

Testing different methods to optimize change in mental health service use attitudes

Findings and recommendations for the Road to Mental Readiness (R2MR) program at Basic Military Qualification

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IMPORTANT INFORMATIVE STATEMENTS

The data collected as part of this study was approved either by Defence Research and Development Canada's Human Research Ethics Board or by the Director General Military Personnel Research & Analysis' Social Science Research Review Board.

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Abstract

Background: The Road to Mental Readiness (R2MR) is a mental health education program that is currently being delivered throughout the Canadian Armed Forces (CAF) career cycle, beginning at the recruit level. At the recruit level, R2MR is delivered as a PowerPoint presentation, in a single 160-minute classroom session during Basic Military Qualification (BMQ) training. The three key objectives of R2MR, as delivered to the recruits, are: 1) to teach recruits stress management skills they can use to minimize psychological distress, 2) to improve recruits' understanding of basic mental health literacy concepts (e.g., definition of good and poor mental health), and 3) to change recruits' attitudes and intentions towards Mental Health Service Use (MHSU). DRDC Toronto has undertaken a program of research, the primary purpose of which is to test the efficacy of R2MR in achieving these three key objectives through a group Randomized Controlled Trial (gRCT). An important requirement for designing and conducting a rigorous gRCT involves determining the optimal intervention *content* and *delivery method*. Based on DRDC Toronto research on attitudes and intentions towards MHSU among CAF recruits, a number of recommendations were made to R2MR stakeholders for improving R2MR content to change recruits' MHSU attitudes and intentions. These recommendations led to the development of two different versions of the PowerPoint presentation. Version one attempted to change attitudes and intentions towards mental health service use with PowerPoint slides delivered by a former military member; version two attempted to change MHSU attitudes and intentions using a video which included a pro-help-seeking message from the Chief of the Defence Staff (CDS) and positive personal stories of MHSU in the CAF by current and former military members.

Purpose: The primary purpose of this study was to assess MHSU attitudes and intentions at two time points, prior to exposure to R2MR and approximately a month after exposure to R2MR to identify which of the two R2MR delivery methods (Video versus Slide) leads to greater change in MHSU attitudes and intentions compared to a Control (no R2MR) condition. This was a longitudinal study following the same participants over time.

Methods: Six platoons were recruited for the study. Two platoons received the version of R2MR with PowerPoint slides for changing MHSU attitudes (Slide condition). Two platoons received the version of R2MR with a video for changing MHSU attitudes and intentions (Video condition). Two additional platoons served as Controls (i.e., they did not receive R2MR). For Phase 1 of the study (Time 1), a few days before the end of the first two weeks of BMQ, when R2MR was scheduled to be administered, the platoons were presented with a 10-minute information and sign-up session. This was followed by a 60-minute mass testing session in which recruits filled out measures of MHSU attitudes and intentions. MHSU attitudes and intentions were primarily assessed with the Canadian Armed Forces Recruit Mental Health Service Use Questionnaire (CAF-R-MHSUQ), a 74-item self-report measure developed specifically to assess MHSU intentions among CAF recruits. CAF-R-MHSUQ assesses six important constructs which served as the primary outcomes measures in this study: Affective Attitudes, Instrumental Attitudes, Subjective Norms, Perceived Self-Efficacy, Perceived Control, and Intention. Around week six of the BMQ (or approximately a month after exposure to R2MR), there was a second 10-minute information and sign up-session followed by another 60 minute mass-testing session for Phase 2 of the study (Time 2). The same MHSU attitude and intention measures used in Phase 1 were administered. On Phase 2 consent forms, participants were asked to provide permission to link their data from both phases of the study; this allowed us to look at change in MHSU attitude and

intention scores over a month-long period. For the main analysis, we used mixed models to examine differences between the two different attitude change methods (Video versus Slide), as well as differences between these two experimental conditions and the no R2MR training condition (Control); we used CAF-R-MHSUQ scores at Time 2 as outcome variables while including the CAF-R-MHSUQ scores at Time 1 as independent variables. We also controlled for social desirability and current psychological functioning in the mixed models as they may affect MHSU attitudes and intentions.

Results: A total of 291 participants completed Time 1 data collection. Of those who completed Time 1, 229 participants also completed Time 2. With the exception of the Perceived Control scale, the CAF-R-MHSUQ scores were highest for the recruits in the Slide condition. With the exception of the Perceived Control and the Instrumental Attitudes scales, CAF-R-MHSUQ scores were lowest for the recruits in the Control condition. Scores for the recruits in the Video condition generally fell between the other experimental conditions. Significant differences between the Slide and the Control conditions were found for Subjective Norms and Intention scores, with results favoring the Slide condition in both cases. For Subjective Norms, scores decreased from Time 1 to Time 2 for all three experimental conditions; the smallest decrease was observed for the Slide condition. For Intention, scores increased for the Slide condition but decreased for the Video and Control conditions from Time 1 to Time 2. The effect sizes of the statistically significant differences between the Slide and the Control conditions for MHSU Subjective Norms and Intentions were around medium (Cohen's $D=0.24$ and 0.34 , respectively).

Discussion: These results indicate that recruits' perceptions of whether important others in their social network would be supportive of their MHSU (i.e., their Subjective Norms) became more negative from Time 1 to Time 2, and that this undesirable shift was smallest for the Slide condition. These results also indicate that for the Video and Control (but not Slide) conditions, recruits' intentions to use mental health services if they ever needed them (i.e., their Intentions) became weaker at Time 2 compared to Time 1. To sum, this study found evidence for a beneficial effect for R2MR using Slides, not in improving MHSU attitudes and intentions but mostly in preventing them from becoming more negative over the course of BMQ training. We discuss possible explanations for these findings, as well as implications for attitude change interventions in CAF such as R2MR.

Significance to defence and security

Attitude change is an important target in public health interventions such as R2MR. Future research on attitude change in R2MR and in similar public health interventions in CAF should explore the conditions under which attitude change may be maximized, taking into careful consideration the effects of the larger training and operational settings in which interventions are implemented.

Résumé

Contexte : Le programme d'éducation sur la santé mentale intitulé « En route vers la préparation mentale » (RVPM) est actuellement dispensé tout au long de la vie professionnelle des militaires des Forces armées canadiennes (FAC), et ce, dès leur recrutement. À ce stade, le programme comprend une présentation PowerPoint donnée au cours d'une seule séance de 160 minutes en classe dans le cadre de la formation menant à la qualification militaire de base (QMB). Les trois principaux objectifs du programme RVPM destiné aux recrues sont les suivants : 1) enseigner aux recrues les techniques de gestion du stress qu'elles peuvent employer pour réduire au minimum leur détresse psychologique; 2) améliorer chez les recrues la compréhension des notions de base sur la santé mentale (p. ex. la définition d'une bonne ou d'une piètre santé mentale); 3) modifier les attitudes et les intentions des recrues face au recours aux services de santé mentale (RSSM). RDDC Toronto a entrepris un programme de recherches dont l'objet premier consiste à évaluer l'efficacité avec laquelle le programme RVPM permet d'atteindre ces trois objectifs clés. Pour cela, les chercheurs ont utilisé un essai clinique randomisé (ECR) par grappes. Une des conditions importantes à respecter quand on conçoit et effectue un ECR par grappes de façon rigoureuse consiste à déterminer le *contenu* et la *méthode de présentation* les plus efficaces. En se fondant sur les recherches de RDDC Toronto sur les attitudes et les intentions des recrues des FAC à l'égard du RSSM, on a formulé un certain nombre de recommandations aux intervenants du programme RVPM afin d'améliorer son contenu de manière à modifier les attitudes et les intentions des recrues à l'égard du RSSM. Ces recommandations ont mené à l'élaboration de deux versions différentes de la présentation PowerPoint. La première visait à modifier les attitudes et les intentions des recrues à l'égard du RSSM au moyen de diapositives présentées par un ancien militaire. Dans la deuxième version, on tentait de les modifier au moyen d'une vidéo qui contenait un message du chef d'état-major de la Défense (CEMD) en faveur du RSSM et des témoignages personnels positifs de militaires des FAC, anciens et en service, envers le RSSM.

Objet : L'étude avait pour principal objet d'évaluer les attitudes et les intentions à l'égard du RSSM à deux points dans le temps, soit avant l'exposition au programme RVPM et environ un mois après, pour établir laquelle des deux méthodes de présentation du programme (vidéo ou diapositives) entraînait un plus grand changement dans les attitudes et les intentions face au RSSM, comparativement à un groupe témoin (aucun programme RVPM). Il s'agissait d'une étude longitudinale menée avec les mêmes participants au fil du temps.

Méthodes : Six pelotons ont participé à l'étude. Deux ont assisté à la présentation PowerPoint avec diapositives sur le programme RVPM, laquelle visait à modifier les attitudes face au RSSM (groupe Diapo). Deux autres pelotons ont regardé une vidéo ayant aussi pour objet de changer les attitudes et les intentions à l'égard du RSSM dans le cadre du programme RVPM (groupe Vidéo). Les deux derniers pelotons ont servi de groupe témoin (ils n'ont assisté à aucune séance du programme RVPM). À l'étape 1 de l'étude (1^{er} point dans le temps), quelques jours avant la fin des deux premières semaines de la formation menant à la QMB et au moment où le programme RVPM devait être présenté, les pelotons ont assisté à une séance d'information et d'inscription de 10 minutes. Celle-ci était suivie d'une séance d'examen collectif de 60 minutes au cours de laquelle les recrues ont inscrit les mesures de leurs attitudes et intentions à l'égard du RSSM. Ces attitudes et intentions ont principalement été évaluées au moyen du questionnaire destiné aux recrues des Forces armées canadiennes sur le recours aux services de santé mentale (QRSSM-R-FAC) : il s'agit d'un instrument d'auto-évaluation comportant 74 éléments élaboré expressément

pour cerner les intentions des recrues des FAC à l'égard du RSSM. Le QRSSM-R-FAC permet d'évaluer six concepts importants qui ont servi de principaux indicateurs de résultats dans cette étude : les attitudes affectives; les attitudes instrumentales; les normes subjectives; l'efficacité personnelle perçue; le contrôle perçue; l'intention. Vers la sixième semaine de la formation menant à la QMB (soit environ un mois après l'exposition au programme RVPM), une deuxième séance d'information et d'inscription de 10 minutes s'est tenue, puis une autre séance d'examen collectif de 60 minutes en vue de l'étape 2 de l'étude (2^e point dans le temps). Les mesures des attitudes et des intentions à l'égard du RSSM utilisées à l'étape 1 l'ont aussi été à l'étape 2. Dans les formulaires de consentement de l'étape 2, les participants ont été invités à donner aux chercheurs la permission d'associer les données des deux étapes de l'étude; cela leur a permis d'examiner les changements dans les scores relatifs aux attitudes et aux intentions à l'égard du RSSM au cours d'un mois. Dans l'analyse principale, nous avons employé des modèles mixtes afin d'examiner les différences entre les deux méthodes d'évaluation des changements dans les attitudes (vidéo et diapositives), ainsi que les différences entre ces deux groupes et celui n'ayant pas assisté à la séance sur le programme RVPM (groupe témoin); nous avons utilisé les scores du QRSSM-R-FAC au 2^e point dans le temps comme variables « Résultats » et avons inclus les scores du QRSSM-R-FAC au 1^{er} point dans le temps comme variables indépendantes. Nous avons aussi fait un contrôle de la désirabilité sociale et du fonctionnement psychologique courant dans les modèles mixtes, car ces éléments peuvent influencer sur les attitudes et les intentions à l'égard du RSSM.

Résultats : En tout, 291 participants ont achevé la collecte des données au 1^{er} point dans le temps; 229 d'entre eux ont aussi terminé la tâche au 2^e point dans le temps. Exception faite de l'échelle du Contrôle perçue, les scores issus du QRSSM-R-FAC ont été les plus élevés parmi les recrues ayant assisté à la présentation avec diapositives. Si l'on exclut les échelles du Contrôle perçue et des Attitudes instrumentales, les scores issus du QRSSM-R-FAC ont été les plus faibles parmi les recrues du groupe témoin. Les scores des recrues du groupe Vidéo se situaient en général entre ceux du groupe Diapo et du groupe témoin. On a constaté des différences importantes entre les participants du groupe Diapo et ceux du groupe témoin en ce qui concerne les scores relatifs aux Normes subjectives et à l'Intention, les résultats favorisant le groupe Diapo dans les deux cas. Pour ce qui est des Normes subjectives, les scores ont diminué entre le 1^{er} et le 2^e point dans le temps chez les trois groupes; on a observé la plus petite baisse chez le groupe Diapo. Les scores relatifs à l'Intention ont augmenté chez ce groupe, mais ils ont diminué chez les deux autres groupes entre le 1^{er} et le 2^e point dans le temps. L'ampleur des effets des différences importantes sur le plan statistique entre le groupe Diapo et le groupe témoin, pour ce qui est des Normes subjectives et des Intentions, relativement au RSSM, ont été à peu près moyennes [$D=0,24$ et $0,34$ (Cohen), respectivement].

Discussion : Ces résultats montrent que les perceptions des recrues quant à l'importance du soutien d'autrui au sein de leur réseau social en faveur du RSSM (leurs normes subjectives) sont devenues plus négatives entre le 1^{er} et le 2^e point dans le temps et que ce glissement indésirable a été le moins marqué chez le groupe Diapo. Ces résultats révèlent aussi que, chez le groupe Vidéo et le groupe témoin (mais non chez le groupe Diapo), les intentions des recrues quant à l'utilisation des services de santé mentale, si jamais elles en avaient besoin (leurs Intentions), étaient moins fermes au 2^e point dans le temps qu'au 1^{er} point. En résumé, cette étude a démontré que le programme RVPM avec diapositives avait un effet bénéfique, non pas en améliorant les attitudes et les intentions à l'égard du RSSM, mais surtout en empêchant sa détérioration au cours de la formation menant à la QMB. Nous examinons les explications possibles de ces constatations

et les répercussions d'interventions telles que le programme RVPM qui visent à modifier les attitudes dans les FAC.

Importance pour la défense et la sécurité

La modification des attitudes est un objectif important des interventions visant à améliorer la santé publique telles que le programme RVPM. Les recherches à venir sur les changements d'attitudes dans le cadre de ce programme et celui d'interventions semblables des FAC en santé publique devraient porter sur les conditions nécessaires pour modifier les attitudes au maximum, en tenant soigneusement compte des effets d'une formation plus étendue et du milieu opérationnel où les interventions auraient lieu.

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1 Introduction

Mental disorders such as posttraumatic stress disorder and depression are common in military populations and constitute a significant public health, force sustainability, and force effectiveness problem [1],[2]. Indeed, having an untreated mental disorder is one of the leading reasons for prematurely releasing from military service [3]. While studies find improvements in rates of mental health treatment seeking in military populations over time, it is important to note that close to half of those military members with a serious mental disorder still fail to seek treatment [4]. Closing this so-called “treatment gap” by improving attitudes and intentions towards mental health treatment can minimize the impact of mental disorders on force sustainability and force effectiveness. Therefore, military organizations are increasingly turning to workplace mental health education and resilience training initiatives to close this “treatment gap” [5].

The Road to Mental Readiness (R2MR) is a mental health education program that is currently being delivered throughout the Canadian Armed Forces (CAF) career cycle, beginning at the recruit level. At the recruit level, R2MR is delivered as a PowerPoint presentation, in a single 160-minute classroom session. The three key objectives of R2MR, as delivered to the recruits, are: 1) to teach recruits stress management skills they can use to minimize psychological distress, 2) to teach recruits basic mental health literacy concepts (e.g., definition of good and poor mental health), and 3) to change recruits’ attitudes and intentions towards Mental Health Service Use (MHSU). DRDC Toronto has undertaken a program of research, the primary purpose of which is to test the efficacy of R2MR in achieving these three key objectives through a group Randomized Control Trial (gRCT). An important requirement for designing and conducting a rigorous gRCT involves determining optimal intervention *content* and *delivery method*. In order to identify optimal content for changing recruits’ MHSU attitudes and intentions, DRDC Toronto undertook a multi-year program of research using a well-established theoretical model, the Theory of Planned Behaviour (TpB). “According to TpB, human action is guided by three kinds of considerations: beliefs about the likely outcomes of the behaviour and the evaluations of these outcomes (i.e., behavioural beliefs), beliefs about the normative expectations of others and motivation to comply with these expectations (i.e., normative beliefs), and beliefs about the presence of factors that may facilitate or impede performance of the behaviour and the perceived power of these factors (i.e., control beliefs). In their respective aggregates, behavioural beliefs produce a favorable or unfavorable attitude toward the behaviour; normative beliefs result in perceived social pressure or subjective norm, and control beliefs give rise to perceived behavioural control. In combination, attitude toward the behaviour, subjective norm, and perception of behavioural control lead to the formation of a behavioural intention. As a general rule, the more favorable the attitude and subjective norm, and the greater the perceived control, the stronger should be the person’s intention to perform the behaviour in question” [6] (p. 1). TpB has been used to predict a broad range of health behaviors, including MHSU behaviors and/or intentions [7],[8].

In the first study within our program of research [9], we identified the most common behavioral, normative, and control beliefs that may be driving MHSU attitudes, subjective norms, perceived behavioral control, and intentions among CAF NCM recruits, using standard TpB research methodology [6],[10]. Specifically, we interviewed 84 recruits one-on-one during the first few weeks of the Basic Military Qualification (BMQ), presenting them with a vignette in which they

were asked to imagine themselves experiencing common symptoms of depression and anxiety and going to see their primary care physician. The vignette ended with the recommendation from the primary care physician to consider seeking treatment from a psychiatrist, psychologist, psychotherapist, or other mental health professional at a military/civilian mental health clinic. Following the vignette, we asked three sets of standard, open-ended TpB questions to elicit behavioral, normative, and control beliefs: (1) *What do you believe are the advantages/disadvantages of seeing a mental health professional for treatment of problems such as anxiety and depression?* (2) *Are there individuals or groups who would approve/disapprove of your seeing a mental health professional for treatment of problems such as anxiety and depression?* (3) *What factors or circumstances would enable you/make it difficult for you to see a mental health professional for treatment of problems such as anxiety and depression?* Per existing guidelines for constructing a TpB questionnaire [6],[10], we used responses to these standard TpB questions in our qualitative study, and standard scaling procedures to develop the CAF-Recruit-MHSU Questionnaire (CAF-R-MHSUQ). In subsequent studies, we followed the recommended steps to establish the psychometric properties (reliability, factorial and concurrent validity) of the CAF-R-MHSUQ and made changes to its content as needed, based on emerging findings [11]. Results from this series of studies led to further refinement of the CAF-R-MHSUQ and improved psychometric properties [11]. Just as importantly, the results led to better identification of which behavioral, normative, and control beliefs among all those captured in our new scale were the most influential in driving MHSU attitudes, subjective norms, perceived behavioral control and intentions in our target population of NCM recruits. Based on these findings, R2MR course developers made changes to the R2MR content that now better targets MHSU intentions.

Despite this substantial amount of work that went into identifying the most salient behavioral, normative and control beliefs driving MHSU attitudes, subjective norms, perceived behavioral control and intentions, a number of questions remained regarding the best way to change recruits' MHSU intentions in R2MR. In military mental health interventions like R2MR, and in public health interventions that aim to change specific health behaviours through targeting salient beliefs about the behavior, the two most commonly used forms of attitude and behavior change are i) printed, or ii) videotaped messages that target the beliefs in question [12]. In R2MR, historically, MHSU attitude and intention change has been targeted through a mix of slides (mostly focused on demystifying mental health treatment) and videos of CAF members describing their personal experiences with MHSU; the emphasis historically has been on use of videos. Videotaped messages have a number of disadvantages/advantages over printed messages or messages delivered on PowerPoint slides: Videotaped messages have the disadvantage of making it difficult to *precisely capture the entirety of* salient beliefs that have been found to drive MHSU intentions and behaviors within the context of personal stories. However, videotaped personal stories by credible, relatable individuals can make key messages both more compelling and more persuasive [13],[14]. Videotaped messages also make it less likely that key messages will be omitted or contradicted, a potential problem that can lead to reduced treatment fidelity in interventions such as R2MR. In fact, in our observation of R2MR at BMQ, we found that when MHSU intentions and behaviors were targeted for change with key messages presented on slides, it was not unusual for some messages to be contradicted by R2MR instructors. For instance, we observed that a key message that “most CAF members use mental health services when they need them”—which targets normative beliefs—was oftentimes contradicted and/or diluted by personal stories of R2MR instructors that “there used to be a lot of stigma around MHSU but things are improving”.

The primary purpose of this study was to examine which of these two methods of persuasion (Video versus Slide) might work better in changing MHSU beliefs, attitudes, and intentions in R2MR, compared to a no R2MR (i.e., control) group in our target population of CAF NCM recruits. While we expected both the Video and the Slide conditions to perform better than the Control condition in changing MHSU beliefs, attitudes, and intentions, we did not make specific hypotheses regarding whether the Video or the Slide condition would work better since as outlined in the previous paragraph, each condition has strengths and weaknesses. Given the frequency with which these two methods of persuasion are used in CAF public health initiatives, the results of this study may have implications not just for R2MR but for a wide range of existing health behavior interventions.

2 Methods

2.1 Design

As can be seen in Table 1, this study was an experimental, repeated-measured design that utilized cluster assignment to assign whole platoons (rather than individual recruits) to one of three conditions: R2MR with Video, R2MR with Slides, and no R2MR (i.e., Control). Due to the operational/training requirements of the Canadian Forces Leadership and Recruit School (CFLRS), platoons could not be randomly assigned to study conditions. Instead they were sequentially assigned to the study conditions, based on their recruit training start date. Participants (i.e., platoons) were blinded to study condition; however, the R2MR instructor and research staff were not. Each platoon participated in Time 1 data collection at the beginning of week two of the BMQ. Those in the experimental conditions (Slide and Video) received R2MR training later that same week. Time 2 data collection occurred in week six of the BMQ, approximately one month after the platoons in the Video and Slide conditions received R2MR. The Control condition did not receive R2MR until after Time 2 data collection was complete.

Table 1: Study design.

Conditions	R2MR with PowerPoint slides (n=2 platoons)		R2MR with Video (n=2 platoons)		No R2MR (Control) (n=2 platoons)	
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2

2.2 Participants and procedures

All participants were CAF NCM recruits who were completing their BMQ at the CFLRS in St. Jean, Quebec between September 2014 and December 2014. Six platoons were recruited. For both phases of data collection, CFLRS Point of Contact (POC) for the study facilitated scheduling of the information and sign-up sessions. CFLRS staff escorted the potential participants to a classroom in which the information and sign-up session and the mass testing would take place. To minimize undue influence by CFLRS staff on recruit responses to questionnaires included in the study, CFLRS staff left the classroom prior to DRDC Toronto researchers initiating the information and sign-up session. Phase 1 (Time 1 data collection) was conducted during the second week of BMQ training. Recruits were given a 10-minute information/sign-up session, followed by a 60-minute testing session for those who wished to participate. During the testing session, participants completed four paper and pencil questionnaires: CAF Recruit Mental Health Service Use Questionnaire (CAF-R-MHSUQ) [11], Attitudes Towards Seeking Professional Help Short-Form (ATSPPH-SF) [15], Marlowe-Crowne Social Desirability Scale (MC-SDS) [16], and the Patient Health Questionnaire-9 (PHQ-9) [17], all described in detail below.

Phase 2 (Time 2) data collection was completed during week six of the BMQ, approximately one month after the platoons in the experimental conditions received R2MR. Once again, participants

received a 10-minute information/sign up session followed by a 60-minute testing session. Those who agreed to participate completed the same questionnaires they had received at Time 1. Those in the Control condition received R2MR in their sixth week of BMQ, after Time 2 data collection was complete.

There was withholding of information in Phase 1 (and part of Phase 2) of the study. As described above, of the six platoons recruited, two were assigned to the Control condition and would receive no R2MR training until after Phase 2 data collection was completed (i.e., their R2MR training would be delayed so that they could serve as “Controls”). During Phase 1, these two platoons were not told that they were in the Control group so as not to influence their questionnaire responses. However, once data collection was complete for these two platoons in Phase 2, they were told that they were in the Control group. Recruits in these platoons were further reassured that R2MR is an untested mental health education program with no evidence for proven efficacy, and also that they would soon receive the training before completing their BMQ training.

Responses to the questionnaires included in this study were kept confidential and were not shared with CFLRS instructors, unit leaders or other military personnel at CFLRS at the individual level. A numerical code was assigned to each participant and to his/her questionnaire packet in order to protect confidentiality. The list matching the names and the service numbers of the participants and numerical codes was kept separate from the questionnaires and was only accessible to the investigators. This list was destroyed at the end of the study and the resulting dataset only included the numerical codes assigned to each participant. The same list process was employed for the data linkage. Participants explicitly consented in Phase 2 to have their data linked to Phase 1. Completed questionnaires were kept in Excel and SPSS data files with access restricted to research personnel only and were additionally protected using electronic password options. Participants were told they were free to drop out of the study at any time without any prejudice.

2.3 Materials

2.3.1 R2MR

R2MR in its entirety is delivered as a 160-minute PowerPoint classroom presentation at BMQ. As stated previously, R2MR at BMQ has three objectives: 1) to teach stress management skills, 2) to increase basic mental health literacy, and 3) to change MHSU attitudes and intentions. R2MR uses a color-coded (green, yellow, orange, red) figure, the Mental Health Continuum Model (MHCM), to increase mental health literacy; a bidirectional arrow in the MHCM captures movement along the continuum, indicating that there is always the possibility for a return to full health and functioning; behavioral indicators under each color category in the MHCM familiarize recruits with basic mental health and mental illness concepts. To teach stress management skills, R2MR introduces four skills (i.e., the Big 4) to participants: tactical (diaphragmatic) breathing, goal setting, visualization, and self-talk. The relevance of the Big 4 skills to successful performance in BMQ is explicitly addressed and recruits are given BMQ-specific exercises after each skill is defined to help practice the skills. Following the Big 4 skills, recruits learn how to recognize the need for treatment using the MHCM; they are given information about what happens in treatment, and are provided with a list of resources available to individuals who might fall under each of the color categories in the MHCM. It is in this part of the didactic presentation

that behavioral, normative, and control beliefs that may drive MHSU intentions and behaviours are targeted. For the Slide condition, these beliefs were addressed through the use of slides only, for the Video condition, these beliefs were addressed through the use of a video created specifically for the study by R2MR stakeholders. The duration of this portion of the didactic material was specifically kept the same for both the Slide and Video conditions. The video was created using one-on-one interviews with current and former CAF members who had personally experienced MHSU. Each lengthy interview was reviewed fully by R2MR stakeholders and the research team to identify the relevant sections of the interview covering behavioral, normative, and control beliefs. The CAF members in the video represented multiple ranks and elements and both genders.

An experienced Peer Educator (PE) with more than 10 years of public speaking and teaching mental health topics (including R2MR) was used as the single instructor in the study (i.e., he was the instructor for all study conditions and platoons).

2.3.2 CAF recruit MHSU attitudes and intentions

MHSU attitudes and intentions were assessed with the CAF-R-MHSUQ [11], a 74-item self-report measure developed specifically to assess MHSU intentions among CAF recruits. In addition to assessing MHSU intentions, CAF-R-MHSUQ assesses MHSU attitudes, MHSU subjective norms, and MHSU perceived behavioral control (i.e., perceptions of how much control individuals believe they have over MHSU). CAF-R-MHSUQ also assesses beliefs, expectations, and thoughts that may be driving overall MHSU intentions, attitudes, subjective norms, and perceived behavioral control. As discussed in the Introduction, CAF-R-MHSUQ was developed based on the widely-used TpB and has shown good psychometric properties (i.e., internal consistency reliability estimates and factorial/structural validity) in multiple studies [11]. Based on our prior research [11], and factor analysis with data from the current study, the following summary scores were computed as the primary outcome variables in our study: Affective Attitudes (whether MHSU will *feel* good or bad), Instrumental Attitudes (whether MHSU *will lead to* good or bad *outcomes*), Subjective Norms (how supportive important others would be of MHSU), Perceived Self-Efficacy (whether MHSU would be easy or difficult and whether obstacles to MHSU could be overcome), Perceived Control (whether MHSU is under one's control), Intention (intentions for MHSU). We additionally looked at the Behavioral Beliefs Composite (beliefs about the likely outcomes of MHSU), the Normative Beliefs Composite (beliefs about the normative expectations of others around MHSU), and the Control Beliefs Composite (beliefs about the factors that might facilitate or impede MHSU), given that these beliefs are theorized to drive Affective and Instrumental Attitudes, Subjective Norms, Perceived Self-Efficacy and Perceived Control, and ultimately, Intentions. The reliability coefficients in the current study for Affective Attitudes, Instrumental Attitudes, Subjective Norms, Perceived Self-Efficacy, Perceived Control, and Intentions were similar to what we found in previous research: 0.73, 0.83, 0.89, 0.82, 0.76, and 0.92, respectively. Average scores, Standard Deviations (SD) and the range for these factors at Time 1 were: Mean=4.12 (SD=1.33), range=1–7 for Affective Attitudes, Mean=5.59 (SD=1.24), range=2–7 for Instrumental Attitudes, Mean=5.83 (SD=0.89), range=2–7 for Subjective Norms, Mean=5.01 (SD=1.03), range=2.33–7 for Perceived Self-Efficacy, Mean=5.67 (SD=1.03), range=2.75–7 for Perceived Control, and Mean=5.30 (SD=1.36), range=1.25–7 for Intentions. Reliability coefficients, means, SDs, and ranges were very similar at Time 2. (Reliability coefficients for the Belief Composites in TpB are not

computed given that it is possible to simultaneously hold both positive and negative behavioral/normative/and control beliefs, and consequently, beliefs within a composite are not supposed to hang together).

2.3.3 Attitudes towards seeking professional psychological help

MHSU attitudes and intentions were additionally assessed by the Attitudes Toward Seeking Professional Psychological Help Scale (ATSPPH [18]), the most commonly used, and one of the few psychometrically-tested self-report instruments assessing MHSU attitudes in the general population [19]. The short form of this instrument (ATSPPH-SF [15]) was recently tested in a study with college students, a population very similar in age to that of BMQ NCM recruits; this study found evidence for adequate reliability and criterion validity for the ATSPPH-SF [19]. Based on prior research, and factor analysis using data from the current study, the following summary scores were computed as secondary outcome variables in our study: Openness to Seeking Treatment for Emotional Problems (OSTEP) and Value and Need in Seeking Treatment (VNST). OSTEP assesses willingness/desire to seek help and beliefs about how helpful help-seeking would be; Thus OSTEP integrates both the MHSU Intentions and MHSU Instrumental Attitudes constructs from the CAF-R-MHSUQ. VNST items get at respondents' beliefs around whether seeking help-from a professional is needed or valuable, a construct not measured by the CAF-R-MHSUQ. The reliability coefficients in the current study for these two factors were similar to what we found in previous research: 0.75 and 0.72 for OSTEP and VNST, respectively. Average scores, Standard Deviations (SD) and the range for these factors were: Mean=1.65 (SD=0.71), Range=0–3 for OSTEP at Time 1; and Mean=1.58 (SD=0.68), Range=0–3 for VNST at Time 1. Reliability coefficients, means, SDs, and ranges were very similar at Time 2.

2.3.4 Social desirability

Social desirability can influence responses to questionnaires such as the CAF-R-MHSUQ and the ATSPPH-SF; therefore, to examine the effects of social desirability on the reporting of MHSU attitudes, a social desirability scale was included in the current study. The 33-item Marlowe-Crowne Social Desirability Scale (MC-SDS [16]) was designed to measure social desirability independent of psychopathology. It assesses whether respondents are responding truthfully or are misrepresenting themselves. A single summary score was computed for this scale.

2.3.5 Psychological functioning

Current psychological functioning, especially hopelessness and pessimism that are some of the hallmark symptoms of depression, can influence MHSU attitudes and intentions [19]. Depressive symptoms were measured using the Patient Health Questionnaire-9 (PHQ-9 [20]), a 9-item self-report measure of depression experienced in the last two weeks that assesses depressive symptoms based on the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV [21]). The reliability, validity, sensitivity, and specificity of this instrument are well-established in extant literature [17]. A single summary score was computed for this measure.

2.4 Statistical analysis

Descriptive statistics including mean and standard deviation were used to describe the distributions of the primary outcomes at both Time 1 and Time 2. Paired t-test was used to determine if there was a significant change in the primary and secondary outcomes from Time 1 to Time 2. Given that the main analysis would control for Time 1 scores and look at Time 2 scores as the outcome, the main analysis was conducted after Time 2 data collection. Since all participants were recruited in groups/platoons and the intervention (R2MR) was delivered at the group/platoon level, data were clustered (i.e., participants from the same platoons were more likely to have the same outcomes). Analyses that do not take into account this clustering effect underestimate the variance estimates and can lead to incorrect conclusions. Thus, for the main analysis, we used mixed models [22] to examine the differences between the two different attitude change methods (as captured in the two experimental conditions), as well as the differences between these two experimental conditions and the Control condition (i.e., no R2MR training). Platoons were treated as random effects to take into account the within-platoon clustering. The fixed effects of being in different study conditions were estimated to assess the magnitude and significance of the differences among study conditions in CAF-R-MHSUQ scores. In the mixed models, we used CAF-R-MHSUQ scores at Time 2 as outcome variables while including the CAF-R-MHSUQ scores at Time 1 as independent variables. We also controlled for social desirability and current psychological functioning. To help interpret the results, we computed and report generalized least squares means of these outcomes. In addition, we calculated and report effect sizes to quantify the differences in the outcomes. In the presence of results showing a significant difference between the experimental groups, we calculated Cohen's *d* [23], a measure of effect size to quantify the difference. Cohen's *d* was computed as the difference in the mean scores of two samples divided by the pooled standard deviation [24]. Effect sizes of .2 are considered "small", .5 medium, and .8 or above "large". We conducted all analyses using Statistical Analysis Software version 9.4 [25].

3 Results

After removal of one problematic platoon, a total of 291 participants completed Time 1 data collection. Platoon 7 was originally assigned to experimental condition #1 (Slides). 47 participants completed Time 1 data collection (out of a possible 54) and 33 of those completed Time 2 data collection. This platoon was removed from the study after it was discovered that both data collection time points had interfered with the recruits' meal time. Based on recruits' reports to study staff in charge of data collection (K.B.), we had concerns about the potential impact of the participant's resultant mood on the reliability of their responses; therefore, a unanimous decision was reached to replace platoon 7 with a new platoon (Platoon 4). The decision was made collectively by the research team (the principal investigator (D.F.), the study coordinator in charge of data collection (K.B.), and the biostatistician (A.L.), as well as the DRDC Human Research Ethics Committee chair, after careful consideration of both data reliability/validity and ethical concerns.

Table 2: Participation rates for Phase 1 & 2.

Platoon Number	R2MR Condition	Time 1 Participation Rate	Time 2 Participation Rate
1	Video	39/45	23/39
2	Video	46/54	39/46
3	Slides	50/55	43/50
4	Slides	49/54	34/49
5	Control	52/54	43/52
6	Control	55/56	47/55
7 (not analysed)	Slides	47/54	33/47

Experimental condition #1 (Slides) thus had a total of 99 participants from two platoons: Platoon 3 (50 participants out of a possible 55) and Platoon 4 (49 participants out of a possible 54). Experimental condition #2 (Video) had a total of 85 participants from two platoons: Platoon 1 (39 participants out of a possible 45) and Platoon 2 (46 participants out of a possible 54). The Control condition had a total of 107 participants from two platoons: Platoon 5 (52 participants out of a possible 54) and Platoon 6 (55 participants out of a possible 56).

Of those who completed Time 1, 229 participants also completed Time 2. At Time 2, experimental condition #1 (Slides) had a total of 77 participants from two platoons: Platoon 3 (43 participants out of the eligible 50 from Time 1) and Platoon 4 (34 participants out of the eligible 49 from Time 1). Experimental condition #2 (Video) had a total of 62 participants from two platoons: Platoon 1 (23 participants out of the eligible 39 from Time 1) and Platoon 2 (39 participants out of the eligible 46 from Time 1). The control condition had a total of

90 participants from two platoons: Platoon 5 (43 participants out of the eligible 52 from Time 1) and Platoon 6 (47 participants out of the eligible 55 from Time 1). Participation rates for both phases of the study are summarized in Table 2.

3.1 CAF-R-MHSUQ scale scores

Figures 1 and 2 show the six CAF-R-MHSUQ scores at Time 1 by platoon. It can be seen that the scores across different platoons were very similar as expected. At Time 1, the lowest scores were observed for Affective Attitudes, a finding in keeping with our prior research [4].

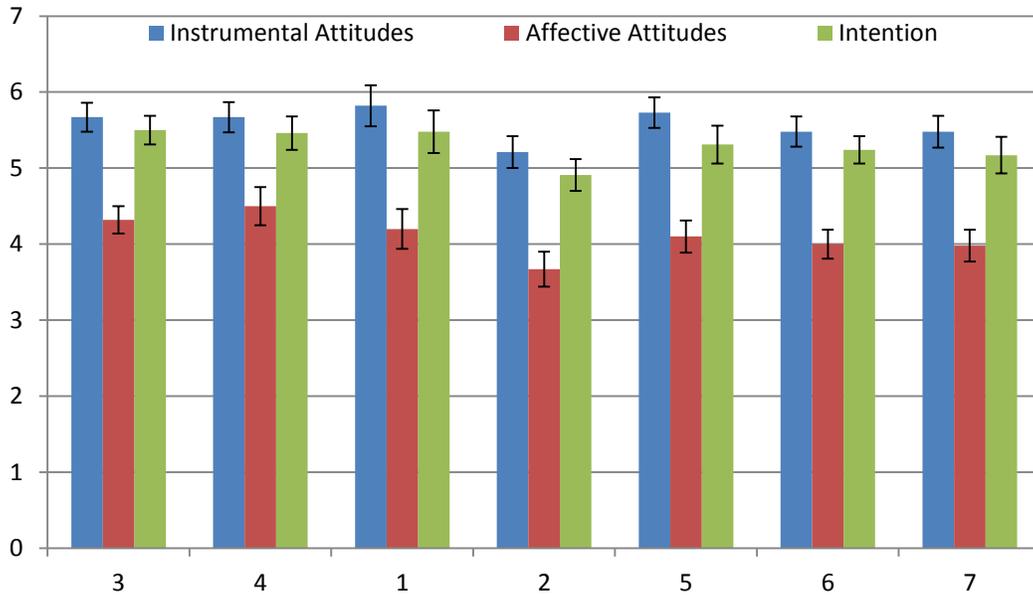


Figure 1: CAF-R-MHSUQ scores (Instrumental Attitudes, Affective Attitudes, & Intention) at T1 by platoon.

Note: All rated on a scale of 1 to 7 with higher scores indicating more favorable MHSU attitudes.

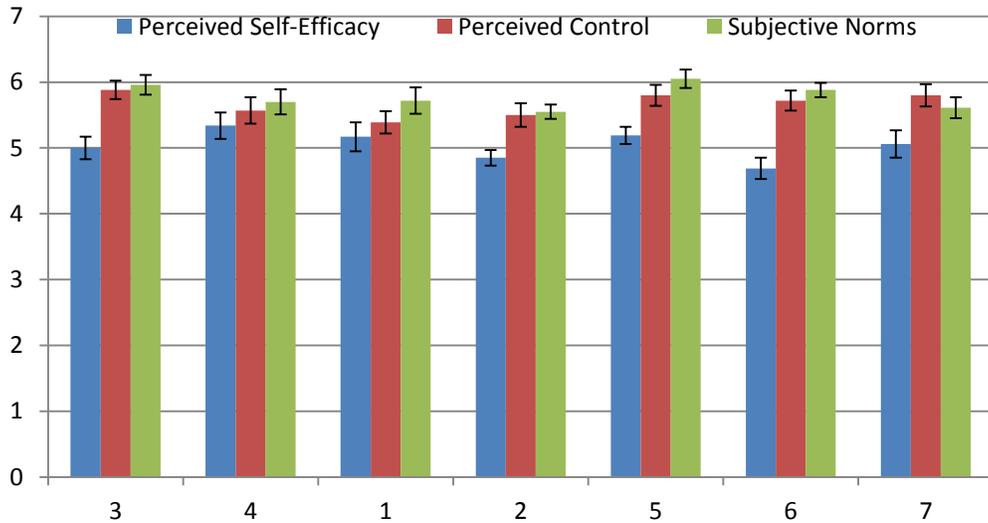


Figure 2: CAF-R-MHSUQ scores (Perceived Self-Efficacy, Perceived Control, & Subjective Norms) at T1 by platoon.

Note: All rated on a scale of 1 to 7 with higher scores indicating more favorable MHSU attitudes.

Figures 3 to 8 show the change in the six CAF-R-MHSUQ scores from Time 1 to Time 2 by platoon. Results from paired t-tests, which capture change in each of the six CAF-R-MHSUQ scores for the whole study sample, indicate an overall significant increase in Perceived Self-Efficacy and overall significant decreases in Subjective Norms and Intention. For the other three CAF-R-MHSUQ subscale scores, there were no significant changes from Time 1 to Time 2 for the whole study sample.

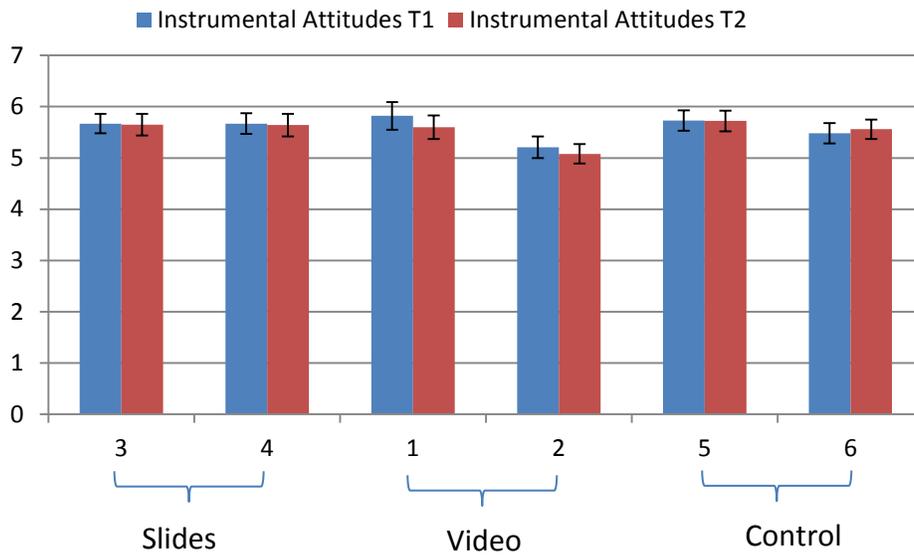


Figure 3: Change in CAF-R-MHSUQ scores (Instrumental Attitudes) from T1 to T2.

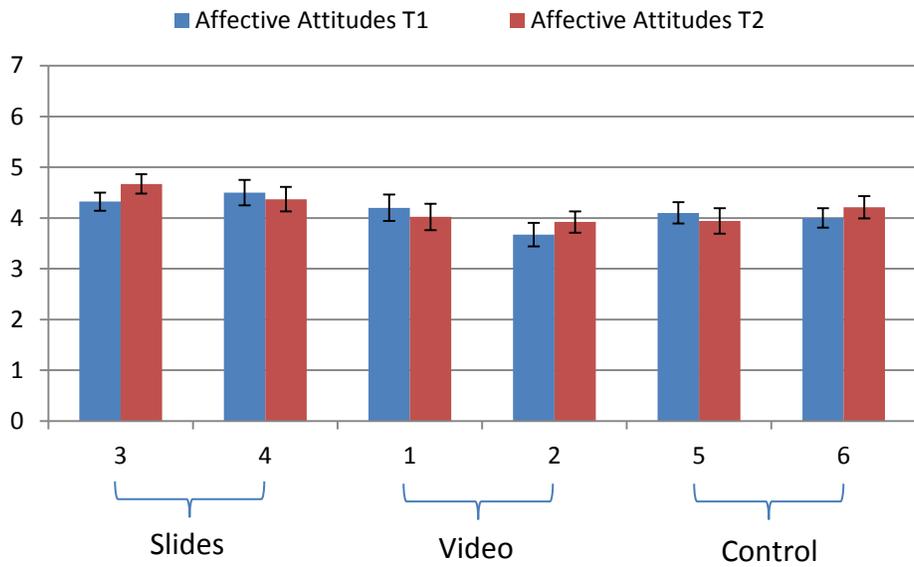


Figure 4: Change in CAF-R-MHSUQ scores (Affective Attitudes) from T1 to T2.

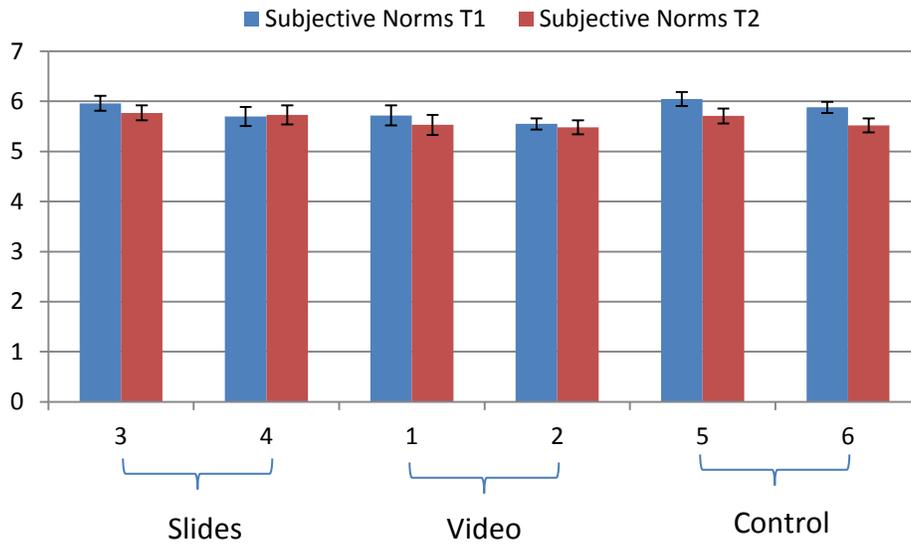


Figure 5: Change in CAF-R-MHSUQ scores (Subjective Norms) from T1 to T2.

Note: Overall, a significant decrease from T1 to T2, P-value=0.0001 from paired t-test.

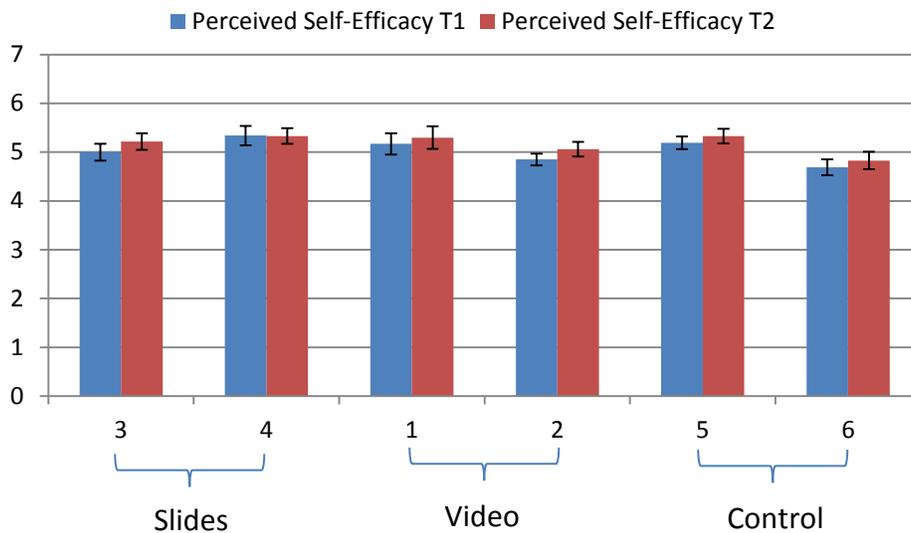


Figure 6: Change in CAF-R-MHSUQ scores (Perceived Self-Efficacy) from T1 to T2.

Note: Overall, a significant increase from T1 to T2, P-value=0.0232 from paired t-test.

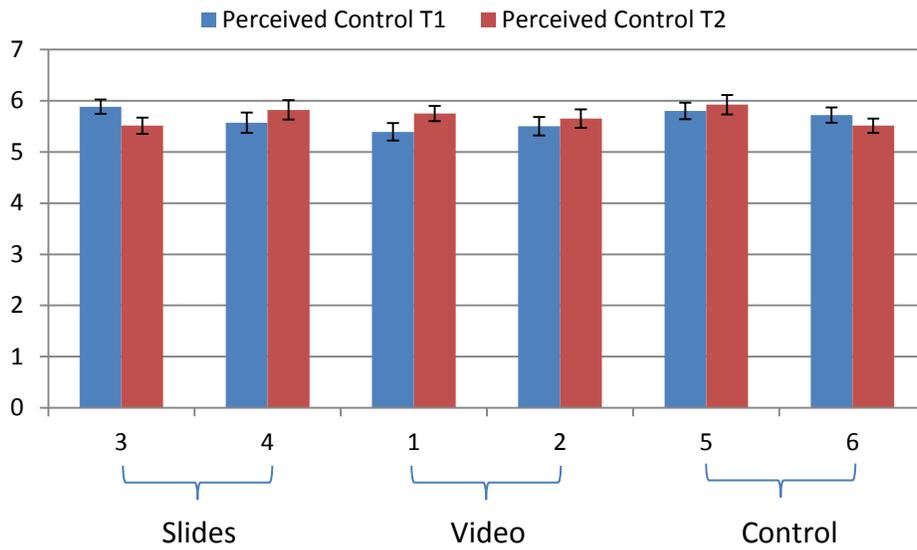


Figure 7: Change in CAF-R-MHSUQ scores (Perceived Control) from T1 to T2.

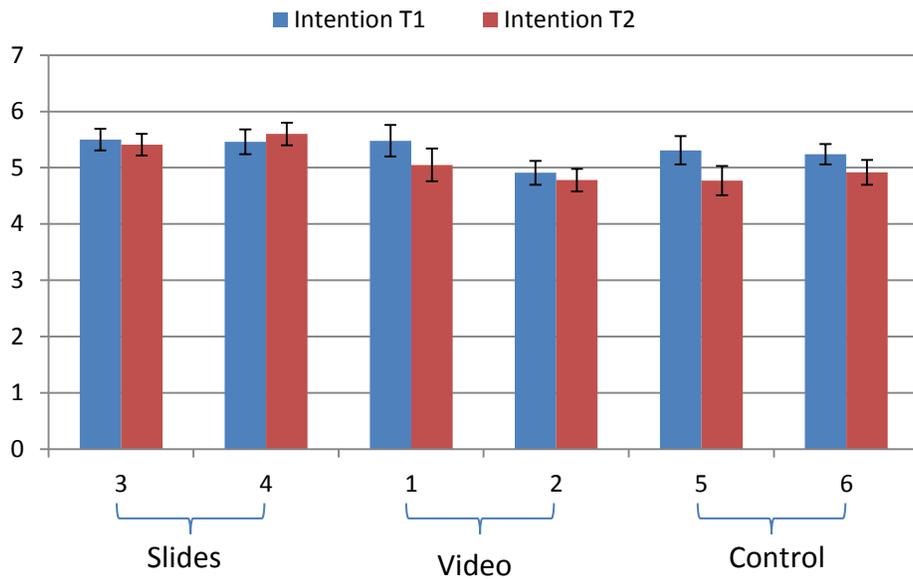


Figure 8: Change in CAF-R-MHSUQ scores (Intention) from T1 to T2.

Note: Overall, a significant decrease from T1 to T2, P-value=0.0010 from paired t-test.

Figures 9 to 14 show the generalized least squares means of the six CAF-R-MHSUQ scores calculated from mixed linear models for each of the three experimental conditions. Each figure captures the *magnitude* and the *direction* of change from Time 1 to Time 2. Positive least square means indicate an increase in scores from Time 1 to Time 2, a desirable outcome for R2MR as a public mental health intervention; negative least square means indicate a decrease in scores from Time 1 to Time 2, an undesirable outcome for R2MR as a public health intervention.

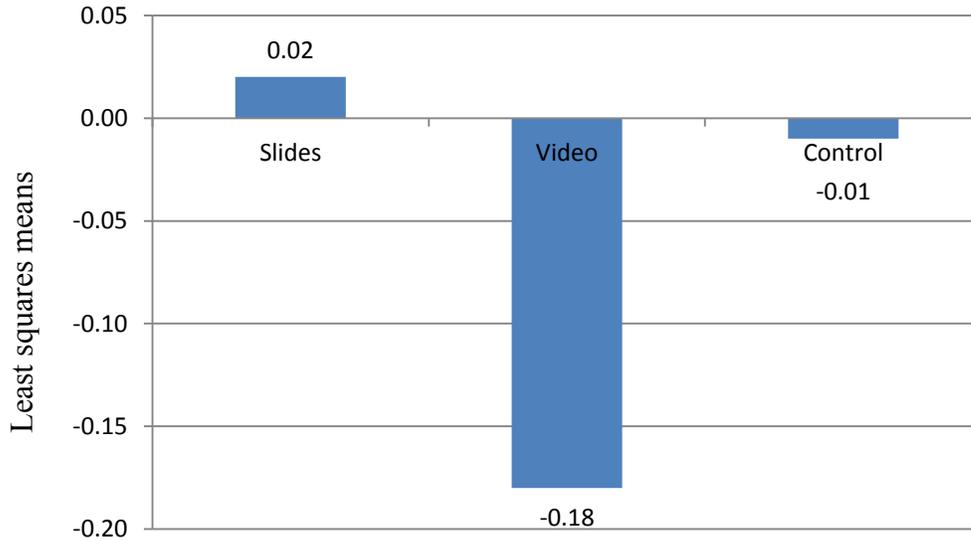


Figure 9: Results from mixed model for testing the effect of different conditions on the change from T1 to T2 (Instrumental Attitudes).

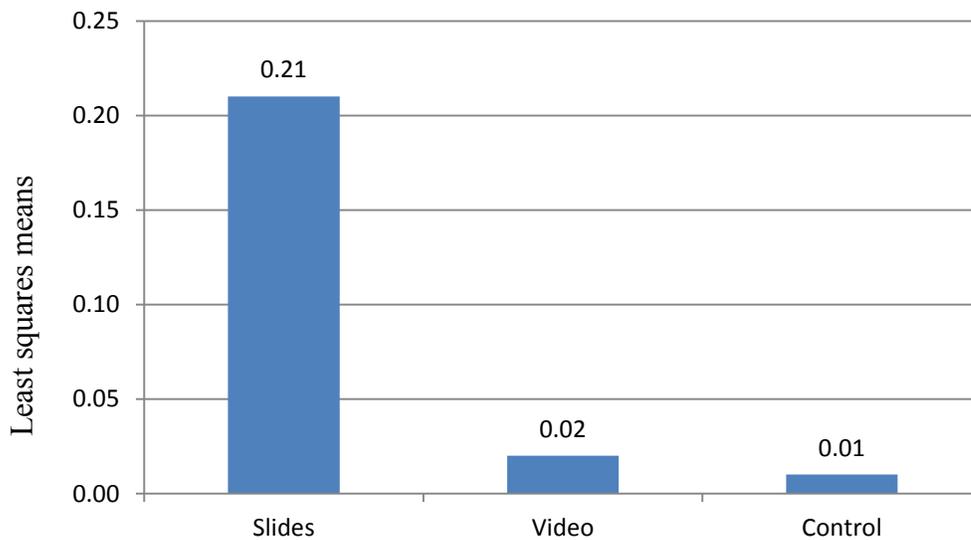


Figure 10: Results from mixed model for testing the effect of different conditions on the change from T1 to T2 (Affective Attitudes).

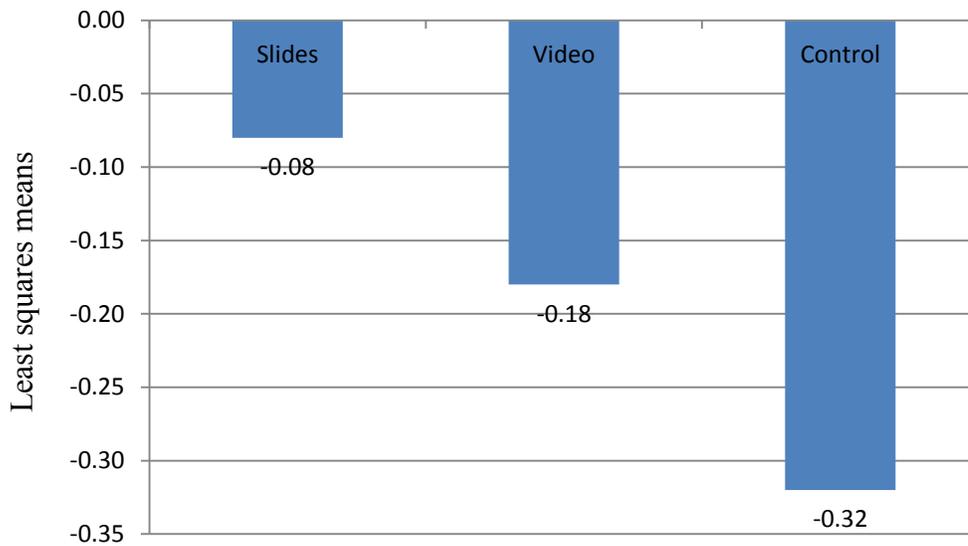


Figure 11: Results from mixed model for testing the effect of different conditions on the change from T1 to T2 (Subjective Norms).

Note: Significant difference between Slides and Control, $P=0.0429$, effect size (Cohen's $D=0.24$).

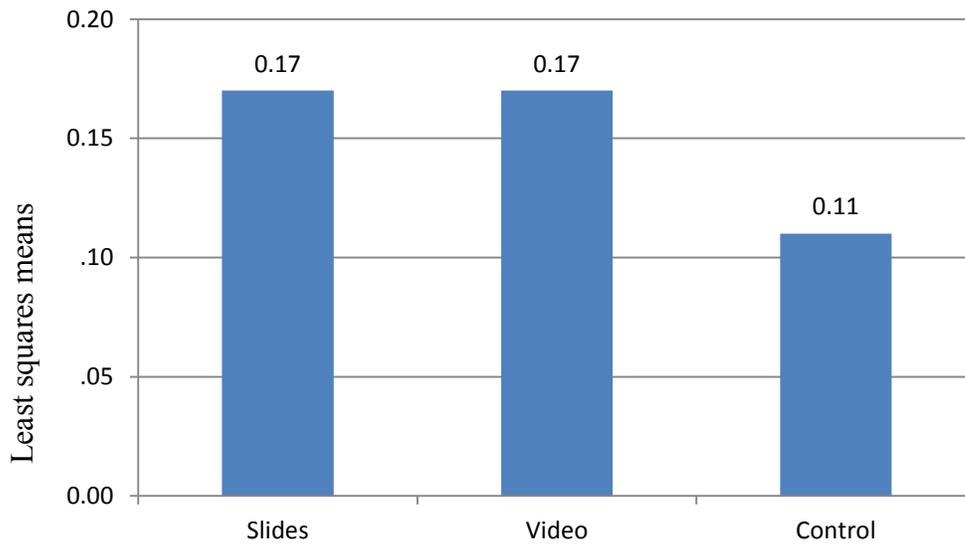


Figure 12: Results from mixed model for testing the effect of different conditions on the change from T1 to T2 (Perceived Self-Efficacy).

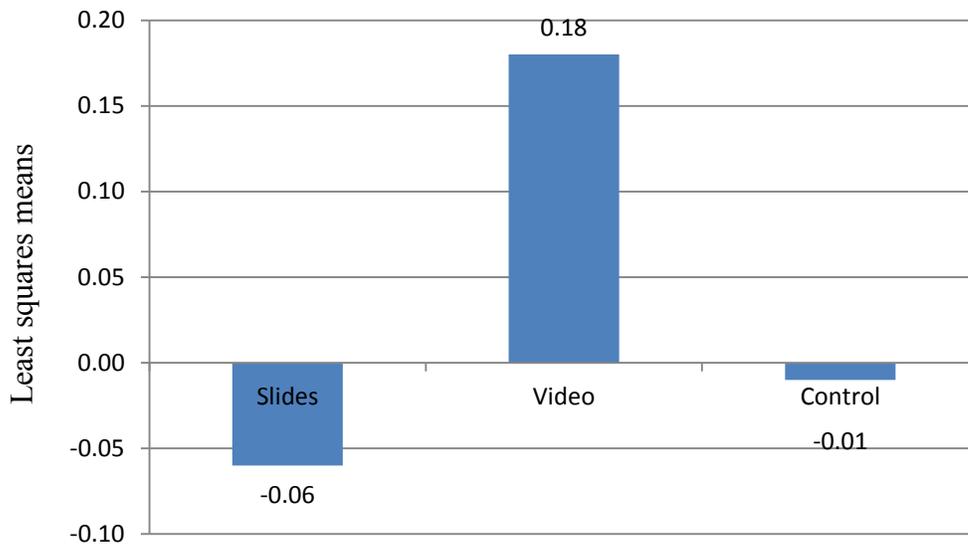


Figure 13: Results from mixed model for testing the effect of different conditions on the change from T1 to T2 (Perceived Control).

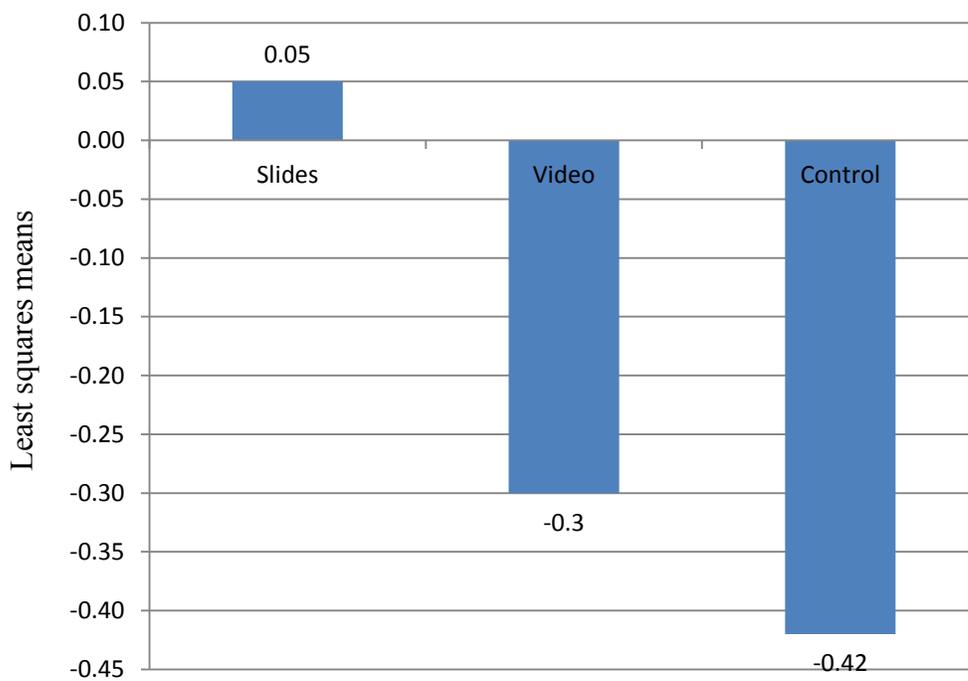


Figure 14: Results from mixed model for testing the effect of different conditions on the change from T1 to T2 (Intention).

Note: Significant difference between Slides and Control, $P=0.0012$, effect size (Cohen's $D=0.34$).

Significant differences between the Slides and the Control conditions were found for Subjective Norms and Intention scores, with results favoring the Slides condition in both cases. For Subjective Norms, scores decreased from Time 1 to Time 2 for all three experimental conditions; the smallest decrease was observed for the Slides condition. This indicates that recruits' perceptions of how supportive important others in their social network would be of their MHSU became more negative from Time 1 to Time 2 and that this undesirable shift was smallest for the Slides condition. For Intention, scores increased for the Slides condition but decreased for the Video and Control conditions from Time 1 to Time 2. This indicates that for the Video and Control (but not Slides) conditions, recruits reported weaker MHSU Intentions at Time 2 compared to Time 1. The effect sizes of the statistically significant differences between the Slides and the Control conditions for MHSU Subjective Norms and Intentions were small-to-medium (Cohen's $D=0.24$ for Subjective Norms and 0.34 for Intention).

For Instrumental Attitudes, Affective Attitudes, and Perceived Self-Efficacy, the differences between the Slide and the other two conditions were not statistically significant; however, the results were all in the same direction, favoring the Slide condition compared to the Video and Control condition. Perhaps noteworthy, the Slide condition had an increase in Affective Attitudes scores from Time 1 to Time 2 whereas the Video and Control conditions did not show the same magnitude of change. These results are important given that our research consistently shows recruits score lowest on the Affective Attitudes scale of the CAF-R-MHSUQ (i.e., how recruits expect to feel as a result of MHSU) prior to being exposed to R2MR.

The Slide condition led to the worse results than the other two conditions in only one CAF-R-MHSUQ subscale score—Perceived Control. For this scale, recruits in the Slide condition had the largest decrease from Time 1 to Time 2 whereas recruits in the Control condition had a smaller decrease; recruits in the Video group had an overall increase.

With the exception of the Perceived Control scale, the CAF-R-MHSUQ scores were highest for the recruits in the Slide condition. With the exception of the Perceived Control and the Instrumental Attitudes scales, CAF-R-MHSUQ scores were lowest for the recruits in the Control condition. Scores for the recruits in the Video condition generally fell between the other experimental conditions. Table 3 summarizes the overall pattern of findings for our primary outcomes.

Table 3: Summary of findings for CAF-MHSUQ.

Instrumental Attitudes	Slide>Control>Video
Affective Attitudes	Slide> Video=Control
Subjective Norms	Slide>Video>Control*
Perceived Self-Efficacy	Slide=Video>Control
Perceived Control	Video>Control=Slide
Intention	Slide>Video>Control*

*Note: *=statistically significant differences. Symbols “<, >, =” speak to the performance of the different study conditions in bringing about changes in the CAF-R-MHSUQ scores. For comparing non-significant differences between different conditions, we first checked if the changes in CAF-R-MHSUQ scores from Time 1 to Time 2 were in the same or different directions between different conditions, i.e., increased or decreased from Time 1 to Time 2. Conditions with increases from Time 1 to Time 2 in CAF-R-MHSUQ scores were considered as having better performance (shown with symbol “>”) than conditions with decreases in CAF-R-MHSUQ scores. If the directions of change in CAF-R-MHSUQ scores from Time 1 to Time 2 were the same between two conditions, we then checked the magnitude of their difference in the change of CAF-R-MHSUQ scores from Time 1 to Time 2. If the difference between two conditions was of an effect size (Cohen’s D) smaller than 0.05, we then considered the two conditions having equal performance (shown with symbol “=”). If the difference between the two conditions was of an effect size (Cohen’s D) equal or greater than 0.05, we then considered them different in performance.*

3.2 CAF-R-MHSUQ Belief Composite scores

Figure 15 shows the means of the three CAF-R-MHSUQ Belief Composites at Time 1 and Time 2, separately for behavioral, normative, and control beliefs. Based on the scoring of the belief items, each composite can range from a -21 to a +21, with negative scores indicating less favorable MHSU beliefs and positive scores indicating more favorable MHSU beliefs, and zero indicating a neutral stance. Looking at the whole sample, there were no statistically significant changes from Time 1 to Time 2 in paired t-tests for the three composite scores. Figures 16 to 18 show generalized least squares means of the three Belief Composites at Time 1 and Time 2, separately, from mixed linear model for each of the three experimental conditions. Overall, there were no statistically significant differences among the three experimental conditions for any of the three Belief Composite scores. However, looking at the overall pattern of results, similar to what was seen with the six CAF-R-MHSUQ scale scores, the scores for the recruits in the Slide condition were highest for two out of the three outcomes, i.e., behavioral and normative beliefs. For these two outcomes, the lowest scores were found for the recruits in the Video condition; scores for the Control condition fell in the middle. For Control beliefs, those in the Video condition had the highest scores, followed by those in the Slides and Control groups, respectively.

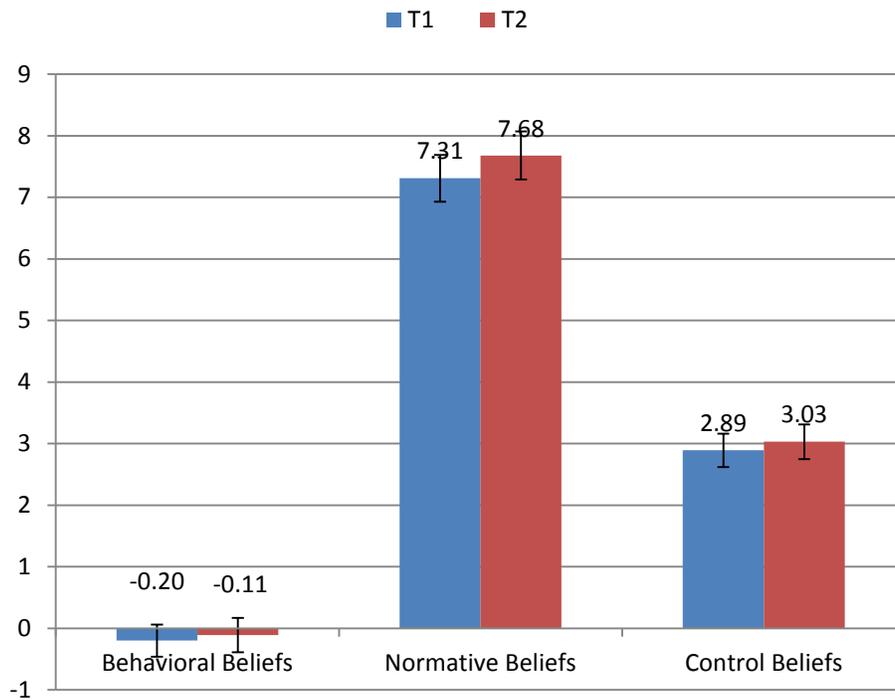


Figure 15: CAF-R-MHSUQ Belief Composites (behavioural beliefs, normative beliefs, & control beliefs) at T1 and T2.

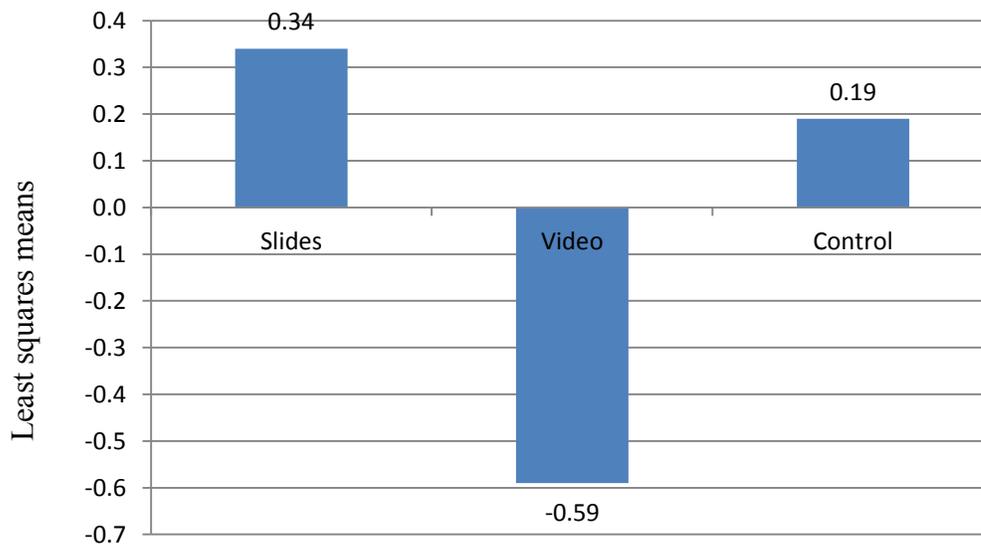


Figure 16: Results from mixed model for testing the effects of different conditions on the T1 to T2 change of beliefs (behavioural beliefs).

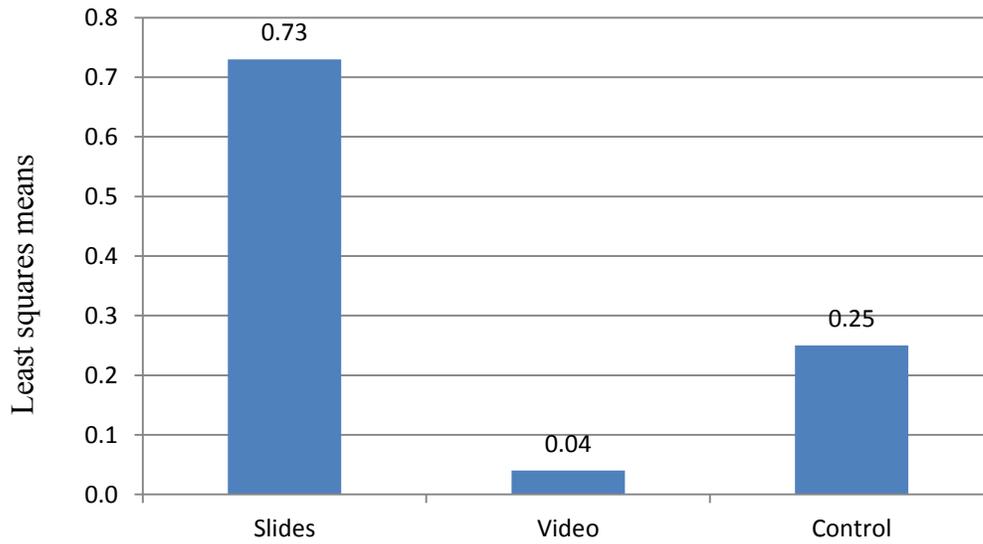


Figure 17: Results from mixed model for testing the effects of different conditions on the T1 to T2 change of beliefs (normative beliefs).

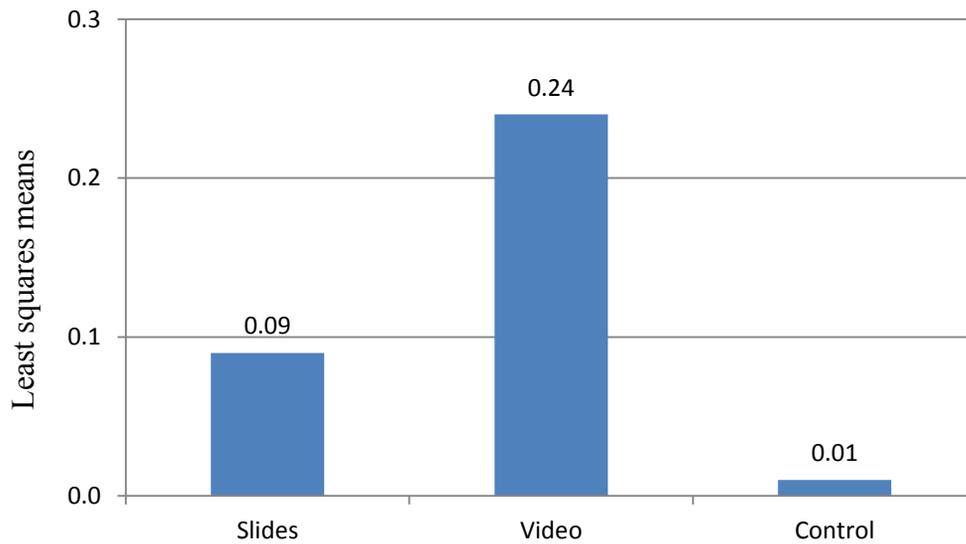


Figure 18: Results from mixed model for testing the effects of different conditions on the T1 to T2 change of beliefs (control beliefs).

3.3 ATSPPH-SF measures

Figure 19 shows the means for OSTEP and VNST at Time 1 and Time 2, for the whole study sample. Paired t-test revealed a borderline statistically significant decrease in VNST from Time 1 to Time 2. Figures 20 and 21 show the generalized least squares means for OSTEP and VNST at Time 1 and Time 2, separately, calculated from mixed linear model for each of the three experimental groups. For OSTEP, no significant difference was found among the three experimental conditions. However, similar to what was found for the CAF-R-MHSUQ Intention and Instrumental attitude scales, two scales with which it overlaps conceptually, the OSTEP scores revealed a pattern in which the Slide condition had an overall increase from Time 1 to Time 2 whereas the other two conditions had decreases. For VNST, which captures Injunctive Norms (i.e., what people should do), a construct we also measure in CAF-R-MHSUQ, all three experimental conditions had decreases from Time 1 to Time 2. Although no significant differences were found among the three experimental conditions, the results indicate that Slide and the Video conditions had very similar decreases from Time 1 to Time 2 which were in turn smaller than the decrease observed for the Control condition.

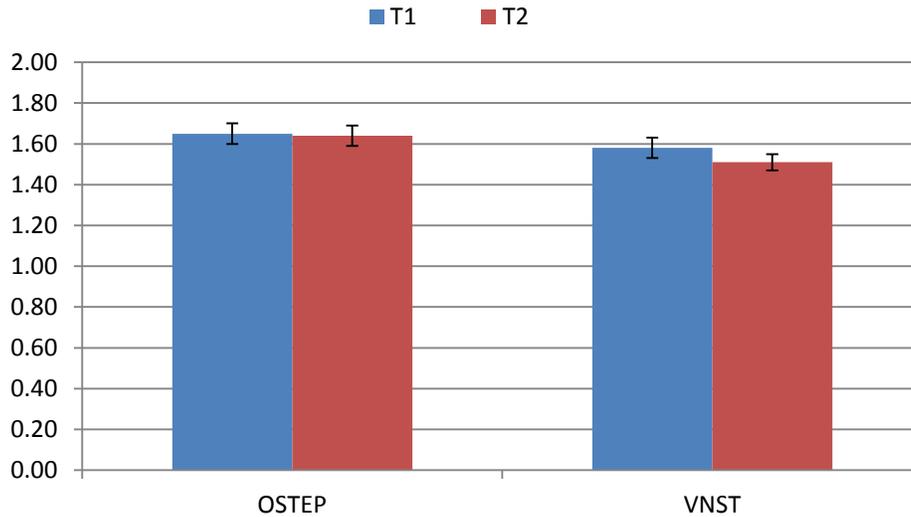


Figure 19: Means for OSTEP and VNST at T1 and T2.

Note: there is a borderline significant decrease in VNST score from T1 to T2 (P-value=0.08).

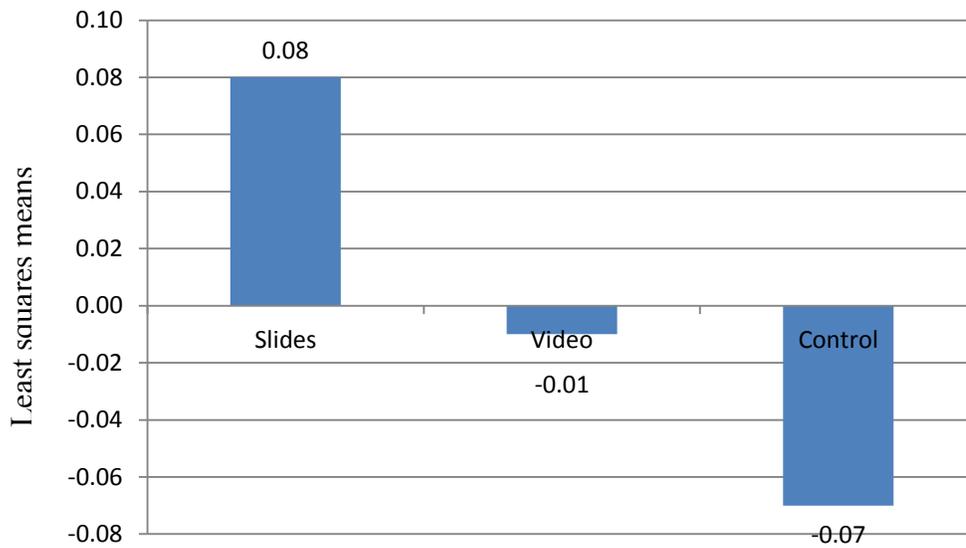


Figure 20: Results from mixed model for testing the effects of different conditions on OSTEP change from T1 to T2.

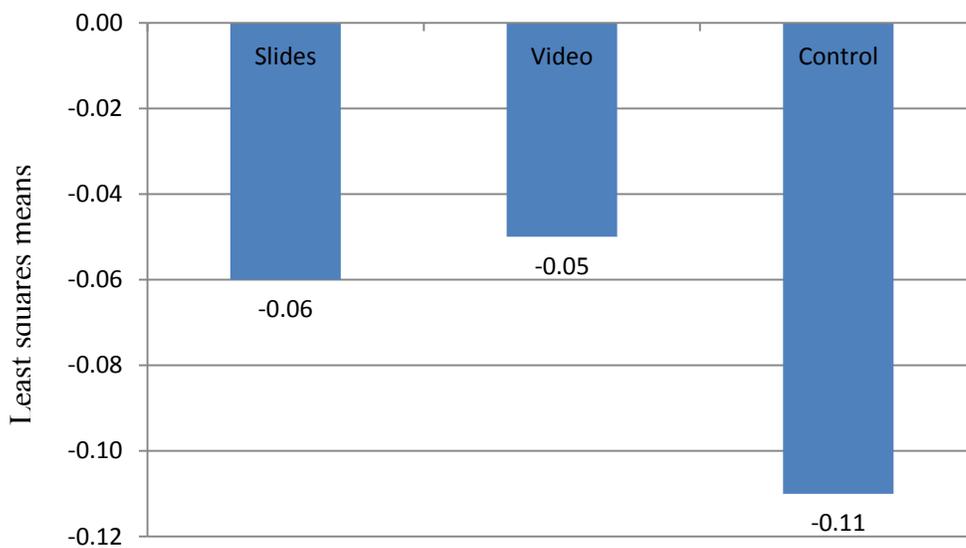


Figure 21: Results from mixed model for testing the effects of different conditions on VNST change from T1 to T2.

4 Discussion

Mental disorders impact occupational functioning and constitute a significant force sustainability and operational effectiveness problem in military populations such as the CAF. To minimize the impact of mental disorders on military members and the organization itself, it is important to ensure that those who need mental health services access them (and that they do so without significant delays). Given that among the barriers that prevent military members from accessing mental health services in a timely manner, the leading ones are attitudinal, CAF has made significant investments in mental health education to help overcome these attitudinal barriers to care [26]. Among these investments, R2MR is the primary and the most widely implemented mental health education initiative in CAF. Indeed, a key objective of R2MR is to change MHSU attitudes and intentions, starting very early in military training. Over the years, a number of delivery methods have been developed to target MHSU attitudes and intentions in R2MR, including using PowerPoint slides and videotaped personal stories. The purpose of this study was to assess MHSU attitudes and intentions at two time points, prior to exposure to R2MR and approximately a month after exposure to R2MR during BMQ, to identify which of the two most commonly used R2MR delivery methods (Video versus Slide) leads to greater change in MHSU attitudes and intentions compared to a Control (no R2MR) condition.

In this study, we found that with no exposure to R2MR (i.e., in our Control platoons), over the course of the first 2–6 weeks of the BMQ, MHSU Subjective Norms and Intentions generally became more negative. That is, with no exposure to R2MR, NCM recruits' perceptions of how supportive important others—including CAF peers and leadership—would be of MHSU became significantly more negative and similarly, with no exposure to R2MR, recruits' overall MHSU intentions became more negative from the beginning to the middle of the BMQ, suggesting that with no R2MR, recruits were less likely by week 6 to express a willingness to seek mental health care compared to week 2. With exposure to the Slide version of R2MR, these drops in Subjective Norms and Intentions were significantly reduced. Effect sizes for the reduction in these drops were in the small-to-medium range. These findings highlight the importance of the larger training and operational settings in attitude change interventions in the military and emphasize how interventions such as R2MR at times need to work against the forces operating in operational and training settings. During the BMQ, recruits are frequently told to “toughen up” explicitly by their instructors, and implicitly by being tested daily with physically and mentally taxing training activities. If the key message of the training context is to “toughen up”, it may be an uphill battle to convince recruits that they should seek mental healthcare services when needed. Although the Slide version of R2MR at BMQ explicitly addresses this seeming contradiction in one of the PowerPoint slides (“Seeking care for a mental health condition is like calling in for reinforcements. In CAF, calling for backup when needed is a sign of intelligence, professionalism and strength”) and prevents some of the worsening of attitudes and intentions over the course of the BMQ, our findings suggest that R2MR material addressing these seeming contradictions may need to be further expanded. Nevertheless, as noted by others in military psychological resilience research [29], even the small-to-moderate protective effects of R2MR (Slide condition) in preventing the worsening of MHSU attitudes and intentions, seen in the current study, are meaningful, when we consider that these effects will apply at the population level and may be additive through repeated exposure to R2MR.

In this study, we found an overall pattern of findings favoring Slides over Video messages. As previously stated in the Introduction, a key advantage of using written material (i.e., Slides in R2MR) in attitude change interventions is that key messages can be captured in a precise manner. Attitude change then follows as a result of careful consideration of the strength of the argument contained in these messages. It is more difficult to explicitly and precisely capture persuasive messages when an attempt is made to embed these messages within the context of personal stories. Furthermore, target audience members may focus more on the relatability and the credibility of the individual relaying the message in videos; and unless individuals are perceived as both relatable and credible, attitude change may not take place. Attitude formation research indeed suggests multiple routes to attitude change: the *central* route that depends on careful consideration of the strength or the logic of the arguments in key messages and the *peripheral* route that depends on the relatability, likeability, and credibility of the message source (i.e., the Elaboration Likelihood Model (ELM)) [13],[14]. It is unclear in the current study whether the videos failed because they could not precisely capture the strength of the arguments presented in the slides, or whether they failed because the individuals in the videos were not perceived to be relatable. All the individuals in the videos were perceived to be credible and likeable by the R2MR stakeholders and researchers, however, they were significantly older than our target audience of NCM recruits; as a result, it is not clear whether they were relatable. It is important that future research include pilot studies to empirically test the relatability, likability and the credibility of individuals used in attitude change videos in public health interventions such as R2MR.

While ELM suggests that “Attitude changes that result mostly from processing issue-relevant arguments (central route) will show greater temporal persistence, greater prediction of behavior, and greater resistance to counter persuasion than attitude changes that result mostly from peripheral cues” [13] (p. 21), it also recognizes that in many conditions under which the audience members lack the interest and ability to pay attention to the strength of the arguments, attitude change may depend mostly on peripheral cues. Given our previous research with NCM recruits during the first few weeks of the BMQ, we know that the physical exhaustion and sleep deprivation experienced by recruits significantly interfere with their ability to pay attention in classroom settings and lead to significantly reduced cognitive effectiveness [27]. Therefore, we recommend, similar to previous DRDC Toronto work [28], that future research on attitude change in R2MR continue to explore the conditions under which both central and peripheral routes to attitude change may be maximized, taking into careful consideration the effects of the larger training and operational settings in which attitude change interventions are implemented. Without such research it would be premature, based on this single study, to conclude that videos are not effective in attitude change interventions in CAF or that the current methods of attitude change—using Slides—are even close to optimal.

Future research should also attempt to overcome some of the limitations of the current study: first, we used a small number of platoons within each condition (Video, Slide, Control); this limits statistical power for detecting what are likely small-sized effects. Future research should try to replicate the findings of our study with a larger sample size. The larger sample size (i.e., larger number of platoons per study condition) would also address some of limitations around attrition in the current study: the average attrition rate was 22% in the current study but there was variation in attrition rates from one platoon to the other. More specifically, Platoon Number 1 in the Video condition and Platoon Number 4 in the Slide condition had higher than average attrition rates: 41% and 31%, respectively. The other four platoons had very similar attrition rates ranging from

14 to 17%. Differential attrition rates can influence the internal validity of studies but only if the attrition rate is associated with both study condition and outcome. Attrition rate was not associated with study condition or outcomes (analyses available upon request) in the current study. Nevertheless, given the natural variation in attrition rates across platoons in BMQ (i.e., due to injury, being re-coursed etc.), it is still advisable for future studies to use larger samples sizes. Second, while we tried to control for some confounders (current psychological functioning and social desirability), others (e.g., age, sex, education level) were not controlled for. Our rationale for excluding such additional confounders was that there was very little evidence in the existing literature that they would influence mental health education and resilience training outcomes. Nevertheless, it would be important for future research to collect data on additional confounders and test their effects. Future studies would also be well-advised to implement blinding and random assignment; these efforts strengthen study design and will improve confidence in results. For instance, random selection and random assignment of platoons would better rule out “regression towards the mean” as a potential explanation for any changes seen in the outcomes. We are currently planning a large group Randomized Control Trial (gRCT) study to test the efficacy of R2MR among recruits, looking at not just attitudinal but also mental health and performance outcomes. Such large gRCTs overcome many of the limitations of the current study and should provide more definitive answers regarding the efficacy of R2MR.

References

- [1] Hoge, C.W., Toboni, H.E., Messer, S.C., Bell, N., Amoroso, P., Orman, D.T. The occupational burden of mental disorders in the U.S. military: Psychiatric hospitalizations, involuntary separations, and disability. *American Journal of Psychiatry*. 2005;162:585–591.
- [2] Hoge, C.W., Messer, S.C., Engel, C.C., et al. Priorities for psychiatric research in the U.S. military: An epidemiological approach. *Military Medicine*. 2003;168:182–185.
- [3] Hoge, C.W., Lesikar, S.E., Guevara, R., et al. Mental disorders among U.S. military personnel in the 1990s: Association with high levels of health care utilization and early military attrition. *American Journal of Psychiatry*. 2002;159:1576–1583.
- [4] Quartana, P.J., Wilk, J.E., Thomas, J.L., et al. trends in mental health services utilization and stigma in U.S. soldiers from 2002 to 2011. *American Journal of Public Health*. 2014;104(9):1671–1679.
- [5] Meredith, L.S., Sherbourne, C.D., Gaillot, S.J., et al. Promoting psychological resilience in the U.S. military. Santa Monica, CA: RAND Corporation; 2011.
- [6] Ajzen, I. (2006). Constructing a Theory of Planned Behavior questionnaire. Retrieved from <http://people.umass.edu/ajzen/pdf/tpb.measurement.pdf>. (Access Date: July 22, 2014).
- [7] Britt, T.W., Bennett, E.A., Crabtree, M., et al. (2011). The theory of planned behavior and reserve component veteran treatment seeking. *Military Psychology*, 23(1), 82–96.
- [8] Schomerus, G., Matschinger, H., Angermeyer, M.C. (2009). Attitudes that determine willingness to seek psychiatric help for depression: a representative population survey applying the Theory of Planned Behaviour. *Psychological Medicine*, 20, 1–11.
- [9] Fikretoglu, D., Lam, Q., Blais, A-R. Attitudes towards mental health service use among CAF recruits during Basic Military Qualification: research findings and specific recommendations for improving the related R2MR content for recruits. DRDC Toronto-LR-2013-10055-1-1404HD0500 to Directorate General Health Services, Directorate of Mental Health, August 28, 2013.
- [10] Francis, J.J., Eccles, M.P., Johnston, M., et al. (2004). Constructing questionnaires based on the theory of planned behavior; a manual for health services researchers. Retrieved from <http://openaccess.city.ac.uk/1735/1/TPB%20Manual%20FINAL%20May2004.pdf>.
- [11] Fikretoglu, D., Blais, A-R., Lam, Q. (manuscript under revision). Development and validation of a new Theory of Planned Behavior Questionnaire for mental health service use.
- [12] Hardeman, W., Johnston, M., Johnston, D.W., Bonetti, D., Wareham, N.J., Kinmonth, A.L. (2002). Application of the Theory of Planned Behaviour change interventions: A systematic review. *Psychology and Health*, 17(2), 123–158.

- [13] Petty, R.E., Cacioppo, J.T. (1986). Communication and persuasion: central and peripheral routes to attitude change. New York: Springer-Verlag.
- [14] Petty, R.E., Cacioppo, J.T. (1986). The Elaboration Likelihood Model of persuasion. In: Berkowitz L, ed. *Advances in Experimental Social Psychology* (vol 19). San Diego, CA: Academic Press, 123–205.
- [15] Fischer, E.H., Farina, A. (1995). Attitudes toward seeking professional psychological help: a shortened form and considerations for research. *Journal of College Student Development*, 36, 368–373.
- [16] Crowne, D.P., Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology*, 24, 349–354.
- [17] Kroenke, K., Spitzer, R., Williams, J. (2001). The PHQ-9: validity of a brief depression severity measure. *Journal of General Internal Medicine*, 16, 606–613.
- [18] Fischer, E.H., Turner, J.L. (1970). Orientations to seeking professional help: development and research utility of an attitude scale. *Journal of Consulting and Clinical Psychology*, 35, 79–90.
- [19] Elhai, J.D., Schweinle, W., Anderson, S.M. (2008). Reliability and validity of the Attitude Toward Seeking Professional Psychological Help Scale Short-Form. *Psychiatry Research*, 159, 320–329.
- [20] Spitzer, R., Kroenke, K.J.W. (1999). Validation and utility of a self-report version of PRIME-MD: the PHQ Primary Care Study. *JAMA*, 282, 1737–1744.
- [21] American Psychiatric Association. (1994). *Diagnostic and Statistical Manual of Mental Disorders*. Washington, DC: Author.
- [22] Gueorguieva, R., Krystal, J.H. (2004). Move over ANOVA: progress in analyzing repeated-measures data and its reflection in papers published in the Archives of General Psychiatry. *Archives of General Psychiatry*, 61(3), 310–317.
- [23] Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd edition). Hillsdale, NJ: Lawrence Earlbaum Associates.
- [24] Rosnow, R.L., Rosenthal, R. (1996). Computing contrasts, effect sizes, and countennulls on other people's published data: General procedures for research consumers. *Psychological Methods*, 1(33), 1–340.
- [25] SAS Institute Inc. 2015. *Base SAS® 9.4 Procedures Guide*. Cary, NC: SAS Institute Inc. [computer program].
- [26] Zamorski, M., Boulos, D. (2014). The impact of the military mission in Afghanistan on mental health in the Canadian Armed Forces: a summary of research findings. *European Journal of Psychotraumatology*, (August), 5.

- [27] Muller-Gass, A., Fikretoglu, D., Beatty, E., Vartanian, O., Paul, M. (2015). Assessing daytime sleepiness and fatigue in recruits at the Canadian Forces Leadership and Recruit School. In: Toronto D, ed: DRDC Toronto.
- [28] Thompson, M.M., McCreary, D.R. (2003). Attitudes and attitude change: Implications for the OSSIS Speakers Bureau Programme. DRDC Toronto TM 2003-126.
- [29] Bliese, P.D., Adler, A.B., Castro, C.A. (2011). "Research-based preventive mental health care strategies in the military." In *Deployment psychology: Evidence-based strategies to promote mental health in the military*, edited by P.D. Bliese A.B. Adler, & C.A. Castro, 103–124. Washington, DC: American Psychological Association.

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Background: The Road to Mental Readiness (R2MR) is a mental health education program that is currently being delivered throughout the Canadian Armed Forces (CAF) career cycle, beginning at the recruit level. At the recruit level, R2MR is delivered as a PowerPoint presentation, in a single 160-minute classroom session during Basic Military Qualification (BMQ) training. The three key objectives of R2MR, as delivered to the recruits, are: 1) to teach recruits stress management skills they can use to minimize psychological distress, 2) to improve recruits' understanding of basic mental health literacy concepts (e.g., definition of good and poor mental health), and 3) to change recruits' attitudes and intentions towards Mental Health Service Use (MHSU). DRDC Toronto has undertaken a program of research, the primary purpose of which is to test the efficacy of R2MR in achieving these three key objectives through a group Randomized Control Trial (gRCT). An important requirement for designing and conducting a rigorous gRCT involves determining the optimal intervention *content and delivery method*. Based on DRDC Toronto research on attitudes and intentions towards MHSU among CAF recruits, a number of recommendations were made to R2MR stakeholders for improving R2MR content to change recruits' MHSU attitudes and intentions. These recommendations led to the development of two different versions of the PowerPoint presentation. Version one attempted to change attitudes and intentions towards mental health service use with PowerPoint slides delivered by a former military member; version two attempted to change MHSU attitudes and intentions using a video which included a pro-help-seeking message from the Chief of the Defence Staff (CDS) and positive personal stories of MHSU in the CAF by current and former military members.

Purpose: The primary purpose of this study was to assess MHSU attitudes and intentions at two time points, prior to exposure to R2MR and approximately a month after exposure to R2MR to identify which of the two R2MR delivery methods (Video versus Slide) leads to greater change in MHSU attitudes and intentions compared to a Control (no R2MR) condition. This was a longitudinal study following the same participants over time.

Methods: Six platoons were recruited for the study. Two platoons received the version of R2MR with PowerPoint slides for changing MHSU attitudes (Slide condition). Two platoons received the version of R2MR with a video for changing MHSU attitudes and intentions (Video condition). Two additional platoons served as Controls (i.e., they did not receive R2MR). For Phase 1 of the study (Time 1), a few days before the end of the first two weeks of BMQ, when R2MR was scheduled to be administered, the platoons were presented with a 10-minute information and sign-up session. This was followed by a 60-minute mass testing session in which recruits filled out measures of MHSU attitudes and intentions. MHSU attitudes and intentions were primarily assessed with the Canadian Armed Forces Recruit Mental Health Service Use Questionnaire (CAF-R-MHSUQ), a 74-item self-report measure developed specifically to assess MHSU intentions among CAF recruits. CAF-R-MHSUQ assesses six important constructs which served as the primary outcomes measures in this study: Affective Attitudes, Instrumental Attitudes, Subjective Norms, Perceived Self-Efficacy, Perceived Control, and Intention. Around week six of the BMQ (or approximately a month after exposure to R2MR), there was a second 10-minute information and sign up-session followed by another 60 minute mass-testing session for Phase 2 of the study (Time 2). The same MHSU attitude and intention measures used in Phase 1 were administered. On Phase 2 consent forms, participants were asked to provide permission to link their data from both phases of the study; this allowed

us to look at change in MHSU attitude and intention scores over a month-long period. For the main analysis, we used mixed models to examine differences between the two different attitude change methods (Video versus Slide), as well as differences between these two experimental conditions and the no R2MR training condition (Control); we used CAF-R-MHSUQ scores at Time 2 as outcome variables while including the CAF-R-MHSUQ scores at Time 1 as independent variables. We also controlled for social desirability and current psychological functioning in the mixed models as they may affect MHSU attitudes and intentions.

Results: A total of 291 participants completed Time 1 data collection. Of those who completed Time 1, 229 participants also completed Time 2. With the exception of the Perceived Control scale, the CAF-R-MHSUQ scores were highest for the recruits in the Slide condition. With the exception of the Perceived Control and the Instrumental Attitudes scales, CAF-R-MHSUQ scores were lowest for the recruits in the Control condition. Scores for the recruits in the Video condition generally fell between the other experimental conditions. Significant differences between the Slide and the Control conditions were found for Subjective Norms and Intention scores, with results favoring the Slide condition in both cases. For Subjective Norms, scores decreased from Time 1 to Time 2 for all three experimental conditions; the smallest decrease was observed for the Slide condition. For Intention, scores increased for the Slide condition but decreased for the Video and Control conditions from Time 1 to Time 2. The effect sizes of the statistically significant differences between the Slide and the Control conditions for MHSU Subjective Norms and Intentions were around medium (Cohen's $D=0.24$ and 0.34 , respectively).

Discussion: These results indicate that recruits' perceptions of whether important others in their social network would be supportive of their MHSU (i.e., their Subjective Norms) became more negative from Time 1 to Time 2, and that this undesirable shift was smallest for the Slide condition. These results also indicate that for the Video and Control (but not Slide) conditions, recruits' intentions to use mental health services if they ever needed them (i.e., their Intentions) became weaker at Time 2 compared to Time 1. To sum, this study found evidence for a beneficial effect for R2MR using Slides, not in improving MHSU attitudes and intentions but mostly in preventing them from becoming more negative over the course of BMQ training. We discuss possible explanations for these findings, as well as implications for attitude change interventions in CAF such as R2MR.

Contexte : Le programme d'éducation sur la santé mentale intitulé « En route vers la préparation mentale » (RVPM) est actuellement dispensé tout au long de la vie professionnelle des militaires des Forces armées canadiennes (FAC), et ce, dès leur recrutement. À ce stade, le programme comprend une présentation PowerPoint donnée au cours d'une seule séance de 160 minutes en classe dans le cadre de la formation menant à la qualification militaire de base (QMB). Les trois principaux objectifs du programme RVPM destiné aux recrues sont les suivants : 1) enseigner aux recrues les techniques de gestion du stress qu'elles peuvent employer pour réduire au minimum leur détresse psychologique; 2) améliorer chez les recrues la compréhension des notions de base sur la santé mentale (p. ex. la définition d'une bonne ou d'une piètre santé mentale); 3) modifier les attitudes et les intentions des recrues face au recours aux services de santé mentale (RSSM). RDDC Toronto a entrepris un programme de recherches dont l'objet premier consiste à évaluer l'efficacité avec laquelle le programme RVPM permet d'atteindre ces trois objectifs clés. Pour cela, les chercheurs ont utilisé un essai clinique randomisé (ECR) par grappes. Une des conditions importantes à respecter quand on conçoit et effectue un ECR par grappes de façon rigoureuse consiste à déterminer le *contenu* et la *méthode de présentation* les plus efficaces. En se fondant sur les recherches de RDDC Toronto sur les attitudes et les intentions des recrues des FAC à l'égard du RSSM, on a formulé un certain

nombre de recommandations aux intervenants du programme RVPM afin d'améliorer son contenu de manière à modifier les attitudes et les intentions des recrues à l'égard du RSSM. Ces recommandations ont mené à l'élaboration de deux versions différentes de la présentation PowerPoint. La première visait à modifier les attitudes et les intentions des recrues à l'égard du RSSM au moyen de diapositives présentées par un ancien militaire. Dans la deuxième version, on tentait de les modifier au moyen d'une vidéo qui contenait un message du chef d'état-major de la Défense (CEMD) en faveur du RSSM et des témoignages personnels positifs de militaires des FAC, anciens et en service, envers le RSSM.

Objet : L'étude avait pour principal objet d'évaluer les attitudes et les intentions à l'égard du RSSM à deux points dans le temps, soit avant l'exposition au programme RVPM et environ un mois après, pour établir laquelle des deux méthodes de présentation du programme (vidéo ou diapositives) entraînait un plus grand changement dans les attitudes et les intentions face au RSSM, comparativement à un groupe témoin (aucun programme RVPM). Il s'agissait d'une étude longitudinale menée avec les mêmes participants au fil du temps.

Méthodes : Six pelotons ont participé à l'étude. Deux ont assisté à la présentation PowerPoint avec diapositives sur le programme RVPM, laquelle visait à modifier les attitudes face au RSSM (groupe Diapo). Deux autres pelotons ont regardé une vidéo ayant aussi pour objet de changer les attitudes et les intentions à l'égard du RSSM dans le cadre du programme RVPM (groupe Vidéo). Les deux derniers pelotons ont servi de groupe témoin (ils n'ont assisté à aucune séance du programme RVPM). À l'étape 1 de l'étude (1^{er} point dans le temps), quelques jours avant la fin des deux premières semaines de la formation menant à la QMB et au moment où le programme RVPM devait être présenté, les pelotons ont assisté à une séance d'information et d'inscription de 10 minutes. Celle-ci était suivie d'une séance d'examen collectif de 60 minutes au cours de laquelle les recrues ont inscrit les mesures de leurs attitudes et intentions à l'égard du RSSM. Ces attitudes et intentions ont principalement été évaluées au moyen du questionnaire destiné aux recrues des Forces armées canadiennes sur le recours aux services de santé mentale (QRSSM-R-FAC) : il s'agit d'un instrument d'auto-évaluation comportant 74 éléments élaboré expressément pour cerner les intentions des recrues des FAC à l'égard du RSSM. Le QRSSM-R-FAC permet d'évaluer six concepts importants qui ont servi de principaux indicateurs de résultats dans cette étude : les attitudes affectives; les attitudes instrumentales; les normes subjectives; l'efficacité personnelle perçue; le contrôle perçu; l'intention. Vers la sixième semaine de la formation menant à la QMB (soit environ un mois après l'exposition au programme RVPM), une deuxième séance d'information et d'inscription de 10 minutes s'est tenue, puis une autre séance d'examen collectif de 60 minutes en vue de l'étape 2 de l'étude (2^e point dans le temps). Les mesures des attitudes et des intentions à l'égard du RSSM utilisées à l'étape 1 l'ont aussi été à l'étape 2. Dans les formulaires de consentement de l'étape 2, les participants ont été invités à donner aux chercheurs la permission d'associer les données des deux étapes de l'étude; cela leur a permis d'examiner les changements dans les scores relatifs aux attitudes et aux intentions à l'égard du RSSM au cours d'un mois. Dans l'analyse principale, nous avons employé des modèles mixtes afin d'examiner les différences entre les deux méthodes d'évaluation des changements dans les attitudes (vidéo et diapositives), ainsi que les différences entre ces deux groupes et celui n'ayant pas assisté à la séance sur le programme RVPM (groupe témoin); nous avons utilisé les scores du QRSSM-R-FAC au 2^e point dans le temps comme variables « Résultats » et avons inclus les scores du QRSSM-R-FAC au 1^{er} point dans le temps comme variables indépendantes. Nous avons aussi fait un contrôle de la désirabilité sociale et du fonctionnement psychologique courant dans les modèles mixtes, car ces éléments peuvent influencer sur les attitudes et les intentions à l'égard du RSSM.

Résultats : En tout, 291 participants ont achevé la collecte des données au 1^{er} point dans le temps; 229 d'entre eux ont aussi terminé la tâche au 2^e point dans le temps. Exception faite de l'échelle du Contrôle perçu, les scores issus du QRSSM-R FAC ont été les plus élevés parmi les recrues ayant assisté à la présentation avec diapositives. Si l'on exclut les échelles du Contrôle perçu et des Attitudes instrumentales, les scores issus du QRSSM-R-FAC ont été les plus faibles parmi les recrues du groupe témoin. Les scores des recrues du groupe Vidéo se situaient en général entre ceux du groupe Diapo et du groupe témoin. On a constaté des différences importantes entre les participants du groupe Diapo et ceux du groupe témoin en ce qui concerne les scores relatifs aux Normes subjectives et à l'Intention, les résultats favorisant le groupe Diapo dans les deux cas. Pour ce qui est des Normes subjectives, les scores ont diminué entre le 1^{er} et le 2^e point dans le temps chez les trois groupes; on a observé la plus petite baisse chez le groupe Diapo. Les scores relatifs à l'Intention ont augmenté chez ce groupe, mais ils ont diminué chez les deux autres groupes entre le 1^{er} et le 2^e point dans le temps. L'ampleur des effets des différences importantes sur le plan statistique entre le groupe Diapo et le groupe témoin, pour ce qui est des Normes subjectives et des Intentions, relativement au RSSM, ont été à peu près moyennes [$D=0,24$ et $0,34$ (Cohen), respectivement].

Discussion : Ces résultats montrent que les perceptions des recrues quant à l'importance du soutien d'autrui au sein de leur réseau social en faveur du RSSM (leurs normes subjectives) sont devenues plus négatives entre le 1^{er} et le 2^e point dans le temps et que ce glissement indésirable a été le moins marqué chez le groupe Diapo. Ces résultats révèlent aussi que, chez le groupe Vidéo et le groupe témoin (mais non chez le groupe Diapo), les intentions des recrues quant à l'utilisation des services de santé mentale, si jamais elles en avaient besoin (leurs Intentions), étaient moins fermes au 2^e point dans le temps qu'au 1^{er} point. En résumé, cette étude a démontré que le programme RVPM avec diapositives avait un effet bénéfique, non pas en améliorant les attitudes et les intentions à l'égard du RSSM, mais surtout en empêchant sa détérioration au cours de la formation menant à la QMB. Nous examinons les explications possibles de ces constatations et les répercussions d'interventions telles que le programme RVPM qui visent à modifier les attitudes dans les FAC.

14. KEYWORDS, DESCRIPTORS or IDENTIFIERS (Technically meaningful terms or short phrases that characterize a document and could be helpful in cataloguing the document. They should be selected so that no security classification is required. Identifiers, such as equipment model designation, trade name, military project code name, geographic location may also be included. If possible keywords should be selected from a published thesaurus, e.g., Thesaurus of Engineering and Scientific Terms (TEST) and that thesaurus identified. If it is not possible to select indexing terms which are Unclassified, the classification of each should be indicated as with the title.)

mental health training; attitude formation; attitude change