



This is a peer-reviewed, post-print (final draft post-refereeing) version of the following published document, ©The Authors, 2019. All Rights Reserved. and is licensed under All Rights Reserved license:

**Crone, Diane M, Sarkar, Mustafa, Curran, Thomas, Baker, Colin ORCID: 0000-0001-8971-2829, Hill, Denise M. ORCID: 0000-0001-8580-4048, Loughren, Elizabeth A, Dickson, Tabitha and Parker, Andrew ORCID: 0000-0001-6842-3067 (2020) Mental health first aid for the UK Armed Forces. Health Promotion International, 35 (1). pp. 132-139. doi:10.1093/heapro/day112**

Official URL: <http://dx.doi.org/10.1093/heapro/day112>

DOI: <http://dx.doi.org/10.1093/heapro/day112>

EPrint URI: <http://eprints.glos.ac.uk/id/eprint/6490>

#### **Disclaimer**

The University of Gloucestershire has obtained warranties from all depositors as to their title in the material deposited and as to their right to deposit such material.

The University of Gloucestershire makes no representation or warranties of commercial utility, title, or fitness for a particular purpose or any other warranty, express or implied in respect of any material deposited.

The University of Gloucestershire makes no representation that the use of the materials will not infringe any patent, copyright, trademark or other property or proprietary rights.

The University of Gloucestershire accepts no liability for any infringement of intellectual property rights in any material deposited but will remove such material from public view pending investigation in the event of an allegation of any such infringement.

PLEASE SCROLL DOWN FOR TEXT.

Title: Mental Health First Aid (MHFA) for the UK Armed Forces.

#### Authors

Crone, D.\*, Professor, Exercise Science, School of Health and Social Care, University of Gloucestershire, Cheltenham, GL50 4AZ, UK. Email: dcrone@glos.ac.uk

Sarkar, M., Senior Lecturer, Sport and Exercise Psychology, Department of Sport Science, Nottingham Trent University, Nottingham, NG11 8NS, UK.

Curran, T., Lecturer, Department for Health, University of Bath, Bath, BA2 7AY.

Baker, C., Research Fellow, School of Health and Social Care, University of Gloucestershire, Cheltenham, GL50 4AZ, UK.

Hill, D., Lecturer, Sport and Exercise Sciences, College of Engineering, Swansea University, SA1 8EN, UK

Loughren, E., Research Fellow, School of Health and Social Care, University of Gloucestershire, Cheltenham, GL50 4AZ, UK.

Dickson, T., Research Assistant, School of Health and Social Care, University of Gloucestershire, Gloucester, GL2 9HW, UK.

Parker, A., Professor, Sport and Christian Outreach, School of Sport and Exercise, University of Gloucestershire, Gloucester, GL2 9HW, UK.

\*Corresponding author

#### Acknowledgements

Our thanks go to the study participants and to the MHFA Armed Forces Project Steering Group including representatives from Soldiers, Sailors, Airmen and Families Association (SSAFA), Mental Health First Aid (MHFA) England, Combat Stress, Royal British Legion and the Department of Health.

#### Funding

The work was supported by Libor Funding administered by the Soldiers, Sailors, Airmen and Families Association (SSAFA).

Word count breakdown

Body of text 3984

Abstract 200

References 1088

1 table

Accepted manuscript 04 12 18

## Abstract

Education programmes in mental health literacy can address stigma and misunderstanding of mental health. This study investigated self-rated differences in knowledge, attitudes and confidence around mental health issues following participation in a bespoke Mental Health First Aid (MHFA) training course for the Armed Forces. The mixed methods approach comprised quantitative surveys and qualitative interviews. A survey, administered immediately post training ( $n=602$ ) and again at 10-months post attendance ( $n=120$ ), asked participants to rate their knowledge, attitudes and confidence around mental health issues pre and post training. Quantitative findings revealed a significant increase in knowledge, positive attitudes and confidence from the post training survey which was sustained at 10-months follow-up. Semi-structured telephone interviews ( $n=13$ ) were conducted at follow-up, 6-months post attendance. Qualitative findings revealed that participation facilitated an ‘ambassador’ type role for participants. This study is the first to have investigated the effect of Mental Health First Aid (MHFA) in an Armed Forces community. Findings show participants perceived the training to increase knowledge regarding mental health and to enhance confidence and aptitude for identifying and supporting people with mental health problems. Results suggest that such an intervention can provide support for personnel, veterans and their families, regarding mental health in Armed Forces communities.

Accepted manuscript to be reviewed

## INTRODUCTION

People with mental health problems often avoid seeking professional help from GPs, psychologists or counselling services (Oliver *et al.*, 2005). Armed Forces personnel may be particularly vulnerable and choose not to utilise support services due to concerns over career development and mental health related stigma, such as being seen as weak or unable to cope (Hoge *et al.*, 2004, Iversen *et al.*, 2011, Vogt, 2011). Given the number of Armed Forces personnel undertaking major deployments (e.g., Iraq and Afghanistan), the need for support on return, if mental health problems surface, is paramount. Estimates suggest that around 20% of service men and women have mental health problems following deployment (Sundin *et al.*, 2011). Promisingly, in the UK, the use of mental health services by Armed Forces personnel is increasing (MOD, 2015), and programmes have been implemented to improve mental health care provision for this particular community. These have demonstrated promising effects on stigma and attitudes to mental health problems (Greenberg *et al.*, 2010, MOD, 2015, Mulligan *et al.*, 2012, Murrison, 2010).

Despite the rise in the use of mental health services by Armed Forces personnel significant barriers remain, including stigma towards seeking medical care for mental health problems (Fikretoglu *et al.*, 2009, Greenberg *et al.*, 2003, Hoge, *et al.*, 2004, Schreiber and McEnany, 2015, Zinzow *et al.*, 2012). Thus the number of personnel who experience problems, yet do not seek help is unknown (Garvey Wilson *et al.*, 2009). One approach through which barriers to care can be broken down is via mental health literacy education, which encourages the active and open discussion of mental health issues (Dimoff *et al.*, 2016, Kitchener and Jorm, 2006, Warner *et al.*, 2008). Providing information on mental illness, its treatment and suitable pathways for support has been shown to increase readiness to seek help in various settings including schools, the workplace and in the general population (Aakre *et al.*, 2016, Dimoff, *et al.*, 2016, Esters *et al.*, 1998, Jorm *et al.*, 2010, Morawska *et al.*, 2013, O'Reilly *et al.*, 2011, Svensson *et al.*, 2015). Some programmes have been introduced into military environments which address mental health (Gould *et al.*, 2007, Mulligan, *et al.*, 2012), but recommendations suggest that whilst these are helpful, they should be introduced as a supplement rather than a replacement for existing support (Greenberg *et al.*, 2011).

One of the best known mental health literacy education programmes across the world is Mental Health First Aid (MHFA) (Kitchener and Jorm, 2008). MHFA seeks to improve mental health literacy, improve the identification of and access to mental health support, and reduce stigma associated with mental health issues (Hadlaczky *et al.*, 2014, Kitchener and Jorm, 2006, Kitchener and Jorm, 2008). MHFA courses have been developed for the general population in addition to specific population groups (Aakre *et al.*, 2014, Bond *et al.*, 2015, Jorm, *et al.*, 2010, Morawska, *et al.*,

2013). They have been shown to be effective in influencing changes in knowledge, attitudes and behaviours and are recommended for general health education (Hadlaczky, *et al.*, 2014). However, relatively little is known about the effect of these programmes when deployed specifically with Armed Forces communities. The bespoke MHFA course was developed following a request from UK based military charities. Modifications were made by MHFA England (the organisation that manages the programme in the UK) to tailor the existing adult course to an Armed Forces community. The existing adult course includes sessions over two days on understanding mental health, factors that affect wellbeing, practical skills to identify triggers and signs, confidence building and enhancing of interpersonal skills to guide people to further support. The modifications to this course involved the inclusion of Armed Forces specific content including cultural differences between the Armed Forces and civilian communities; specific statistics, films/media clips and case studies; information on Adjustment Disorder and an expanded Post Traumatic Stress Disorder section. Furthermore, following a pilot of the course, it was developed as a 2-day, rather than the originally proposed 1-day course, to enable depth of content and reflection. Currently only two mental health literacy programmes exist for Armed Forces; the UK MHFA programme under investigation in this study, and a US based programme.

This study evaluated the bespoke UK MHFA Armed Forces programme that was delivered across the UK during 2015 and 2016, and which targeted serving personnel, veterans and families. There is an increasing need to develop and evaluate appropriate health literacy training among Armed Forces communities to identify whether it is effective amongst this population. It is especially useful to determine whether the effects endure over time and to examine the potential for population level impact. To address these issues, we conducted a mixed methods study evaluating change over time in: (i) knowledge of mental health issues; (ii) attitudes toward mental health; and (iii) confidence to help, advise and recommend support services to people who have mental health problems. The overall objective was two fold, firstly to examine change following participation in the bespoke MHFA course and whether any changes were sustained at follow-up, and secondly, to qualitatively explore participants' lived experiences of the MHFA course and perceptions in respect to sustainability of mental health literacy, amongst members of Armed Forces community.

## **METHODS**

The mixed method design is predominantly quantitative with a small, complementary qualitative component which seeks to provide insight into the lived experience of participants (Tashakkori and Teddlie, 1998). The quantitative component included a survey, with both open and closed questions, that was administered at two time points; after the course had been completed; and at 10-months'

follow-up. The qualitative data for the study included text responses from the open-ended questions in the two surveys, and follow-up telephone interviews with attendees, 6 months after the course had been completed.

## Sample

Participants ( $n=602$ ) were members of Armed Forces communities and included veterans, serving personnel and their families, and civilian and medical staff working with Armed Forces personnel. Participants enrolled on an MHFA accredited training course and were provided with a multi-section survey at the end of their MHFA training, in a classroom setting. Participants for the qualitative component were recruited from the survey sample.

## Data collection

The bespoke survey, with both open and closed questions, was designed to capture the specific outcomes of the study, including participants' perspectives of their knowledge, attitudes and confidence in mental health literacy. The survey, administered at the end of the course, asked participants to rate their knowledge (viz. "How would you rate your knowledge of mental health issues"), attitudes (viz. "How would you rate your attitudes toward mental health?") and confidence (viz. "How would you rate your confidence to help, advise and recommend support services to people who have mental health problems") around mental health issues. As the survey was administered at the end of the course, participants were asked to rate their pre-training level at the same time as their post-training score. Responses to the knowledge, attitudes and confidence items were recorded on a 5-point Likert scale (1 = *very low/not at all useful*; 5 = *very high/very useful*). The closed (Likert-based) questions were analysed statistically, and open questions were analysed qualitatively. Demographic information (e.g., age, gender) was also collected.

For follow-up, the same survey was distributed electronically to individuals 10-months after the course had been completed, in order to establish post training changes (if any) were sustained. In total, 120 participants completed the follow-up survey and were matched using a unique identifier (date of birth and initials) that had been allocated at baseline. The qualitative aspect of the evaluation comprised of textual analysis of open-ended responses from the follow-up survey and semi-structured telephone interviews with trainees. In respect to the open-ended survey, questions included their opinions and perceived learning from the programme. For the telephone interviews, a semi-structured interview guide was developed designed to explore the perceived effect of the course on mental health literacy, knowledge and confidence, and their application. Recruitment for the telephone interviews was via the initial pre-post quantitative survey distributed at the end of the course. Participants were

asked if they would be willing to take part in a telephone interview to discuss the training, and related topics. Of those who agreed to take part ( $n=61$ ), a sample of ( $n=16$ ) participants were contacted directly (by e-mail) and invited for interview. The invited sample was chosen, using stratified random sampling (Coyne, 1997), based on having attended different courses to ensure a range of views were captured in the interviews. Participants were sent follow-up emails ( $n=2$ ) if no response had been received within 7 days of receipt. Those who responded positively ( $n=13$ ) were contacted and a date and time for interview arranged. Individual telephone interviews were conducted with  $n=13$  trainees (female  $n = 7$ ) at 6-months post follow-up. Branches of the armed forces were represented including: the Ministry of Defence, the British Army, the Royal Air Force, the Royal Navy, The Royal British Legion, in addition to private healthcare.

## Data analysis

### Survey

To test for differences in self-rated knowledge, attitudes and confidence around mental health issues, from pre-training to post-training, and from post-training to ten months follow-up, a repeated measures ANOVA with Bonferroni pairwise comparisons was performed. SPSS (Version Statistics 22) (IBM) was used for statistical analyses. A p-value of 0.05 and 95% confidence intervals (CI) that do not cross 0 were considered as statistically significant.

### Qualitative interviews and open ended survey responses

Interviews lasted between 20 - 60 minutes and were digitally recorded, transcribed verbatim and anonymized. Textual responses from the surveys and the interview transcripts were analyzed using inductive thematic analysis techniques (Braun and Clarke, 2006, Braun *et al.*, 2014, Clarke *et al.*, 2015) and managed using qualitative software (NVivo 8). Quotations are selected for illustration of key themes and divergent findings. These are identified with the participant's pseudonym and line number from the relevant transcript, or identified as 'open-ended survey response'. Ethical approval for the study was obtained from the first author's University Research Ethics committee.

## RESULTS

### Quantitative findings

In terms of self-rated knowledge the repeated measure ANOVA yielded a significant Mauchly's test, indicating that the assumption of sphericity had been violated,  $\chi^2(2) = .842, p < .001$ . This is the



assumption that the variances for the repeated measures (i.e., knowledge, attitudes, and confidence) are the same and that the covariances between the pairs of repeated measures are the same. It is a commonly violated assumption in longitudinal research, especially as the period between measurement occasions widens (Heck *et al.*, 2010). To adjust for unequal variances, the degrees of freedom in the ANOVA model were corrected using Greenhouse-Geisser estimates of sphericity ( $\epsilon = .86$ ). Results showed that there was a significant main effect of the training on self-rated knowledge of mental health issues [ $F(1.73, .51) = 247.17, p < .001$ ]. Bonferroni pairwise comparisons revealed that immediately following training, from (retrospective) pre- to post-intervention, participants showed a significant increase in their self-rated knowledge of mental health issues ( $M^{\text{difference pre.post}} = 1.68, 95\% \text{ CI} = [1.48, 1.87]$ ), which endured to 10-months follow-up ( $M^{\text{difference pre.follow}} = 1.62, 95\% \text{ CI} = [1.37, 1.86]$ ). A small but significant decrease in reported self-rated knowledge occurred from post training to 10-months follow-up ( $M^{\text{difference post.follow}} = -.55, 95\% \text{ CI} = [-.71, -.39]$ ).

For attitudes, a similar pattern of findings emerged. Here, Mauchly's test was also violated ( $\chi^2[2] = .685, p = .00$ ) and so the Greenhouse-Geisser correction ( $\epsilon = .76$ ) was applied to the degrees of freedom. Results showed that there was a significant main effect of the training on reported positive attitudes toward mental health issues [ $F(1.52, .66) = 60.93, p = .00$ ]. Bonferroni pairwise comparisons revealed that immediately following training, from (retrospective) pre- to post-intervention, participants showed a significant increase in reported positive attitudes toward mental health issues ( $M^{\text{difference pre.post}} = .98, 95\% \text{ CI} = [.75, 1.21]$ ), which endured to 10-months follow-up ( $M^{\text{difference pre.follow}} = .68, 95\% \text{ CI} = [.42, .95]$ ). A small but significant decrease in reported positive attitudes toward mental health occurred from post training to 10-months follow-up ( $M^{\text{difference post.follow}} = -.30, 95\% \text{ CI} = [-.45, -.15]$ ).

Finally, for confidence Mauchly's test was also violated ( $\chi^2[2] = .82, p = .00$ ) and so the Greenhouse-Geisser correction ( $\epsilon = .85$ ) was applied to the degrees of freedom. Results showed that there was a significant main effect of the training on self-rated confidence in supporting those displaying mental health issues [ $F(1.69, .59) = 159.38, p = .00$ ]. Bonferroni pairwise comparisons revealed that, immediately following training, from (retrospective) pre- to post-intervention, participants showed a significant increase in their self-rated confidence in supporting those displaying mental health issues ( $M^{\text{difference pre.post}} = 1.52, 95\% \text{ CI} = [1.29, 1.75]$ ), which endured to 10-months follow-up ( $M^{\text{difference pre.follow}} = 1.26, 95\% \text{ CI} = [1.00, 1.51]$ ). A small but significant decrease in reported confidence occurred from post training to 10-months follow-up ( $M^{\text{difference post.follow}} = -.26, 95\% \text{ CI} = [-.43, -.09]$ ). These findings are displayed in Table 1.

Furthermore, to examine those who were in follow-up and those that did not, an independent t-test was undertaken examining difference on pre-knowledge, attitude and confidence for those who completed follow up ( $n = 120$ ) vs those that did not ( $n = 489$ ). There were no significant differences between the groups for knowledge (mean difference = 0.08759,  $t(607) = 0.821$ ,  $p = 0.412$ ), attitudes (mean difference = 0.18855,  $t(607) = 1.599$ ,  $p = 0.110$ ), and confidence (mean difference = 0.10762,  $t(607) = 0.915$ ,  $p = 0.361$ ). There were therefore no differences in the key outcomes at baseline between those who followed up and those that were not.

*Insert Table 1 here*

### Qualitative findings

Interviewees came from the three Armed Forces with expertise in education, recruitment/selection, training, policy development, and veteran's welfare. Degrees of seniority included departmental head, Petty Officer and Flight Lieutenant.

Thematic analysis revealed perceived changes in awareness, knowledge, attitudes and confidence, and their application to day to day life. Two closely connected themes emerged; (i) the impact on participants' awareness, skills and confidence in dealing with mental health issues and, (ii) through undertaking the course, participants' perceived role as ambassadors for mental health within their working contexts.

### Impact on awareness, skills and confidence in dealing with mental health issues

A number of participants described the effect of the programme in terms of how it helped them to develop an awareness of the importance of mental health literacy education, its role in reducing stigma and its potential for sustainable change if more people were to be trained:

I found the training informative and helpful. ....I think many more people should be trained, particularly in the Armed Forces, to raise awareness and remove the stigma attached to mental health issues. (Open-ended survey data)

Participants developed a number of relevant skills, principally the ability to recognise and deal with situations in which mental health issues were important. A number reported that the programme helped them to assess and understand the requirements of the situation, and to respond appropriately:

I have learnt to step back from the first response from the individual and listen to what is going on and evaluate the whole situation before advancing with their care. (Simon, 455-457)

Another participant alluded to the fact that the programme focused on providing skills to deal with issues in the first instance, rather than being concerned with solving these in the long term:

We're not trying to diagnose what the mental health issue might be, we're just trying to stop them from doing anything catastrophic and then signpost them and deliver them to the next point in the process. So, I was completely reassured by that and felt well enough equipped to go on and deal better than I had before taking up the training. (Adam, 98-102)

The skills obtained were not only important in enabling trainees to meet individual needs, but also in providing confidence to address the broader subject of mental health:

I actually felt more confident to address, and more confident to speak openly about it [mental health] and actually it's not going to offend people if you speak about it. Sometimes, actually you might ease the situation for that person just to know that, yeah, you are aware of it, and that it's not kind of a taboo. (Grace, 345-348)

This sense of confidence enabled participants to talk about, understand, appreciate, and respond to people with mental health issues:

I have met one or two people since [the course] that I have been able to, sort of, say things [that] I wouldn't have dreamed of saying to them otherwise. So it's improved my confidence, and I've perhaps realised that we can all be in a bad place at a certain time, ....but if it's not addressed, discussed and sign-posted, then it can turn into something worse. (Jocelyn, 152-158)

Participants highlighted that this enhanced sense of confidence impacted upon them in a number of ways; some had supported friends and family, whilst others reporting supporting work colleagues.

#### Ambassadors for mental health within the working context

Participants had developed a better understanding of their role in supporting other people in relation to the wider range of services available and in signposting people to access support services for such problems:

You can begin to recognise the symptoms in there, which groups of people were at higher risk...of developing those problems and issues. And then what you might be able to do to

help them, put that signpost into place, so they can seek better help to deal with those issues.  
(Alan, 58-61)

Interaction with other participants appeared to help participants develop confidence to talk about mental health issues and to address some of the social norms and stigma regarding talking about such issues:

One of the most useful things was talking to other people in the room and hearing kind of, experiences that people have had or shared or heard of the more you talk about it the more common it becomes and the more normal it becomes (Claire 81-84).

This sense of awareness and increased confidence was expressed broadly, however participants also displayed an ability to reflect on the benefits more specifically, for themselves and others:

I think I am more aware of my own mental health and that of others. I am more prepared to talk about mental health issues and dispel stigma surrounding it (sic). For those who have suffered mental health issues, or are still recovering, I have been able to talk about how it affected their lives and how they overcame, in particular what was helpful to them. (Open-ended survey data)

As a consequence of increased awareness, participants perceived that they were more able to play a role in supporting mental health issues in, for example, signposting them to support services in the future. In this sense, they could be described as mental health representatives or advocates, both at home and at work:

I am now more confident in looking out for people. Due to my role I am frequently approached outside of my working role for advice and guidance. I am better prepared to give proper guidance and signpost individuals, or give advice to relatives. (Open-ended survey data)

Additionally, for some, they also wanted to promote the course, to make more people aware of it and to encourage attendance:

I mean to be quite honest, if the course was on the open market I would have a word with various people within my life to actually get their backsides on it; my GP first. (Clive,107-108)

## **DISCUSSION**

Participants who attended the MHFA training course showed a significant increase in self-rated knowledge, attitude and confidence in relation to mental health issues, pre- to post-intervention (i.e. the training course). At 10-months follow-up, this effect was found to be slightly decreased, but still statistically significant. Qualitative findings supported these findings of improved confidence, knowledge, and understanding. It also showed that participants felt it had a role in addressing stigma in the Armed Forces community, and provided them with a responsibility to be mental health advocates in both their role, and their immediate communities.

People with mental health problems often avoid seeking professional help (Oliver, *et al.*, 2005) and Armed Forces personnel may choose not to utilise support services due to stigma associated with mental health problems (Hoge, *et al.*, 2004, Iversen, *et al.*, 2011, Vogt, 2011). MHFA education programmes have been found to improve mental health literacy, identification of mental health support, and to reduce stigma associated with mental health issues in community groups (Hadlaczky, *et al.*, 2014, Kitchener and Jorm, 2006, Kitchener and Jorm, 2008). However, relatively little is known about its influence across Armed Forces communities.

This mixed method study supports previous published research which has investigated the impact of MHFA in specific communities (Hadlaczky, *et al.*, 2014, Kitchener and Jorm, 2006, Kitchener and Jorm, 2008). However, it is the first evaluation that has investigated the impact of MHFA on Armed Forces communities. These findings provide evidence that the MHFA Armed Forces programme has helped to improve mental health literacy in the UK Armed Forces. In the longer term, such an intervention could provide sustained support for personnel, veterans, and their families' in identifying mental health problems and encouraging access to support services for those people.

### **Limitations of this study**

Due to the nature of this project (an exploratory evaluation of an intervention in practice), the study was unable to employ a control group for comparative purposes. Adopting a randomised-control trial design with this specific paradigm, either with a control group or by comparing it to another existing intervention aimed at this particular target group, would highlight further efficacy. There was a

potential for bias within the study in a number of areas. Firstly, to acknowledge the subjective nature of participants' own rating of how their knowledge, attitude and confidence had changed, is open to respondent bias. Secondly, because the pre measure was retrospective, there is a risk of bias if participants' enjoyed the course and thirdly, with regard to the limited follow-up, both in terms of time and number of participants lost to follow-up. The loss-to-follow-up may also have created potential bias in the sample of participants that provided post-intervention data, potentially limiting the demographic to groups that are more engaged or otherwise more likely to adhere or respond. Furthermore, with respect to the follow-up interviews, there is a possibility some of the participants may have been interviewed before the follow-up survey was completed. Therefore, there is a possibility that the telephone interviews may have biased the responses of a handful of participants to the knowledge and attitudes questionnaire items at follow-up. On this point, however, we note that any bias is unlikely to be consequential to the overall results, given the small sub-sample interviewed ( $n = 13$ ), and our focus on personal experiences of the intervention (i.e., how *they* interpreted the content) in our interview discussions.

The study did not include a pre-existing mental health literacy questionnaire, and instead employed an adapted assessment of this concept. Whilst there is still uncertainty over both the measurement of mental health literacy and suitable tools (O'Connor *et al.*, 2014) it may have been more beneficial, and recommended for future research, to use an existing inventory, such as the Mental Health Literacy Scale (O'Connor, *et al.*, 2014), pre and post intervention. Further, this study was only able to assess trainee perspectives on outcomes whereas the ultimate goal of such an intervention is also to learn how best to implement the programme, how the knowledge is used in practice over time, and its impact on access to support services. Further in-depth qualitative research may be best to provide this in future programme evaluations. Furthermore, we were also unable to investigate any changes within Armed Forces type, or level of position from participants, due to that specific data not being available at an individual level. This information would be invaluable to both developing an understanding about the future implementation of such programmes in Armed Forces communities and their long-term implications.

**Table 1.** Results of the repeated measures ANOVA

	Pre		Post		Follow-up	
	M	SE	M	SE	M	SE
Knowledge	2.87 <sup>b,c</sup>	.08	4.54 <sup>a,c</sup>	.05	3.99 <sup>a,b</sup>	.06
Attitudes	3.80 <sup>b,c</sup>	.10	4.78 <sup>a,c</sup>	.04	4.48 <sup>a,b</sup>	.06
Confidence	2.96 <sup>b,c</sup>	.10	4.48 <sup>a,c</sup>	.05	4.22 <sup>a,b</sup>	.06

*Note:* <sup>a</sup> = significant difference versus pre; <sup>b</sup> = significant difference versus post; <sup>c</sup> = significant difference versus follow-up. All mean differences were significant at the  $p < .01$  level.

Accepted manuscript 04 12 18

## REFERENCES

- Aakre, J. M., Himelhoch, S. and Slade, E. P. (2014) Mental Health Service Utilization by Iraq and Afghanistan Veterans After Entry Into PTSD Specialty Treatment. *Psychiatric Services*, **65**, 1066.
- Aakre, J. M., Lucksted, A. and Browning-McNee, L. A. (2016) Evaluation of Youth Mental Health First Aid USA: A program to assist young people in psychological distress. *Psychological Services*, **13**, 121-126. 10.1037/ser0000063.
- Bond, K. S., Jorm, A. F., Kitchener, B. A. and Reavley, N. J. (2015) Mental health first aid training for Australian medical and nursing students: an evaluation study. *BMC Psychology*, **3**, 1.
- Braun, V. and Clarke, V. (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology*, **3**, 77-101. 10.1191/1478088706qp063oa.
- Braun, V., Clarke, V. and Terry, G. (2014) Thematic analysis. *Qual Res Clin Health Psychol*, 95-114.
- Clarke, V., Braun, V. and Hayfield, N. (2015) Thematic Analysis. In Smith, J. A. (ed), *Qualitative psychology: A practical guide to research methods*, 3rd edition, Chapter 10, Sage, London. pp. 222-248.
- Coyne, I. T. (1997) Sampling in qualitative research. Purposeful and theoretical sampling; merging or clear boundaries? *Journal of advanced nursing*, **26**, 623-630.
- Dimoff, J. K., Kelloway, E. K. and Burnstein, M. D. (2016) Mental health awareness training (MHAT): The development and evaluation of an intervention for workplace leaders. *International Journal of Stress Management*, **23**, 167-189. 10.1037/a0039479.
- Esters, I. G., Cooker, P. G. and Ittenbach, R. F. (1998) Effects of a unit of instruction in mental health on rural adolescents' conceptions of mental. *Adolescence*, **33**, 469-469 461p.
- Fikretoglu, D., Elhai, J. D., Liu, A., Richardson, J. D. and Pedlar, D. J. (2009) Predictors of likelihood and intensity of past-year mental health service use in an active Canadian military sample. *Psychiatric Services*, **60**, 358-366. 10.1176/appi.ps.60.3.358.
- Garvey Wilson, A. L., Messer, S. C. and Hoge, C. W. (2009) U.S. military mental health care utilization and attrition prior to the wars in Iraq and Afghanistan. *Social Psychiatry & Psychiatric Epidemiology*, **44**, 473-481. 10.1007/s00127-008-0461-7.
- Gould, M., Greenberg, N. and Hetherington, J. (2007) Stigma and the military: Evaluation of a PTSD psychoeducational program. *Journal of Traumatic Stress*, **20**, 505-515. 10.1002/jts.20233.
- Greenberg, N., Langston, V., Everitt, B., Iversen, A., Fear, N. T., Jones, N. and Wessely, S. (2010) A cluster randomized controlled trial to determine the efficacy of Trauma Risk Management (TRiM) in a military population. *Journal of Traumatic Stress*, **23**, 430.
- Greenberg, N., Langston, V., Iversen, A. C. and Wessely, S. (2011) The acceptability of 'Trauma Risk Management' within the UK Armed Forces. *Occupational Medicine*, **61**, 184-189.
- Greenberg, N., Thomas, S. L., Iversen, A., Unwin, C., Hull, L. and Wessely, S. (2003) Do military peacekeepers want to talk about their experiences? Perceived psychological support of UK military peacekeepers on return from deployment. *Journal of Mental Health*, **12**, 565-573.



- Hadlaczky, G., Hökby, S., Mkrtchian, A., Carli, V. and Wasserman, D. (2014) Mental Health First Aid is an effective public health intervention for improving knowledge, attitudes, and behaviour: A meta-analysis. *International Review of Psychiatry*, **26**, 467-475. 10.3109/09540261.2014.924910.
- Heck, R. H., Thomas, S. L. and Tabata, L. (2010) *Multilevel and longitudinal analysis using SPSS*. Routledge, New York, NY 10016.
- Hoge, C. W., Castro, C. A., Messer, S. C., McGurk, D., Cotting, D. I. and Koffman, R. L. (2004) Combat Duty in Iraq and Afghanistan, Mental Health Problems, and Barriers to Care. *New England Journal of Medicine*, **351**, 13-22.
- Iversen, A. C., van Staden, L., Hughes, J. H., Greenberg, N., Hotopf, M., Rona, R. J., Thornicroft, G., Wessely, S. and Fear, N. T. (2011) The stigma of mental health problems and other barriers to care in the UK Armed Forces. *BMC Health Services Research*, **11**, 31-40. 10.1186/1472-6963-11-31.
- Jorm, A. F., Kitchener, B. A., Sawyer, M. G., Scales, H. and Cvetkovski, S. (2010) Mental health first aid training for high school teachers: a cluster randomized trial. *BMC Psychiatry*, **10**, 51-62. 10.1186/1471-244x-10-51.
- Kitchener, B. A. and Jorm, A. F. (2006) Mental health first aid training: review of evaluation studies. *Australian & New Zealand Journal of Psychiatry*, **40**, 6-8. 10.1111/j.1440-1614.2006.01735.x.
- Kitchener, B. A. and Jorm, A. F. (2008) Mental Health First Aid: an international programme for early intervention. *Early Intervention in Psychiatry*, **2**, 55-61. 10.1111/j.1751-7893.2007.00056.x.
- MOD (2015) UK Armed Forces Mental Health: Annual Summary & Trends Over Time, 2007/08 - 2014/15. MOD.
- Morawska, A., Fletcher, R., Pope, S., Heathwood, E., Anderson, E. and McAuliffe, C. (2013) Evaluation of mental health first aid training in a diverse community setting. *International Journal of Mental Health Nursing*, **22**, 85-92 88p. 10.1111/j.1447-0349.2012.00844.x.
- Mulligan, K., Jones, N., Davies, M., McAllister, P., Fear, N. T., Wessely, S. and Greenberg, N. (2012) Effects of home on the mental health of British forces serving in Iraq and Afghanistan. *British Journal of Psychiatry*, **201**, 193.
- Murrison, A. (2010) *Fighting Fit. A Mental health plan for servicemen and veterans*. Ministry of Defence, London.
- O'Connor, M., Casey, L. and Clough, B. (2014) Measuring mental health literacy - a review of scale-based measures. *Journal of Mental Health*, **23**, 197-204. 10.3109/09638237.2014.910646.
- O'Reilly, C. L., Bell, J. S., Kelly, P. J. and Chen, T. F. (2011) Impact of mental health first aid training on pharmacy students' knowledge, attitudes and self-reported behaviour: a controlled trial. *Australian & New Zealand Journal of Psychiatry*, **45**, 549-557. 10.3109/00048674.2011.585454.
- Oliver, M. I., Pearson, N., Coe, N. and Gunnell, D. (2005) Help-seeking behaviour in men and women with common mental health problems: cross-sectional study. *British Journal of Psychiatry*, **186**, 297.
- Schreiber, M. and McEnany, G. P. (2015) Stigma, American military personnel and mental health care: challenges from Iraq and Afghanistan. *Journal of Mental Health*, **24**, 54-59. 10.3109/09638237.2014.971147.

Sundin, J., Forbes, H., Fear, N. T., Dandeker, C. and Wessely, S. (2011) The impact of the conflicts of Iraq and Afghanistan: A UK perspective. *International Review of Psychiatry*, **23**, 153-159. 10.3109/09540261.2011.561303.

Svensson, B., Hansson, L. and Stjernswärd, S. (2015) Experiences of a Mental Health First Aid Training Program in Sweden: A Descriptive Qualitative Study. *Community Mental Health Journal*, **51**, 497-503 497p. 10.1007/s10597-015-9840-1.

Tashakkori, A. and Teddlie, C. (1998) *Mixed Methodology: Combining Qualitative and Quantitative Approaches*. Sage, Thousand Oaks, C.A.

Vogt, D. (2011) Mental health-related beliefs as a barrier to service use for military personnel and veterans: A review. *Psychiatric Services*, **62**, 135-142.

Warner, C. H., Appenzeller, G. N., Mullen, K., Warner, C. M. and Grieger, T. (2008) Soldier attitudes toward mental health screening and seeking care upon return from combat. *Military Medicine*, **173**, 563-569.

Zinzow, H. M., Thomas, B. W., McFadden, A. C., Burnette, C. M. and Gillispie, S. (2012) Connecting active duty and returning veterans to mental health treatment: Interventions and treatment adaptations that may reduce barriers to care. *Clinical Psychology Review*, **32**, 741-753.

Accepted manuscript 24 12 18