author's University Institutional Research Ethics Board (File # REB 2015–131). Approximately 570 Canadian police agency employees in a western Canadian city participated in the MHCC R2MR program as part of their training. All were invited by an administrative member of the police agency to participate in the current research program to evaluate the impact of the training. An electronic survey was administered to participants before participating in the R2MR training, immediately after training, at 6 months post-training, and at 12 months post-training (details below). The survey was anonymous, with participants self-selecting a unique nondescript identifier that would allow their responses to be linked over time.

### Participants

In total, 147 participants completed the survey prior to receiving the R2MR training ( $M_{age} = 41.52$ ;  $SD = 8.51$ ). There was a fairly even distribution of females (56.5%) and males (43.5%) who completed the pre-R2MR survey. Most participants identified as Caucasian (91.8%), married/cohabitating (74.8%), and heterosexual (96.6%). Most participants identified their rank within the Regina Police Service (RPS) as Constable (46.3%), followed by Sergeant (25.6%), Corporal (12.2%), Staff Sergeant (8.5%), and Inspector (3.7%). The remaining participants identified their rank as Deputy Chief, Superintendent, and Special Constable (3.6%). Most participants indicated that the highest level of education that they had received was a four-year college/university program (43.8%), followed by a two-year college program (23.3%), high school/high school equivalent (20.5%), graduate/professional degree (10.3%), with the remainder not completing high school, or selecting "Rather not say" (2.1%).

### Measures, standardized

#### ***Alcohol use disorders identification test (AUDIT; Gache et al., 2005; Saunders, Aasland, Babor, Delafuente, & Grant, 1993)***

The AUDIT is a 10-item self-report measure designed to assess alcohol consumption and consequences. Items such as "How often do you have six or more drinks on one occasion" are rated on a five-point Likert-type scale ranging from 1 (Never) to 5 (Four or more times a week). The AUDIT has received substantial validity and reliability support as a screening tool for risky alcohol use behaviors (Bohn, Babor, & Kranzler, 1995; Piccinelli et al., 1997; Volk, Steinbauer, Cantor, & Holzer, 1997).

#### ***Brief resilience scale (BRS; Smith et al., 2008)***

The BRS is a six-item self-report questionnaire designed to assess ability to adapt and recover from stressful experiences. Items such as "I tend to bounce back quickly after hard times" are rated on a five-point Likert-type scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). Half of the items are reverse-coded. The BRS has high internal consistency ( $\alpha \geq .80$ ) and good test-retest reliability ( $r \geq .62$ ; Leontjevas, de Beek, Lataster, & Jacobs, 2014; Rodríguez-Rey, Alonso-Tapia, & Hernansaiz-Garrido, 2016; Smith et al., 2008).



### ***Depression anxiety and stress scale 21-item (DASS-21; Antony, Bieling, Cox, Enns, & Swinson, 1998)***

The DASS-21 is a self-report measure assessing three sets of negative emotional states (i.e. depression, anxiety, stress), established from the original 42-item questionnaire (Lovibond & Lovibond, 1995). The Depression scale assesses lack of interest, hopelessness, and low self-esteem. The Anxiety scale assesses physiological arousal and subjective anxiety. The Stress scale assesses non-specific arousal, such as, agitation, muscle tension, and negative affect. Each scale consists of seven items, assessing levels over the past week with a four-point scale, ranging from 0 (did not apply to me at all) to 3 (applied to me very much, or most of the time). Overall, the DASS-21 has demonstrated good-to-excellent internal consistency and convergent validity, acceptable discriminative validity, and a consistent three-factor structure (e.g. Antony et al., 1998; Clara, Cox, Enns, 2001; Gloster et al., 2008).

### ***Mental health knowledge schedule (MAKS; Evans-Lacko et al., 2010)***

The MAKS is a 12-item self-report questionnaire designed to measure mental health literacy and stigma. Items such as “Most people with mental health problems want to have paid employment” are rated on a five-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). The MAKS is a relatively new measure, but the available psychometric data support the internal consistency and test–retest reliability of the measure (Evans-Lacko et al., 2010); in addition, the measure appears sensitive to changes based on interventions (Hansson & Markstrom, 2014).

### ***Open minds survey of workplace attitudes (OMSWA; Szeto, Luong, & Dobson, 2013)***

The OMSWA is a 23-item self-report questionnaire designed to measure mental health stigma and workplace attitudes. Items such as “I would be upset if a co-worker with a mental illness always sat next to me at work” are rated on a five-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). A single item, “*If I knew a co-worker who has a mental illness, I would not date them*”, was omitted per recommendations from Szeto to accommodate the research sample; as such, only 22 items were used in the current study. The OMSWA is a relatively new measure, but the available psychometric data support the internal consistency of the measure (Szeto et al., 2013). The measure is currently in use as a standard metric by the MHCC.

### ***Posttraumatic stress disorder checklist for DSM-5 (PCL-5; Weathers et al., 2013)***

The PCL-5 is a 20-item self-report questionnaire that measures the 20 corresponding DSM-5 symptoms of PTSD. Symptoms experienced in the past month, such as “Feeling very upset when something reminded you of the stressful experience?” are rated on a 1 (not at all) to 5 (extremely) Likert-type scale. The PCL-5 has excellent psychometric properties (e.g. Blevins, Weathers, Davis, Witte, & Domino, 2015; Bovin et al., 2016).

### ***Utrecht work engagement scale-9 items (UWES-9; Schaufeli, Bakker, & Salanova, 2006)***

The UWES-9 is a nine-item questionnaire assessing work-related state of fulfillment. Questions such as “I am proud of the work that I do” are rated on a six-point scale from 0 (never) to 6 (always). The UWES-9 has shown strong internal consistency ( $\alpha = .75$  to  $.85$ ) and a more temporally stable factor structure than longer versions of the UWES (Seppala et al., 2009).

Participants were asked to complete all standardized measures at the baseline (i.e. pre-R2MR training), 6-month, and 12-month follow-up time points. Participants were asked to also complete the OMSWA, at post-training (i.e. immediately post-R2MR training) as well as at the other time points.

### ***Measures, study-specific***

#### ***R2MR-Specific questionnaire (R2MR-Specific; Tables 2 and 3)***

The R2MR-Specific is an 11-item self-report questionnaire designed for the current study to measure participants' perceived impact of the R2MR training. The scale contains three items such as "How helpful did you find the R2MR training?" rated on a five-point scale ranging from 1 (not at all) to 5 (extremely). Items such as "Have you noticed changes in your leadership with respect to mental health?" were rated on a five-point scale ranging from 1 (none at all) to 5 (a great deal). The scale also contained three open-ended questions; specifically, "What did you find most helpful?", "What skills will be the most challenging to implement and why?", and "What skills will be the easiest to implement and why?"

#### ***R2MR-Skills utilization questionnaire (R2MR-Skills; Tables 4 and 5)***

The R2MR Skills is a 24-item self-report questionnaire designed for the current study to measure participants' utilization of skills taught during R2MR training. The scale contains nine items prompted by the question, "How often do you use the following skills or resources from R2MR?" Following the prompt, items such as "Goal setting" are rated on a seven-point scale ranging from 1 (never) to 7 (always). Participants are asked to use the same seven-point scale to respond to the question "How often have you assessed where you are on the Mental Health Continuum Model?". The scale also contains the same nine items rated on a five-point scale ranging from 1 (not at all) to 5 (extremely) prompted by the question "How helpful do you find each of the following skills or resources taught by R2MR?". A five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used to rate the five remaining scale items (e.g. I understand how mental health problems present in the workplace).

### ***Analyses***

#### ***Data preparation***

Descriptive statistics were calculated for each measure. Total scores for each dependent variable at each time point were calculated. The data was then restructured and a separate row for each time point per participant was obtained to prepare the data for the primary analyses described below.

#### ***Primary analyses***

There were two-level multilevel modeling analyses conducted for each repeated measure analysis in the current study. Time was coded into three time points including, (1) baseline, (2) 6-month follow-up, (3) 12-month follow-up, for all dependent variables, except the OMSWA. Time was coded into four time points for the OMSWA including, (1) baseline, (2) post-training, (3) 6-month follow-up, (4) 12-month follow-up. Each model included one of the dependent variables (i.e. AUDIT, BRS, DASS-21 depression, DASS-21 anxiety, DASS-21 stress, MAKS, PCL-5, OMSWA, UWES-9) at each time point (level one) nested within



participants (level two). Baseline differences in scores among individuals were accounted for by including both a fixed and random intercept in the model. Each final model included the fixed effect of time as the primary predictor variable at all time points. All models were computed using the maximum likelihood estimation. All hypothesis testing was conducted using one-tailed tests at a  $\alpha$  level of .05. Cohen's  $d$  effect sizes were computed for all models by standardizing each outcome measure and rerunning the resulting Z-scores in each model. All models were bootstrapped using 1000 samples to generate robust probability values and corresponding confidence intervals.

## Results

### *Descriptive statistics*

Descriptive statistics of the dependent variables measured at baseline and at each follow-up (i.e. 6-month and 12-month) can be found in Table 1. Immediately following the R2MR training and at the 6-month and 12-month follow-ups, participants also completed the R2MR-Specific and R2MR-Skills Utilization questionnaires, regarding their views on the R2MR training, its perceived helpfulness and utility, and its effect on their views of mental health in the workplace (see Tables 2–6).

### *Multilevel models*

#### *Mental health symptoms*

The results of each two-level multilevel model for each mental health symptom measures (i.e. DASS-21 depression, DASS-21 anxiety, DASS-21 stress, PCL-5, AUDIT), across each time point (i.e. baseline, 6-month, and 12-month follow-up), are presented in Table 7. Overall, there were no significant changes in symptoms of depression, anxiety, stress, posttraumatic stress, and alcohol use, at any follow-up time point, following the R2MR training intervention. Specifically, compared to both the 6-month follow-up,  $d = 0.003$  (95% CI [−0.41, 0.81]), and 12-month follow-up depression scores,  $d = 0.038$  (95% CI [−0.48, 0.52]), baseline depression scores were associated with non-significant increases in depression scores. Similarly, when compared to both the 6-month follow-up,  $d = 0.129$  (95% CI [−0.34, 0.89]), and 12-month follow-up scores,  $d = 0.067$  (95% CI [−0.35, 0.61]), baseline posttraumatic stress scores were associated with non-significant increases in posttraumatic stress scores. Additionally, when baseline anxiety scores were compared to anxiety scores at 6-month,  $d = 0.023$  (95% CI [−0.50, 0.74]), and 12-month  $d = -0.20$  (95% CI [−0.53, 0.13]), baseline anxiety scores were associated with non-significant increases in anxiety scores. Furthermore, baseline stress scores were associated with nonsignificant decreases in stress scores when compared to both the 6-month,  $d = -0.056$  (95% CI [−0.34, 0.23]), and 12-month,  $d = -0.123$  (95% CI [−0.49, 0.36]) follow-up scores. Finally, when compared to baseline alcohol use scores, both the 6-month follow-up,  $d = -0.048$  (95% CI [−0.25, 0.04]), and 12-month follow-up scores,  $d = -0.067$  (95% CI [−0.42, 0.21]), were associated with non-significant decreases in alcohol use scores.

#### *Mental health awareness, knowledge, and protective factors*

The results of each multilevel model evaluating changes in mental health knowledge or resilience scores (i.e. MAKS, BRS), across each time point (i.e. baseline, 6-month, and

**Table 1.** Descriptive statistics for dependent measures from baseline to 12-month follow-up.

Time point	<i>n</i>	<i>M</i>	<i>SD</i>	Skewness	Kurtosis
Baseline					
DASS-21 depression	133	4.00	4.44	1.37	1.64
DASS-21 anxiety	133	2.71	3.02	1.83	4.88
DASS-21 stress	133	5.93	4.50	1.13	1.63
PCL-5 total	125	14.78	14.33	1.21	1.09
AUDIT	110	4.02	2.81	1.32	2.54
UWES-9	112	32.58	8.10	-0.57	1.62
BRS	112	2.95	0.29	-0.12	1.15
MAKS	112	46.46	3.83	0.22	0.83
OMSWA	113	2.00	0.49	0.27	-0.40
Post-training					
OMSWA	113	1.89	0.44	0.14	-0.29
6-month follow-up					
DASS-21 depression	52	3.64	4.03	1.39	1.17
DASS-21 anxiety	52	2.52	3.22	2.26	5.96
DASS-21 stress	52	5.15	4.15	1.46	3.34
PCL-5	45	14.29	13.88	1.57	2.61
AUDIT	41	4.12	2.99	2.22	7.51
UWES-9	44	33.09	7.18	0.32	-0.57
BRS	44	2.93	0.35	0.08	-0.59
MAKS	44	46.27	3.99	-1.06	4.22
OMSWA	45	1.98	0.54	0.16	-0.53
12-month follow-up					
DASS-21 stress	56	5.38	4.17	0.84	1.29
DASS21 depression	56	4.21	5.32	1.75	2.70
DASS21 anxiety	56	2.13	3.37	2.57	7.53
PCL-5	44	14.68	15.49	1.79	3.68
AUDIT	37	4.24	2.96	1.35	3.28
UWES-9	42	31.88	9.38	-0.14	-0.04
BRS	42	2.98	0.26	0.38	0.31
MAKS	59	46.53	4.13	-0.50	-0.02
OMSWA	57	1.93	0.48	0.56	0.55

Note: DASS-21 = Depression Anxiety Stress Scales 21-item; PCL-5 = Posttraumatic Stress Disorder Checklist-5; PGI = Post-traumatic Growth Inventory; AUDIT = Alcohol Use Disorders Identification Test; UWES-9 = Utrecht Work Engagement Scale 9-item; BRS = Brief Resilience Scale; MAKS = Mental Health Knowledge Schedule; OMSWA = Open Minds Survey of Workplace Attitudes.

12-month), are presented in Table 7. Overall, following R2MR training there were no significant changes in mental health knowledge and resilience scores. Mental health knowledge scores were associated with non-significant changes at both the 6-month,  $d = 0.042$  (95% CI [-0.46, 0.74]), and 12-month follow-ups,  $d = -0.015$  (95% CI [-0.36, 0.31]). Similarly, when compared to baseline resilience scores, both the 6-month follow-up,  $d = -0.061$  (95% CI [-0.40, 0.28]), and 12-month follow-up scores,  $d = 0.106$  (95% CI [-0.23, 0.45]), were associated with non-significant changes in resilience scores.

### **Work engagement and stigma attitudes**

The results of each multilevel model of work engagement or workplace stigma attitudes (i.e. UWES-9, OMSWA) across each time point (i.e. baseline, post-training, 6-month follow-up, 12-month follow-up) are presented in Table 7. There were no significant changes found in work engagement following the R2MR training intervention. Specifically, work engagement scores were associated with non-significant changes at both the 6-month follow-up,  $d = 0.050$  (95% CI [-0.44, 0.53]), and 12-month follow-up,  $d = -0.134$  (95% CI [-0.52, 0.19]). Workplace stigma attitude scores were associated with small, but significant ( $p = .031$ ), decreases in workplace stigma attitude scores at post-training,  $d = -0.287$

**Table 2.** R2MR-specific skills training questions.

	Post-training	6-month follow-up	12-month follow-up
	% (n)	% (n)	% (n)
How helpful did you find the R2MR training?			
Not at all	2.0 (2)	5.0 (2)	1.7 (1)
A little	12.2 (12)	20.0 (8)	21.7 (13)
Somewhat	22.4 (22)	35.0 (14)	50.0 (30)
Very	49.0 (48)	30.0 (12)	23.3 (14)
Extremely	14.3 (14)	10.0 (4)	3.3 (2)
How much do you feel you learned?			
None at all	2 (2.0)	1 (2.5)	2 (3.3)
A little	16 (16.3)	10 (25.0)	17 (28.3)
Some	34 (34.7)	15 (37.5)	27 (45.0)
A lot	33 (33.7)	13 (32.5)	12 (20.0)
A great deal	13 (13.3)	1 (2.5)	2 (3.3)
How much do you remember about R2MR?			
None at all	1.0 (1)	2.5 (1)	5.0 (3)
A little	7.1 (7)	30.0 (12)	36.7 (22)
Some	35.7 (35)	55.0 (22)	45.0 (27)
A lot	43.9 (43)	10.0 (4)	8.3 (5)
A great deal	12.2 (12)	2.5 (1)	5.0 (3)
How well do you feel you can implement the skills from R2MR?			
Not at all	3.1 (3)	5.0 (2)	3.3 (2)
A little	10.2 (10)	37.5 (15)	40.0 (24)
Somewhat	41.8 (41)	37.5 (15)	35.0 (21)
Very	37.8 (37)	17.5 (7)	20.0 (12)
Extremely	7.1 (7)	2.5 (1)	1.7 (1)

**Table 3.** R2MR changes from training questions.

	Post-training	6-month follow-up	12-month follow-up
	% (n)	% (n)	% (n)
Since completing R2MR have you noticed changes in the better for yourself regarding mental health?			
None at all	36.7 (36)	30.0 (12)	45.0 (27)
A little	19.4 (19)	30.0 (12)	20.0 (12)
Some	31.6 (31)	30.0 (12)	31.7 (19)
A lot	10.2 (10)	1.4 (4)	1.7 (1)
A great deal	2.0 (2)	0.0 (0)	1.7 (1)
Since completing R2MR have you noticed changes for the better in your leadership with respect to mental health?			
None at all	26.5 (26)	27.5 (11)	30.0 (18)
A little	27.6 (27)	25.0 (10)	31.7 (19)
Some	30.6 (30)	37.5 (15)	21.7 (13)
A lot	14.3 (14)	10.0 (4)	16.7 (10)
A great deal	1.0 (1)	0.0 (0)	0.0 (0)
Since completing R2MR have you noticed changes for the better in your colleagues with respect to mental health?			
None at all	35.7 (35)	20.0 (8)	40.0 (24)
A little	26.5 (26)	45.0 (18)	30.0 (18)
Some	27.6 (27)	32.5 (13)	21.7 (13)
A lot	8.2 (8)	2.5 (1)	8.3 (5)
A great deal	2.0 (2)	0.0 (0)	0.0 (0)
How often have you accessed resources based on R2MR?			
Not at all	59.2 (58)	65.0 (26)	56.7 (34)
A little	19.4 (19)	20.0 (8)	23.3 (1)
Somewhat	18.4 (18)	15.0 (6)	15.0 (9)
Very	2.0 (2)	0.0 (0)	3.3 (2)
Extremely	1.0 (1)	0.0 (0)	1.7 (1)



**Table 4.** R2MR skills utilization questions.

	Never % (n)	Almost never % (n)	Rarely % (n)	Sometimes % (n)	Often % (n)	Very often % (n)	Always % (n)
How often did you find use of the following skills or resources?							
Goal setting							
Post-training	6.3 (6)	7.4 (7)	6.3 (6)	28.4 (27)	26.3 (25)	17.9 (17)	2.5 (7)
6-month follow-up	20.0 (8)	2.5 (1)	12.5 (5)	25.0 (10)	22.5 (9)	15.0 (6)	2.5 (1)
12-month follow-up	21.7 (13)	5.0 (3)	11.7 (7)	26.7 (16)	21.7 (13)	11.7 (7)	1.7 (1)
Mental rehearsal/visualization							
Post-training	7.4 (7)	5.3 (5)	10.5 (10)	27.4 (26)	31.6 (30)	10.5 (10)	7.4 (7)
6-month follow-up	22.5 (9)	7.5 (3)	17.5 (7)	27.5 (11)	20.0 (8)	2.5 (1)	2.5 (1)
12-month follow-up	18.3 (11)	8.3 (5)	13.3 (8)	18.3 (11)	23.3 (14)	13.3 (8)	5.0 (3)
Self talk							
Post-training	8.4 (8)	4.2 (4)	8.4 (8)	18.9 (18)	29.5 (28)	18.9 (18)	11.6 (11)
6-month follow-up	10.0 (4)	0.0 (0)	17.5 (7)	35.0 (14)	20.0 (8)	15.0 (6)	2.5 (1)
12-month follow-up	11.7 (7)	6.7 (4)	11.7 (7)	16.7 (10)	30.0 (18)	13.3 (8)	10.0 (6)
Arousal management (Tactical breathing)							
Post-training	10.5 (10)	8.4 (8)	15.8 (15)	34.7 (33)	21.1 (20)	4.2 (4)	5.3 (5)
6-month follow-up	17.5 (7)	12.5 (5)	25.0 (10)	32.5 (13)	5.0 (2)	5.0 (2)	2.5 (1)
12-month follow-up	18.3 (11)	10.0 (6)	13.3 (8)	31.7 (19)	3.2 (9)	6.7 (4)	5.0 (3)
Knowledge about resources and confidence in accessing them							
Post-training	9.5 (9)	11.6 (11)	18.9 (18)	36.8 (35)	14.7 (14)	6.3 (6)	2.1 (2)
6-month follow-up	15.0 (6)	15.0 (6)	15.0 (6)	27.5 (11)	12.5 (5)	12.5 (5)	2.5 (1)
12-month follow-up	18.3 (11)	20.0 (12)	23.3 (14)	16.7 (10)	8.3 (5)	11.7 (7)	1.7 (1)
“Shield, sense, support” (leadership only)							
Post-training	33.7 (33)	6.3 (6)	17.9 (17)	26.3 (25)	10.5 (10)	4.2 (4)	1.1 (1)
6-month follow-up	57.5 (23)	7.5 (3)	20.0 (8)	12.5 (5)	0.0 (0)	2.5 (1)	0.0 (0)
12-month follow-up	36.7 (22)	20.0 (12)	15.0 (9)	15.0 (9)	11.7 (7)	0.0 (0)	1.7 (1)
Mental health continuum model							
Post-training	14.7 (14)	12.6 (12)	18.9 (18)	26.3 (25)	18.9 (18)	6.3 (6)	2.1 (2)
6-month follow-up	27.5 (11)	7.5 (3)	20.0 (8)	30.0 (12)	12.5 (5)	2.5 (1)	0.0 (0)
12-month follow-up	21.7 (13)	11.7 (7)	20.0 (12)	28.3 (17)	10.0 (6)	3.3 (2)	5.0 (3)
The pocket card							
Post-training	32.6 (31)	10.5 (10)	21.1 (20)	24.2 (23)	7.4 (7)	3.2 (3)	1.1 (1)
6-month follow-up	40.0 (16)	12.5 (5)	17.5 (7)	20.0 (8)	7.5 (3)	2.5 (1)	0.0 (0)
12-month follow-up	55.0 (33)	13.3 (8)	10.0 (6)	10.0 (6)	6.7 (4)	1.7 (1)	3.3 (2)
The aide memoire (leadership booklet)							
Post-training	47.4 (45)	10.5 (10)	15.8 (15)	20.0 (19)	5.3 (5)	1.1 (1)	0.0 (0)
6-month follow-up	70.0 (28)	12.5 (5)	7.5 (3)	10.0 (4)	0.0 (0)	0.0 (0)	0.0 (0)
12-month follow-up	73.3 (44)	8.3 (5)	6.7 (4)	10.0 (6)	1.7 (1)	0.0 (0)	0.0 (0)

**Table 5.** R2MR skills helpfulness questions.

	Not at all	A little bit	Moderately	Quite a bit	Extremely
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
How helpful did you find each of the following skills or resources:					
Goal setting					
Post-training	4.2 (4)	17.9 (17)	16.8 (16)	47.4 (45)	13.7 (13)
6-month follow-up	15.0 (6)	20.0 (8)	25.0 (10)	32.5 (13)	7.5 (3)
12-month follow-up	18.3 (11)	26.7 (16)	20.0 (12)	30.0 (18)	5.0 (3)
Mental rehearsal/visualization					
Post-training	7.4 (7)	12.6 (12)	20.0 (19)	43.2 (41)	16.8 (16)
6-month follow-up	15.0 (6)	22.5 (9)	20.0 (8)	35.0 (14)	7.5 (3)
12-month follow-up	15.0 (9)	18.3 (11)	25.0 (15)	33.3 (20)	8.3 (5)
Self talk					
Post-training	5.3 (5)	12.6 (12)	23.2 (22)	40.0 (38)	18.9 (18)
6-month follow-up	10.0 (4)	27.5 (11)	27.5 (11)	25.0 (10)	10.0 (4)
12-month follow-up	11.7 (7)	23.3 (14)	23.3 (14)	31.7 (19)	10.0 (6)
Arousal management (Tactical breathing)					
Post-training	4.2 (4)	22.1 (21)	28.4 (27)	33.7 (32)	11.6 (11)
6-month follow-up	27.5 (11)	25.0 (10)	22.5 (9)	17.5 (7)	7.5 (3)
12-month follow-up	16.7 (10)	23.3 (14)	28.3 (17)	25.0 (15)	6.7 (4)
Knowledge about resources and confidence in accessing them					
Post-training	7.4 (7)	13.7 (13)	33.7 (32)	31.6 (30)	13.7 (13)
6-month follow-up	17.5 (7)	15.0 (6)	45.0 (18)	20.0 (8)	2.5 (1)
12-month follow-up	16.7 (10)	26.7 (16)	38.3 (23)	15.0 (9)	3.3 (2)
"Shield, sense, support" (leadership only)					
Post-training	29.5 (28)	18.9 (18)	21.1 (20)	22.1 (21)	8.4 (8)
6-month follow-up	47.5 (19)	12.5 (5)	27.5 (11)	10.0 (4)	2.5 (1)
12-month follow-up	40.0 (24)	25.0 (15)	20.0 (12)	11.7 (7)	3.3 (2)
Mental health continuum model					
Post-training	8.4 (8)	16.8 (16)	28.4 (27)	33.7 (32)	12.6 (12)
6-month follow-up	17.5 (7)	17.5 (7)	37.5 (15)	17.5 (7)	10.0 (4)
12-month follow-up	11.7 (7)	26.7 (16)	35.0 (21)	18.3 (11)	8.3 (5)
The pocket card					
Post-training	12.6 (12)	27.4 (26)	20.0 (19)	26.3 (25)	13.7 (13)
6-month follow-up	37.5 (15)	20.0 (8)	15.0 (6)	20.0 (8)	7.5 (3)
12-month follow-up	41.7 (25)	23.3 (14)	20.0 (12)	8.3 (5)	6.7 (4)
The aide memoire (leadership booklet)					
Post-training	38.9 (37)	18.9 (18)	18.9 (18)	17.9 (17)	5.3 (5)
6-month follow-up	50.0 (20)	22.5 (9)	25.0 (10)	2.5 (1)	0.0 (0)
12-month follow-up	53.3 (32)	18.3 (11)	18.3 (11)	8.3 (5)	1.7 (1)

(95% CI [-0.50, -0.14]); however, the changes were non-significant at both the 6-month follow-up,  $d = -0.140$  (95% CI [-0.37, -0.00]), and the 12-month follow-up,  $d = -0.190$  (95% CI [-0.46, 0.01]).

### Open-ended participant responses

Immediately following the R2MR training, most participants reported the following themes when asked questions from the R2MR-Specific questionnaire; when asked, "What did you find most helpful?": improved understanding of mental health (in themselves and co-workers), the use of real-world examples (i.e. video testimonials and instructor stories), group discussions, how to communicate about mental health, how to access resources for mental health, how to reduce stigma, and how to use the different R2MR tools (e.g. the Mental Health Continuum Model). When asked to provide examples about what participants remembered about R2MR, most participants reported the Mental Health Continuum

**Table 6.** Mental health stigma questions.

	Strongly disagree		Disagree		Neither agree nor disagree		Agree		Strongly agree	
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
I understand how mental health problems present in the workplace										
Post-training	1.1 (1)	3.2 (3)	18.9 (18)	65.3 (62)	11.6 (11)					
6-month follow-up	0.0 (0)	5.0 (2)	15.0 (6)	72.5 (29)	7.5 (3)					
12-month follow-up	0.0 (0)	1.7 (1)	8.3 (5)	78.3 (47)	11.7 (7)					
I plan to seek help for my mental health problems when needed										
Post-training	0.0 (0)	4.2 (4)	17.9 (17)	58.9 (56)	18.9 (18)					
6-month follow-up	0.0 (0)	10.0 (4)	12.5 (5)	57.5 (23)	20.0 (8)					
12-month follow-up	3.3 (2)	3.3 (2)	20.0 (12)	55.0 (33)	18.3 (11)					
When I am concerned I ask my colleagues how they are doing										
Post-training	1.1 (1)	3.2 (3)	9.5 (9)	62.1 (59)	24.2 (23)					
6-month follow-up	5.0 (2)	0.0 (0)	15.0 (6)	57.5 (23)	22.5 (9)					
12-month follow-up	1.7 (1)	1.7 (1)	11.7 (7)	68.3 (41)	16.7 (10)					
I talk about mental health issues as freely as physical health issues										
Post-training	8.4 (8)	20.0 (19)	18.9 (18)	44.2 (42)	8.4 (8)					
6-month follow-up	10.0 (4)	10.0 (4)	25.0 (10)	40.0 (16)	15.0 (6)					
12-month follow-up	6.7 (4)	28.3 (17)	25.0 (15)	31.7 (19)	8.3 (5)					
I understand management practices that promote the performance and well being of all employees										
Post-training	2.1 (2)	7.4 (7)	24.2 (23)	53.7 (51)	12.6 (12)					
6-month follow-up	5.0 (2)	17.5 (7)	30.0 (12)	42.5 (17)	5.0 (2)					
12-month follow-up	6.7 (4)	13.3 (8)	28.3 (17)	43.3 (26)	8.3 (5)					



**Table 7.** Multilevel models for dependent measures from baseline to 12-month follow-up.

Predictor	Fixed effects		Random Effects	
	<i>b</i>	SE	Variance	SE
<b>DASS-21 depression</b>				
Intercept	3.84**	0.41	10.56***	9.79***
12-month	0.17	0.21		
6-month	0.01	0.65		
<b>DASS-21 anxiety</b>				
Intercept	2.62**	0.24	4.32	5.27**
12-month	-0.63	0.52		
6-month	0.07	0.66		
<b>DASS-21 stress</b>				
Intercept	5.75**	0.35	9.45	9.43
12-month	-0.54	0.76		
6-month	-0.24	0.92		
<b>MAKS</b>				
Intercept	46.50**	0.36	5.74	10.08**
12-month	-0.06	0.73		
6-month	0.16	0.85		
<b>PCL-5</b>				
Intercept	13.84**	1.13	44.39	155.49**
12-month	0.97	2.70		
6-month	1.86	2.49		
<b>AUDIT</b>				
Intercept	4.17**	0.24	1.38	6.95**
12-month	-0.19	0.57		
6-month	-0.14	0.39		
<b>UWES-9</b>				
Intercept	32.67**	0.73	34.63	32.47
12-month	-1.09	1.93		
6-month	0.41	1.80		
<b>BRS</b>				
Intercept	2.94**	0.03	0.07	0.02
12-month	0.03	0.73		
6-month	-0.02	0.08		
<b>OMSWA</b>				
Intercept	2.03**	0.04	0.07	0.15**
12-month	-0.09	0.09		
6-month	-0.07	0.07		
Post-training	-0.14	0.06		

Note: SE = standard error; DASS-21 = Depression Anxiety Stress Scales 21-item; PCL-5 = Posttraumatic Stress Disorder Checklist-5; AUDIT = Alcohol Use Disorders Identification Test; UWES-9 = Utrecht Work Engagement Scale 9-item; BRS = Brief Resilience Scale; MAKS = Mental Health Knowledge Schedule; OMSWA = Open Minds Survey of Workplace Attitudes. Random effects were estimated using a variance components covariance matrix.

\* $p \leq .05$ ; \*\* $p \leq .01$ ; \*\*\* $p \leq .001$ .

Model, as well as visual examples. When asked, “What skills will be the most challenging to implement and why”, most participants reported the following themes: acceptance of when you need help, how to approach co-workers, and getting others to take mental health seriously (i.e. peer support, reducing stigma). When asked, “What skills will be the easiest to implement and why?”, most participants reported the following themes: active listening (i.e. empathetic listening), being more approachable and supportive for co-workers, self-awareness, tactical breathing, and goal setting.

At the 6-month follow-up, when asked, “What did you find most helpful?” most participants reported the following themes: using the Mental Health Continuum, increased knowledge and awareness about mental health, and coping strategies. A few participants specifically reported that following R2MR they were able to recognize the severity of their

own mental health issues and sought out help. When asked to provide examples about what participants remembered about R2MR, most participants reported the Mental Health Continuum, the importance of addressing mental health stigma, and how to be empathetic and supportive toward co-workers. A few participants specifically reported being unable to remember any examples of what they learned from the R2MR training. When asked, “What skills will be the most challenging to implement and why?”, most participants reported similar themes to the post-training questionnaire (i.e. how to approach co-workers, particularly for fear of a defensive reaction or denial of the issue), as well as self-care in times of heightened stress and increased deadlines. When asked, “What skills will be the easiest to implement and why?” most participants reported similar themes to the post-training questionnaire (i.e. empathetic listening, being more approachable and supportive toward co-workers, self-awareness, tactical breathing, and goal setting).

At the 12-month follow-up, when asked, “What did you find most helpful?” most participants reported the following themes: increased awareness, understanding, and communication about mental health, the Mental Health Continuum Model, learning how to use a common language to discuss mental health concerns, and how to reduce stigma surrounding mental health issues. A few participants reported being unable to identify anything as helpful, commenting that the material was too basic for the intended audience. When asked to provide examples about what participants remembered about R2MR, most participants reported the Mental Health Continuum, tactical breathing techniques, self-talk, and goal-setting. When asked, “What skills will be the most challenging to implement and why?”, most participants reported similar themes to the previous questionnaires, and noted that they have difficulty balancing work expectations with mental health awareness (i.e. being able to take a mental health day, or feeling judged by other co-workers when unable to meet deadlines due to mental health concerns), as well as difficulty implementing the goal setting skill. When asked, “What skills will be the easiest to implement and why?” most participants reported similar themes to the previous questionnaires. Some participants emphasized that even a year later the training had facilitated more open dialogs and easier communication thanks to the mental health continuum.

## Discussion

The current study assessed the impact of the MHCC R2MR training at pre-training, post-training, 6-month follow-up, and 12-month follow-up on several factors in a sample of Canadian municipal police officers. We assessed for quantified changes based on responses to several validated questionnaires. We also thematically assessed open-ended responses to the training questions.

The multilevel analytic results suggested there were no statistically significant changes in symptoms of depression, anxiety, stress, posttraumatic stress, and alcohol use, at any follow-up time point, following the training intervention. There were very small increases in depression and PTSD at 6 and 12 months, small increases in anxiety at 6 months, and small decreases in anxiety at 12 months, as well as small decreases in reported stress and reported alcohol use at both 6 and 12 months. The absence of significant changes in symptoms of depression, anxiety, stress, alcohol use, or PTSD are not necessarily surprising, given that the R2MR program is not intended as a treatment, but as a tool for providing education, increasing resilience, and reducing stigma.

The multilevel analytic results also suggested that no statistically significant changes in mental health knowledge, resilience, or workplace engagement occurred following the R2MR program. There were nonetheless small increases in mental health knowledge at 6 months and in resilience scores at 12 months. There were small increases in work engagement at 6 months, but then decreases at 12 months. Only mental health stigma was assessed at all four time points. The results of the multilevel analyses suggested significant small reductions immediately post-training, and non-significant small reductions at 6 and 12 months. The results suggest a single session of R2MR training may reduce stigma over time, but sustained reductions may require refresher training sessions.

In their own open-ended responses, participants implied the program had a greater impact than indicated by changes in the questionnaires. Immediately after the training most participants reported improved understanding of mental health, stronger skills for discussing mental health, improved clarity regarding mental health resources, lower stigma, and appreciation of the R2MR tools, particularly the Mental Health Continuum model. Perhaps importantly, the post-training assessment would not have afforded participants much time to engage with the newly presented materials and skills, so those assessments should be evaluated with caution. At the 6- and 12-month follow-ups, most participants reported the same improvements and foci, with some attributing improved interactions with their own mental health as a direct function of the training; however, some were unable to report recalling any skills specific to the training. At 12 months, some participants explicitly stated that in retrospect the material was too basic for their needs relative to their extant education; nevertheless, at one year later most still reported recalling key aspects of R2MR (i.e. Mental Health Continuum, tactical breathing techniques, self-talk, and goal-setting). At all three time points the open-ended responses to perceived difficulties focused on stigma at the individual, community, and structural levels.

Perceived helpfulness, learning, content recall, and skill confidence appeared to decline from post-training to the 12-month follow-up, suggesting that refresher sessions may be important for retention. Participants' perceived changes in themselves, their leadership, and their colleagues were less consistent, but generally indicated similarly small changes. More than half of participants reported using Goal Setting, Mental Rehearsal/Visualization, and Self Talk, *Sometimes, Often, Very Often, or Always*, at all three time points; however, without a pre-training assessment there is no way to measure the specific impact of R2MR on those skills. Other skill use (i.e. Mental Health Continuum, Tactical Breathing, Knowledge about Resources and Confidence in Accessing them, Shield, Sense, Support, the Pocket Card, the Aide Memoire) occurred more frequently post-training than at either follow-up. Among participants' who used the skills, more than half perceived the helpfulness of Goal Setting, Mental Rehearsal/Visualization, Self Talk, Tactical Breathing, Knowledge about Resources and Confidence in Accessing them, and the Mental Health Continuum, as *Moderately, Quite a bit, or Extremely* at all three time points. Other skills (i.e. Shield, Sense, Support, the Pocket Card, the Aide Memoire) were similarly perceived as helpful at post-training, but more than half of participants described them as Not at all or A little bit helpful by the 12-month follow-up. Overall, participants reported that psychoeducation, using the Mental Health Continuum, and skills for communicating about mental health were all particularly beneficial; however, participants reported concerns that they would have difficulty (1) accepting their own need for help; (2) asking for help for fear of judgment or negative consequences; and (3) being as helpful as they would want to be for colleagues with mental health concerns.

The absence of larger changes in the quantitative measures may indicate the training as delivered and used after delivery would yet benefit from additional revision; however, based on the open-ended responses, there are also several other possibilities. The length of training and the absence of training refresher courses may have been insufficient to produce larger changes (cf. Anderson, Gaetz, Statz, & Kin, 2012). The quantitative measures may have been insufficiently sensitive to change. There was an 11.5% increase in the employee and family assistance program (EFAP) costs during the calendar year that followed the R2MR training, as well as a further increase of 4.8% in the subsequent calendar year, which implies the training might have increased use; however, there is no way to clarify a specific causal relationship or delineate the impact of inflation and the data are not available to compare the increases to prior years. There may also have been an unaccounted for expectancy effect. There may have been a ceiling effect, minimizing room for further improvement, and driven by practices specific to the police agency (e.g. leadership, support systems, training, social norms), growing public education and awareness regarding mental health, and positive results of broad anti-stigma campaigns. In any case, more research appears necessary to understand how best to continue supporting mental health.

## Limitations

The current study has several limitations that offer direction for future research. First, our responses were based on anonymous self-report, which always allows for biased responding, erroneous responding, and missing data. Concerns about stigma and possible identifiability may also have impacted participant reports (e.g. Halpern, Gurevich, Schwartz, & Brazeau, 2009; Henderson, Van Hasselt, Leduc, & Couwels, 2016; Karaffa & Koch, 2016). Relatedly, in the absence of diagnostic interviews assessments of symptoms and skills, as well as absent assessment of objective behavioral indicators, the current results may not replicate and may not reflect the full impact of the training program. Future researchers should consider using diagnostic assessment interviews instead of relying entirely on self-report screening tools. Second, participants were not assessed for how often they reviewed the R2MR materials, nor were they required to review such materials, which means knowledge and skill acquisition was focused on a single session of training. There is growing meta-analytic evidence that brief interventions can produce behavior changes with small to moderate effect sizes (e.g. (Aveyard, Begh, Parsons, & West, 2012; Sagherian, Huedo-Medina, Pellowski, Eaton, & Johnson, 2016; Sullivan, Tetrault, Braithwaite, Turner, & Fiellin, 2011) and similar evidence specifically for resilience (Leppin et al., 2014; Robertson et al., 2015); however, programs that are longer and that are directed toward people with specific problems or issues can be expected to produce larger outcomes. There is also evidence that skills are enhanced when programs involve repeated skill review and ongoing training (Anderson et al., 2012). Future researchers should consider engaging training refreshers to assess for the incremental impact of additional training.

Third, only mental health stigma was assessed at all four time points because the training was not expected to produce an imminent change in symptoms; nevertheless, given the immediacy of impact in mental health stigma, future researchers may want to assess for similar immediate improvements in symptoms as a result of training. Fourth, the quantified results based on the self-report measures appear to contrast the open-ended responses provided by participants; specifically, the relatively small quantified changes do not reflect

participant comments that the program was perceived as beneficial. The disparity may be the result of gaps in measurement, participant perceptual biases, or implicit demand characteristics. Future researchers should carefully consider the assessment tools for evaluating program impact and, where possible, include quantitative, qualitative, and objective behavioral measures, such as changes in EFAP usage. Fifth, participants were trained by trainers using the MHCC adaptation of R2MR; accordingly, there is no way to assess the impact of the modification, whether the results would be robust across training from other organizations (e.g. the DND Canadian Armed Forces), across other populations (e.g. other PSP, military), or with other variants of R2MR (e.g. adaptations of R2MR for PSP by organizations other than MHCC, such as the recent DND Canadian Armed Forces adaptation for all public safety personnel of the most recent version of R2MR). Future researchers should assess for the impact of such differences on outcomes associated with R2MR training. Sixth, changes to stigma may be dependent on cultural changes within the policing context; as such, measurable indicators of change (e.g. increased early help-seeking and reduced long-term health costs) can reasonably be expected to require sustained dedicated effort over several years with demonstrable results being evidenced slowly over time. If such expectations are true, investments in additional interventions and longitudinal research will be required to create and evaluate such changes.

## Conclusions

The current results suggest that the R2MR program adapted by MHCC and delivered to a municipal police force was able to produce effects generally consistent with previous research results for single session resiliency interventions. Participants were able to recall R2MR components 12 months after training. On the self-report measures, participants did not report significant changes in mental health symptoms, resilience, or work engagement, but did report small increases in mental health knowledge and small temporary decreases in stigma; in contrast, the open-ended participant responses indicated that most found the training helpful for increasing mental health awareness, understanding, and communication skills, as well as helping to reduce stigma by correcting erroneous beliefs about mental health and perceptions of consequences for accessing mental health care (Karaffa & Koch, 2016), which may increase help seeking. In this context, researching the R2MR program delivered by MHCC, which is a brief intervention using cognitive behavioral therapy style skills developed for a broad audience, has provided important results; nevertheless, PSP researchers and trainers should explore the contemporary DND adaptation of R2MR, as well as continue pursuing opportunities to improve evidence-informed cognitive behavioral therapy style training programs, intervention programs, and implementation processes in support of PSP resilience and mental health.

## Acknowledgments

The research could not have been conducted without the tremendous support of the Regina Police Service, particularly from Alissa Sullivan, the EFAP Health & Safety Coordinator.

## Disclosure statement

No potential conflict of interest was reported by the authors.



## Funding

R. N. Carleton's research is supported in part by the Canadian Institutes of Health Research (CIHR) through a New Investigator Award [grant number FRN: 285489].

## ORCID

R. Nicholas Carleton  <http://orcid.org/0000-0002-6083-8935>

Julia E. Mason  <http://orcid.org/0000-0002-6063-5230>

Kadie Hozempa  <http://orcid.org/0000-0003-0458-4616>

## References

- Adams, G. A., & Buck, J. (2010). Social stressors and strain among police officers: It's not just the bad guys. *Criminal Justice and Behavior*, *37*, 1030–1040. <https://doi.org/10.1177/0093854810374282>
- Anderson, G. S., Gaetz, M., Statz, C., & Kin, B. (2012). CPR skill retention of first aid attendants within the workplace. *Prehospital and Disaster Medicine*, *27*, 312–318. <https://doi.org/10.1017/S1049023X1200088X>
- Anderson, G. S., Litzenberger, R., & Plecas, D. (2002). Physical evidence of police officer stress. *Policing: An International Journal of Police Strategies & Management*, *25*, 399–420. <https://doi.org/10.1108/13639510210429437>
- Anderson, G. S., Vaughan, A. D., & Mills, S. (2017). Building personal resilience in paramedic students. *Journal of Community Safety & Well-Being*, *2*, 51–54.
- Anshel, M. H. (2000). A conceptual model and implications for coping with stressful events in police work. *Criminal Justice and Behavior*, *27*, 375–400. <https://doi.org/10.1177/0093854800027003006>
- Antony, M. M., Bieling, P. J., Cox, B. J., Enns, M. W., & Swinson, R. P. (1998). Psychometric properties of the 42-item and 21-item versions of the Depression Anxiety Stress Scales in clinical groups and a community sample. *Psychological Assessment*, *10*, 176–181. <https://doi.org/10.1037/1040-3590.10.2.176>
- Aveyard, P., Begh, R., Parsons, A., & West, R. (2012). Brief opportunistic smoking cessation interventions: A systematic review and meta-analysis to compare advice to quit and offer of assistance. *Addiction*, *107*, 1066–1073. <https://doi.org/10.1111/j.1360-0443.2011.03770.x>
- Blevins, C. A., Weathers, F. W., Davis, M. T., Witte, T. K., & Domino, J. L. (2015). The posttraumatic stress disorder checklist for DSM-5 (PCL-5): Development and initial psychometric evaluation. *Journal of Traumatic Stress*, *28*, 489–498. <https://doi.org/10.1002/jts.22059>
- Bohn, M. J., Babor, T. F., & Kranzler, H. R. (1995). The alcohol use disorders identification test (AUDIT): Validation of a screening instrument for use in medical settings. *Journal of Studies on Alcohol*, *56*, 423–432. <https://doi.org/10.15288/jsa.1995.56.423>
- Bovin, M. J., Marx, B. P., Weathers, F. W., Gallagher, M. W., Rodriguez, P., Schnurr, P. P., & Keane, T. M. (2016). Psychometric properties of the PTSD checklist for diagnostic and statistical manual of mental disorders-fifth edition (PCL-5) in veterans. *Psychol Assess*, *28*, 1379–1391. <https://doi.org/10.1037/pas0000254>
- Brown, J., & Campbell, E. (1994). *Stress and policing: Sources and strategies*. Chichester: Wiley.
- Carleton, R. N., Afifi, T. O., Turner, S., Taillieu, T., Duranceau, S., LeBouthillier, D. M., & Asmundson, G. J. G. (2018). Mental disorder symptoms among public safety personnel. *The Canadian Journal of Psychiatry*, *63*, 54–64. <https://doi.org/10.1177/0706743717723825>
- Carleton, R. N., Afifi, T. O., Turner, S., Taillieu, T., El-Gabalawy, R., Sareen, J., & Asmundson, G. J. G. (2017). Chronic pain among public safety personnel in Canada. *Canadian Journal of Pain*, *1*, 237–246. <https://doi.org/10.1080/24740527.2017.1410431>
- Carleton, R. N., Afifi, T. O., Turner, S., Taillieu, T., LeBouthillier, D. M., Duranceau, S., ... Asmundson, G. J. G. (in press). Suicidal ideation, plans, and attempts among public safety personnel in Canada. *Canadian Psychology/Psychologie canadienne*. <https://doi.org/10.1037/cap0000136>



- Clara, I., Cox, B. J., & Enns, M. W. (2001). Confirmatory Factor analysis of the depression–anxiety–stress scales in depressed and anxious patients. *Journal of Psychopathology and Behavioral Assessment*, 23, 61–67.
- Collins, P. A., & Gibbs, A. C. (2003). Stress in police officers: A study of the origins, prevalence and severity of stress-related symptoms within a county police force. *Occupational Medicine*, 53, 256–264. <https://doi.org/10.1093/occmed/kqg061>
- Davey, J. D., Obst, P. L., & Sheehan, M. C. (2001). It goes with the job: Officers' insights into the impact of stress and culture on alcohol consumption within the policing occupation. *Drugs-Education Prevention and Policy*, 8, 141–149. <https://doi.org/10.1080/096876301300101889>
- Evans-Lacko, S., Little, K., Meltzer, H., Rose, D., Rhydderch, D., Henderson, C., & Thornicroft, G. (2010). Development and psychometric properties of the mental health knowledge schedule. *The Canadian Journal of Psychiatry*, 55, 440–448. <https://doi.org/10.1177/070674371005500707>
- Gache, P., Michaud, P., Landry, U., Accietto, C., Arfaoui, S., Wenger, O., & Daepfen, J. B. (2005). The alcohol use disorders identification test (AUDIT) as a screening tool for excessive drinking in primary care: Reliability and validity of a French version. *Alcoholism-Clinical and Experimental Research*, 29, 2001–2007. <https://doi.org/10.1097/01.alc.0000187034.58955.64>
- Garcia, L., Nesbary, D. K., & Gu, J. (2004). Perceptual variations of stressors among police officers during an era of decreasing crime. *Journal of Contemporary Criminal Justice*, 20, 33–50. <https://doi.org/10.1177/1043986203262300>
- Gershon, R. R. M., Barocas, B., Canton, A. N., Li, X., & Vlahov, D. (2009). Mental, physical, and behavioral outcomes associated with perceived work stress in police officers. *Criminal Justice and Behavior*, 36, 275–289. <https://doi.org/10.1177/0093854808330015>
- Gloster, A. T., Rhoades, H. M., Novy, D., Klotsche, J., Senior, A., Kunik, M., & Stanley, M. A. (2008). Psychometric properties of the depression anxiety and stress scale-21 in older primary care patients. *Journal of Affective Disorders*, 110, 248–259. <https://doi.org/10.1016/j.jad.2008.01.023>
- Hakan Can, S., & Hendy, H. M. (2014). Police stressors, negative outcomes associated with them and coping mechanisms that may reduce these associations. *Police Journal*, 87(3), 167–177. <https://doi.org/10.1350/pojo.2014.87.3.676>
- Halpern, J., Gurevich, M., Schwartz, B., & Brazeau, P. (2009). What makes an incident critical for ambulance workers? Emotional outcomes and implications for intervention. *Work and Stress*, 23, 173–189. <https://doi.org/10.1080/02678370903057317>
- Hansson, L., & Markstrom, U. (2014). The effectiveness of an anti-stigma intervention in a basic police officer training programme: A controlled study. *BMC Psychiatry*, 14, 55. <https://doi.org/10.1186/1471-244x-14-55>
- Henderson, S. N., Van Hasselt, V. B., Leduc, T. J., & Couwels, J. (2016). Firefighter suicide: Understanding cultural challenges for mental health professionals. *Professional Psychology-Research and Practice*, 47, 224–230. <https://doi.org/10.1037/pro0000072>
- Houdmont, J., Randall, R., Kerr, R., & Addley, K. (2013). Psychosocial risk assessment in organizations: Concurrent validity of the brief version of the management standards indicator tool. *Work & Stress*, 27, 403–412. <https://doi.org/10.1080/02678373.2013.843607>
- Karaffa, K. M., & Koch, J. M. (2016). Stigma, pluralistic ignorance, and attitudes toward seeking mental health services among police officers. *Criminal Justice and Behavior*, 43, 759–777. <https://doi.org/10.1177/0093854815613103>
- Leontjevas, R., de Beek, W. O., Lataster, J., & Jacobs, N. (2014). Resilience to affective disorders: A comparative validation of two resilience scales. *Journal of Affective Disorders*, 168, 262–268. <https://doi.org/10.1016/j.jad.2014.07.010>
- Leppin, A. L., Bora, P. R., Tilburt, J. C., Gionfriddo, M. R., Zeballos-Palacios, C., Dulohery, M. M., & Montori, V. M. (2014). The efficacy of resiliency training programs: A systematic review and meta-analysis of randomized trials. *PLoS ONE*, 9, e111420. <https://doi.org/10.1371/journal.pone.0111420>
- Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the depression anxiety stress scales (DASS) with the beck depression and anxiety inventories. *Behaviour Research and Therapy*, 33, 335–343.

- Maguen, S., Metzler, T. J., McCaslin, S. E., Inslicht, S. S., Henn-Haase, C., Neylan, T. C., & Marmar, C. R. (2009). Routine work environment stress and PTSD symptoms in police officers. *Journal of Nervous and Mental Disease*, 197, 754. <https://doi.org/10.1097/NMD.0b013e3181b975f8> 19829204.
- Mental Health Commission of Canada. (2017). Road to mental readiness. Retrieved from <http://www.r2mr.ca/road-mental-readiness#CentralComponents>
- Millar, A. (2002). Beyond resolution of presenting issues: Clients' experiences of an in-house police counselling service. *Counselling and Psychotherapy Research*, 2, 159–166. <https://doi.org/10.1080/14733140212331384785>
- Morash, M., Kwak, D. H., & Haarr, R. (2006). Gender differences in the predictors of police stress. *Policing: An International Journal of Police Strategies & Management*, 29, 541–563. <https://doi.org/10.1108/13639510610684755>
- National Defence and the Canadian Armed Forces. (2017). Road to Mental Readiness (R2MR). Retrieved from <http://www.forces.gc.ca/en/caf-community-health-services-r2mr/index.page>
- Oliphant, R. (Chair) (2016). *Healthy minds, safe communities: Supporting our public safety officers through a national strategy for operational stress injuries*. Canada: Standing Committee on Public Safety and National Security. Retrieved from <http://www.parl.gc.ca/HousePublications/Publication.aspx?DocId=8457704&Language=E>
- Papazoglou, K., & Andersen, J. P. (2014). A guide to utilizing police training as a tool to promote resilience and improve health outcomes among police officers. *Traumatology: An International Journal*, 20, 103. <https://doi.org/10.1037/h0099394>
- Pasillas, R. M., Follette, V. M., Perumean-Chaney, S. E. (2006). Occupational stress and psychological functioning in law enforcement officers. *Journal of Police and Criminal Psychology*, 21, 41–53. <https://doi.org/10.1007/BF02849501>
- Piccinelli, M., Tessari, E., Bortolomasi, M., Piasere, O., Semenzin, M., Garzotto, N., & Tansella, M. (1997). Efficacy of the alcohol use disorders identification test as a screening tool for hazardous alcohol intake and related disorders in primary care: A validity study. *BMJ*, 314, 420–420. <https://doi.org/10.1136/bmj.314.7078.420>
- Robertson, I. T., & Cooper, C. L. (2013). Resilience. *Stress and Health: Journal of the International Society for the Investigation of Stress*, 29, 175–176. <https://doi.org/10.1002/smi.2512>
- Robertson, I. T., Cooper, C. L., Sarkar, M., & Curran, T. (2015). Resilience training in the workplace from 2003 to 2014: A systematic review. *Journal of Occupational and Organizational Psychology*, 88, 533–562. <https://doi.org/10.1111/joop.12120>
- Rodríguez-Rey, R., Alonso-Tapia, J., & Hernansaiz-Garrido, H. (2016). Reliability and validity of the brief resilience scale (BRS) spanish version. *Psychological Assessment*, 28(5), e101–e110. <https://doi.org/10.1037/pas0000191>.
- Rose, T., & Unnithan, P. (2015). In or out of the group? Police subculture and occupational stress. *Policing: An International Journal of Police Strategies & Management*, 38, 279–294. <https://doi.org/10.1108/PIJPSM-10-2014-0111>
- Sagherian, M. J., Huedo-Medina, T. B., Pellowski, J. A., Eaton, L. A., & Johnson, B. T. (2016). Single-session behavioral interventions for sexual risk reduction: A meta-analysis. *Annals of Behavioral Medicine*, 50, 920–934. <https://doi.org/10.1007/s12160-016-9818-4>
- Saunders, J. B., Aasland, O. G., Babor, T. F., Delafuente, J. R., & Grant, M. (1993). Development of the alcohol-use disorders identification test (Audit)—who collaborative project on early detection of persons with harmful alcohol-consumption. 2. *Addiction*, 88, 791–804. <https://doi.org/10.1111/J.1360-0443.1993.Tb02093.X>
- Schaufeli, W., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement*, 66, 701–716. <https://doi.org/10.1177/0013164405282471>
- Seppala, P., Mauno, S., Feldt, T., Hakonen, J., Kinnunen, U., Tolvanen, A., & Schaufeli, W. (2009). The construct validity of the utrecht work engagement scale: Multisample and longitudinal evidence. *Journal of Happiness Studies*, 10, 459. <https://doi.org/10.1007/s10902-008-9100-y>
- Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief resilience scale: Assessing the ability to bounce back. *International Journal of Behavioral Medicine*, 15, 194–200. <https://doi.org/10.1090/10705500802222972>

- Stuart, H., Chen, S. P., Christie, R., Dobson, K., Kirsh, B., Knaak, S., & Whitley, R. (2014). Opening minds in Canada: Targeting change. *The Canadian Journal of Psychiatry*, 59, 13–18. <https://doi.org/10.1177/070674371405901S05>
- Sullivan, L. E., Tetrault, J. M., Braithwaite, R. S., Turner, B. J., & Fiellin, D. A. (2011). A meta-analysis of the efficacy of nonphysician brief interventions for unhealthy alcohol use: Implications for the patient-centered medical home. *The American Journal on Addictions*, 20, 343–356. <https://doi.org/10.1111/j.1521-0391.2011.00143.x>
- Szeto, A. C. H., & Adair, M. (2016). Paramedicine and the R2MR—road to mental readiness. *Canadian Paramedicine*, 39, 18–21.
- Szeto, A. C. H., Luong, D., & Dobson, K. S. (2013). Does labelling matter?: An examination of attitudes and perceptions of labels for mental disorders. *Social Psychiatry and Psychiatric Epidemiology*, 48, 659–671. <https://doi.org/10.1007/s00127-012-0532-7>
- van der Velden, P. G., Kleber, R. J., Grievink, L., & Yzermans, J. C. (2010). Confrontations with aggression and mental health problems in police officers: The role of organizational stressors, life-events and previous mental health problems. *Psychological Trauma: Theory, Research, Practice, and Policy*, 2, 135. <https://doi.org/10.1037/a0019158>
- Volk, R. J., Steinbauer, J. R., Cantor, S. B., & Holzer, C. E. (1997). The alcohol use disorders identification test (AUDIT) as a screen for at-risk drinking in primary care patients of different racial/ethnic backgrounds. *Addiction*, 92, 197–206. <https://doi.org/10.1111/j.1360-0443.1997.tb03652.x>
- Wang, Z., Inslicht, S. S., Metzler, T. J., Henn-Haase, C., McCaslin, S. E., Tong, H., ... Marmar, C. R. (2010). A prospective study of predictors of depression symptoms in police. *Psychiatry Research*, 175, 211–216. <https://doi.org/10.1016/j.psychres.2008.11.010> 20044144
- Waters, J. A., & Ussery, W. (2007). Police stress: History, contributing factors, symptoms, and interventions. *Policing: An International Journal of Police Strategies & Management*, 30, 169–188. <https://doi.org/10.1108/13639510710753199>
- Weathers, F. W., Litz, B. T., Keane, T. M., Palmieri, P. A., Marx, B. P., & Schnurr, P. P. (2013). The PTSD checklist for DSM-5 (PCL-5). Scale available from the National Center for PTSD. Retrieved from [www.ptsd.va.gov](http://www.ptsd.va.gov)
- Wester, S. R., Arndt, D., Sedivy, S. K., & Arndt, L. (2010). Male police officers and stigma associated with counseling: The role of anticipated risks, anticipated benefits and gender role conflict. *Psychology of Men & Masculinity*, 11, 286–302. <https://doi.org/10.1037/a0019108>