

Determinants of mental and physical health treatment-seeking among military personnel

Thomas W. Britt, Maurice L. Sipos, Zachary Klinefelter and Amy B. Adler

Background

Although research has documented factors influencing whether military personnel seek treatment for mental health problems, less research has focused on determinants of treatment-seeking for physical health problems.

Aims

To explicitly compare the barriers and facilitators of treatment-seeking for mental and physical health problems.

Method

US soldiers ($n = 2048$) completed a survey with measures of barriers and facilitators of treatment-seeking for mental and physical health problems as well as measures of somatic symptoms and mental health.

Results

The top barrier for both mental and physical health treatment-seeking was a preference for handling problems oneself. The top facilitators for both symptom types were related to treatment improving quality of life. Differential endorsement of barriers occurred for treatment of mental versus physical health symptoms. In contrast, facilitators were endorsed more for physical than for mental health treatment. While there were few gender differences, officers reported more barriers and facilitators than

did enlisted personnel. Screening positive for mental or physical health problems was associated with greater endorsement of both barriers and facilitators for physical and mental health treatment, respectively.

Conclusions

The leading barriers and facilitators for seeking treatment for mental health and physical problems are relatively similar, suggesting that health education should consider decision-making in seeking both mental and physical healthcare. Interventions should be tailored to reduce barriers for officers and improve facilitators for junior enlisted personnel, and address barriers and facilitators for service members screening positive for a mental or physical health problem.

Declaration of interest

T.W.B. reports personal fees from TechWerks Corporation during the conduct of the study.

Keywords

Military psychiatry; stigma and discrimination; trauma; outpatient treatment; service users.

Copyright and usage

© The Royal College of Psychiatrists 2019.

Studies have documented mental health problems among military personnel¹ and that only a minority of service members seek treatment for these difficulties.^{2–4} Therefore, researchers have been actively investigating the determinants of treatment-seeking for these problems.^{5–8} However, less research has focused on the determinants of treatment-seeking for physical health problems. Not only do physical health problems have implications for job performance given the physical demands of military service, but they also appear to be more prevalent for veterans than civilians.⁹ Musculoskeletal injuries, in particular, are relatively frequent.¹⁰ Nevertheless, the limited research that does exist suggests that US military personnel would prefer not to seek immediate medical care if they experienced an injury.^{11,12} The present study explicitly compares the barriers and facilitators of treatment-seeking for mental and physical health problems in military personnel. Only one previous study has been conducted that compared the determinants of treatment-seeking among military personnel and this study was limited by only examining stigma as a barrier and no facilitators.¹³ In the present study, we expected to find endorsement of barriers and facilitators that have been identified in prior military and civilian research,^{14,15} as well as endorsement of other barriers and facilitators that have not been previously examined. The present study also addresses how demographic differences (gender and rank) and symptom levels have an impact on the ways military personnel endorse barriers and facilitators to seeking care. The association between higher symptom levels and greater endorsement of both barriers and facilitators is expected based on the salience of these issues for individuals with problems.^{16–18}

Method

Study sample

Participants were US soldiers from a brigade combat team ($n = 2048$) who were surveyed on a US military post while stationed in Germany. Eligibility criteria were being assigned to the brigade and available to participate in the survey. All available personnel over the course of 1 week were briefed on the study; other personnel were on leave, assigned to other duties, in training or otherwise not available. Of the 2540 personnel who were briefed on the survey, 2048 (or 81%) provided consent and completed the survey. These were the only personnel included in the analyses. All procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008. All procedures involving human participants were approved under a protocol approved by the Institutional Review Board at the Walter Reed Army Institute of Research. Surveys were administered in a theatre or gymnasium in December 2014.

In terms of military rank, 61% were junior enlisted soldiers (E1–E4), 31% were non-commissioned officers (NCOs), and 8% were officers/warrant officers. Officers and warrant officers were combined in order to preserve anonymity and reduce the risk of triangulation given the few numbers of warrant officers in any typical army unit. In terms of age, 50% were 18–24 years old, 26% were 25–29 years old, 20% were 30–39 years old and 4% were 40 years old or older. Almost all participants were male (93%). Demographics were similar to other studies using brigade combat team samples.^{1,16}

Measures

Barriers and facilitators of treatment-seeking

The determinants of treatment-seeking items selected were based on prior research on the determinants of treatment-seeking among military personnel,^{5–8} with a specific focus on whether the item encouraged or inhibited treatment-seeking. Items were developed in discussion with military healthcare experts. For the eight items assessing the barriers to treatment-seeking for mental and physical health symptoms, participants were instructed to ‘Rate how much each of the following factors might discourage you towards seeking mental health services [health services] for mental health [physical health] symptoms that are bothering you’. For the 14 items assessing the facilitators of treatment-seeking for mental and physical health symptoms, participants were instructed to ‘Rate how much each of the following factors might encourage you towards seeking mental health services [health services] for mental health [physical health] symptoms that are bothering you’. For both sets of items, participants responded on a five-point scale including the options: not at all; a little; somewhat; moderately; and very much. Facilitator and barrier items (see Fig. 1) were considered endorsed if respondents agreed with the item ‘moderately’ or ‘very much’.¹⁶

Mental health problems

The mental health problems were assessed with validated measures and included the PTSD Checklist to assess post-traumatic stress disorder,¹⁹ Patient Health Questionnaire (PHQ) to assess major depressive disorder²⁰ and Generalized Anxiety Disorder-7 to assess generalised anxiety disorder.²¹ Participants were considered to have a mental health problem if they screened positive on one or more of the mental health assessments, allowing comparison of treatment-seeking behaviour in participants with/without behavioural health problems. In the present sample, 9% screened positive for post-traumatic stress disorder, 5% screened positive for major depressive disorder and 9% screened positive for generalised anxiety disorder.

Physical health problems

A modified version of the 15-item PHQ (PHQ-15) was used to assess the presence of common physical symptoms among military personnel.²² The PHQ-15 instructs participants to indicate how much they have been bothered by different symptoms (for example back pain, stomach pain, headaches, dizziness) in the past month, with responses of: not bothered (0); bothered a little (1); and bothered a lot (2). Two items were removed from the measure: ‘menstrual cramps or other problems with your periods’ and ‘pain or problems during sexual intercourse’. Despite the removal of these items, our cut-offs matched the validated cut-offs reported in the literature²² and used by other researchers.²³ Scoring was consistent with published guidelines that categorised responses into four categories of symptom severity: minimal (0–4 symptoms); low (5–9); medium (10–14); and high (15 and greater).²⁴ Participants were regarded as having a physical health problem if they scored medium or high on the measure.

Results

Endorsement of determinants

Figure 1 shows the percentages of participants that endorsed each item and compares the endorsement of physical health items to mental health items. The three most frequently endorsed barriers to mental health treatment were a preference for handling problems

oneself, the symptoms going away on their own and a concern with being seen as ‘broken’ by their unit. The three most frequently endorsed barriers to physical health treatment were a preference for handling problems oneself, fear of being seen as broken by one’s unit and a concern of treatment harming the soldier’s career.

The three most common facilitators for mental health treatment were healthcare improving quality of life, healthcare being effective in treating symptoms and the symptoms lasting longer than 1 month. The three most common facilitators for physical health treatment were healthcare improving quality of life, healthcare being effective in treating symptoms and healthcare improving the ability to perform one’s job. Overall, personnel endorsed more facilitators to both mental and physical health treatment-seeking than barriers to treatment-seeking. The mean score on facilitators of treatment was higher than the mean score for barriers for treatment for both physical (mean 2.27 (s.d. = 1.33) v. mean 1.89 (s.d. = 1.14), $t(1904) = 11.25$, $P < 0.01$) and mental health problems (mean 2.01 (s.d. = 1.20) v. mean 1.90 (s.d. = 1.12), $t(1931) = 3.74$, $P < 0.01$).

McNemar’s χ^2 tests were conducted on each item to determine if significantly different proportions of participants endorsed (versus did not endorse) the physical health items compared with the mental health items. As shown in Fig. 1, participants endorsed four of the eight barriers to treatment items significantly differently. A greater proportion of individuals endorsed the items, ‘I prefer to manage my problems on my own’ and ‘Health care professionals might put it in my records’ when they referred to mental healthcare. Conversely, a larger proportion of participants endorsed the barrier items, ‘I could be seen as weak’ and ‘I could be seen as “broken” by my unit’ when they referred to physical health.

In terms of facilitator items, a greater proportion of participants endorsed all but one of the physical health items (‘I might learn that my symptoms are common’). Although the differences in the endorsement of the facilitators between mental and physical health symptoms were consistent, they were relatively small.

Demographic differences on determinants

In general, men and women provided statistically similar ratings of barriers to seeking mental and physical healthcare, although a few gender differences were found. Women were less likely than men to endorse barriers related to ‘being seen as broken’ for both mental, $\chi^2(1) = 7.69$, $P = 0.01$ (8% v. 16%, respectively) and physical, $\chi^2(1) = 7.69$, $P = 0.01$ (8% v. 16%, respectively) health symptoms. Women were also less likely than men to endorse ‘health care professionals finding more wrong with me’ for both mental, $\chi^2(1) = 5.73$, $P = 0.02$ (7% v. 14%, respectively) and physical, $\chi^2(1) = 6.34$, $P = 0.01$ (26% v. 36%, respectively) health symptoms. In addition, women were less likely than men to endorse the ‘I prefer to manage my problems on my own’ for mental health symptoms, $\chi^2(1) = 6.33$, $P = 0.01$ (21% v. 31%, respectively). In terms of the facilitators of treatment, there were no gender differences on the 14 facilitators of treatment-seeking for mental health symptoms. However, women were more likely than men to endorse facilitators of physical health symptoms related to ‘Health care could make you feel better,’ $\chi^2(1) = 6.34$, $P = 0.01$ (36% v. 26%, respectively), and ‘Health care could teach me how to manage my symptoms,’ $\chi^2(1) = 4.75$, $P = 0.03$ (32% v. 24%, respectively).

The results for differences in perceptions as a function of rank are provided in Table 1. As seen in Table 1, significant differences were found for all barriers related to seeking treatment for mental health symptoms, except for being seen as weak. In follow-up comparisons, officers were generally more likely to endorse barriers to getting treatment for mental health symptoms than junior enlisted

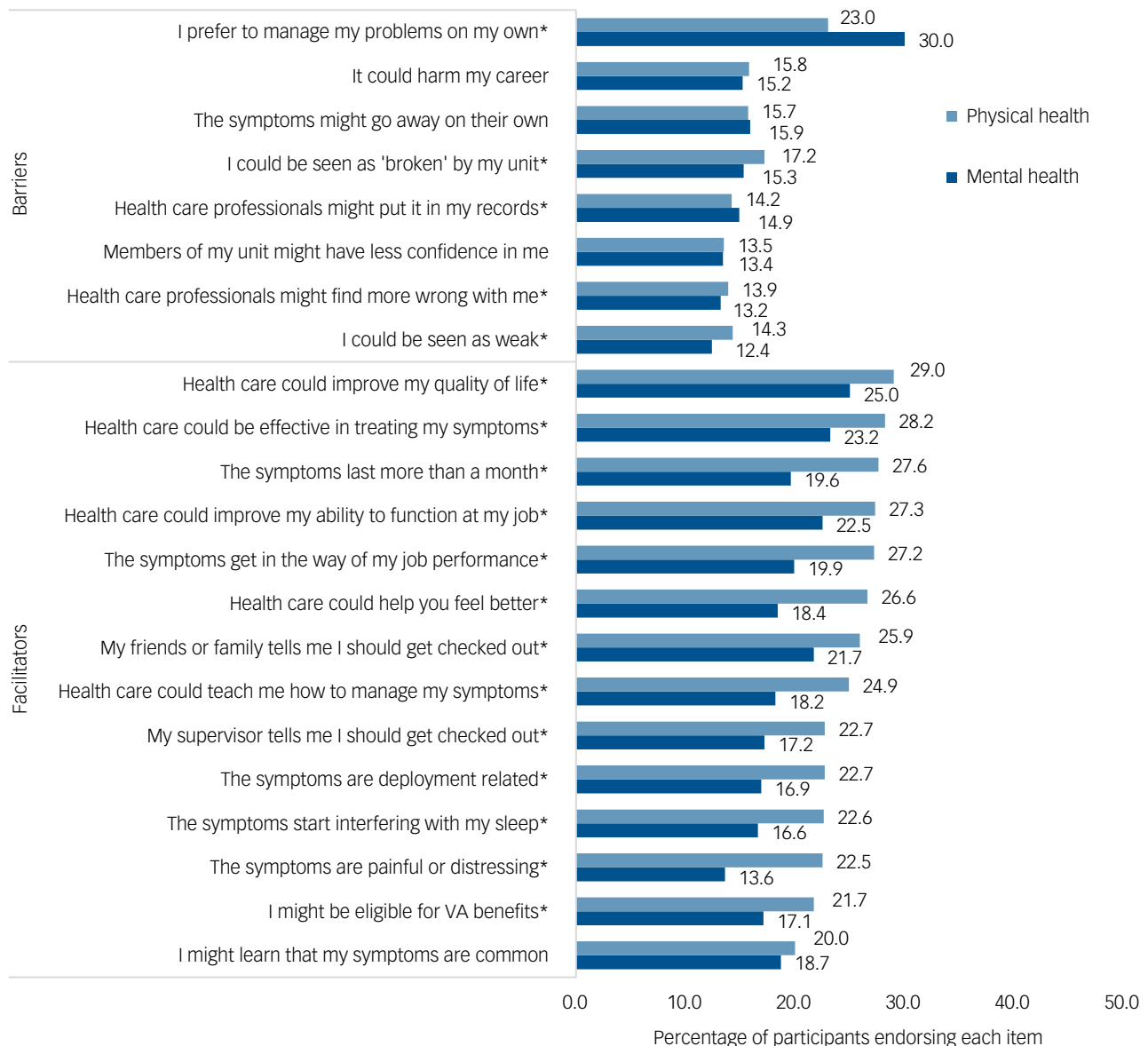


Fig. 1 Percentages of participants endorsing agreement with each item for physical health and mental health.

Items are marked with an * if the proportion of individuals endorsing an item for physical health treatment is significantly different from the proportion of individuals endorsing the same item for mental health treatment. * denotes a significant difference at $P < 0.05$, calculated using McNemar's test (binomial distribution). VA, Veterans Affairs.

soldiers or NCOs. Officers and NCOs both endorsed the barriers of providers finding something else wrong with them and putting the treatment in their medical records at a higher rate than junior enlisted soldiers. Rank differences were also found for four of the eight barriers to getting treatment for physical health symptoms. Officers endorsed the barriers involving symptoms going away on their own and a preference for managing problems oneself at a higher rate than other personnel.

As seen in Table 1, rank differences were obtained for 13 facilitators for mental health symptoms and for all 14 facilitators of physical health symptoms. For the facilitators of mental health symptoms, follow-up comparisons between the three levels of rank revealed a general pattern of junior enlisted participants being less likely to endorse facilitators of treatment-seeking than NCOs or officers. For facilitators of physical health symptoms, follow-up comparisons revealed a general pattern of junior enlisted soldiers being least likely to endorse the facilitator and officers being most likely to endorse the facilitator.

Endorsement of determinants and health-related symptoms

Overall, 14% screened positive for one or more of the three mental health problems, and 11% screened positive for physical health problems. In addition, 48% of participants screening positive for a mental health problem also screened positive for a physical health problem. Conversely, 58% of participants with a physical health problem also screened positive for a mental health problem. The proportions of personnel endorsing facilitators and barriers to mental healthcare as a function of possessing a mental health problem are provided in Fig. 2. Replicating prior research,¹⁶ all eight barriers were endorsed at a higher level for participants who screened positive for a mental health problem. Furthermore, with the exception of one of the facilitator items ('My supervisor tells me I should get checked out'), participants with a mental health problem evidenced greater endorsement of the facilitators.

Figure 3 depicts the proportions of participants endorsing barriers and facilitators to physical healthcare as a function of screening

Table 1 Rank differences on the endorsement of barriers and facilitators of treatment-seeking for mental and physical health symptoms

	Mental health symptoms			Physical health symptoms		
	Junior enlisted	NCOs	Officers	Junior enlisted	NCOs	Officers
Barriers						
I could be seen as weak	12.7	11.2	16.7	15.1	12.5	16.1
Members of unit less confidence	12.7^a	12.8^a	22.4^b	13.1	13.5	13.5
It could harm my career	13.4^a	16.6^a	26.3^b	14.7	17.8	16.0
Symptoms might go away [on own]	14.8^a	15.9^a	25.2^b	14.7^a	15.3^a	25.2^b
I prefer to manage problems myself	27.1^a	33.5^b	42.9^c	20.9^a	24.5^a	33.8^b
I could be seen as 'broken' by unit	13.9^a	16.4^a	23.2^b	16.2	18.0	22.1
Might find something else wrong	11.5^a	16.4^b	14.3^b	12.3^a	17.4^b	13.5^{a,b}
Might be put in my records	13.0^a	17.3^b	20.8^b	12.9^a	16.2^b	18.8^b
Facilitators						
Symptoms are painful/distressing	12.1^a	17.2^b	17.1^{a,b}	18.0^a	27.3^b	35.7^c
Symptoms interfere with sleep	15.5	19.5	20.5	18.7^a	26.6^b	37.0^c
Symptoms last >1 month	17.3^a	23.9^b	25.0^b	22.6^a	33.3^b	44.2^c
Symptoms get in way of job	16.1^a	25.1^b	34.0^c	22.7^a	31.8^b	47.1^c
Symptoms deployment related	11.8^a	24.5^b	17.0^b	16.4^a	30.3^b	41.9^c
Supervisor tells me to get checked	14.4^a	20.0^b	29.5^c	19.1^a	25.0^b	41.7^c
Friends/family tell me to get checked	17.6^a	27.1^b	32.7^b	20.9^a	31.7^b	42.2^c
Health care could make feel better	14.9^a	23.4^b	25.2^b	20.9^a	33.8^b	42.9^c
Health care could teach me	15.2^a	22.4^b	24.4^b	19.3^a	32.1^b	37.8^b
I might be eligible for Veterans Affairs benefits	12.5^a	25.8^b	21.2^b	15.7^a	30.7^b	32.1^b
Health care could improve job	17.8^a	28.5^b	32.7^b	21.4^a	34.3^b	44.9^c
Health care could improve life qual	20.5^a	32.2^b	32.7^b	23.0^a	36.9^b	46.5^c
Health care could be effective	19.3^a	29.3^b	31.4^b	22.6^a	34.3^b	47.7^c
I might learn symptoms common	15.5^a	24.3^b	21.8^b	16.7^a	24.4^b	29.0^b

NCO, non-commissioned officer.

Percentages in bold indicate a significant χ^2 ($P < 0.05$) for endorsement as a function of rank.a–c. Percentages with different superscripts differ significantly at $P < 0.05$. For example, three percentages labelled with a, b and c, respectively, indicate all three percentages are significantly different from each other. If a percentage has 'a,b' as the superscript, that percentage is not significantly different from the percentages with superscripts a or b.

positive for a physical health problem. Again, participants who screened positive for physical health problems endorsed all eight barriers at a higher level. Additionally, they endorsed all but one of the facilitators ('My supervisor tells me I should get checked out').

Discussion

Main findings

The results of the present study indicated similar barriers and facilitators for mental and physical health problems. The top barrier for both problems was a preference for handling problems oneself, which may reflect the occupational culture's emphasis on being resilient in the face of both mental and physical demands and self-selection in terms of who joins the military.²⁵ Interestingly, concerns with treatment affecting the service member's career were greater for physical than mental health problems. This finding may reflect the concern that physical injury could result in a non-deployable determination, which would have practical implications for the individual's ability to remain in the military given that being ready to deploy is considered a condition of service. This result may also reflect research suggesting that concerns regarding the stigma of seeking treatment for mental health problems has declined in recent years.²⁶

The primary facilitators of treatment-seeking were also similar for mental and physical health symptoms and highlighted that the importance of believing that treatment will be effective.

Other top facilitators included symptoms lasting more than a month and symptoms that interfere with job performance, consistent with prior research indicating functional impairment as a predictor of treatment-seeking.²⁷ Facilitators were more likely to be endorsed than barriers, suggesting that public health campaigns and interventions may be more effective if they focus on leveraging these beneficial factors, in addition to the traditional focus on removing barriers. In terms of the absolute values in the

endorsement of barriers and facilitators, over one-third of officers indicated preferring to manage mental physical health problems on their own.

Our examination of demographics suggested greater similarities than differences between men and women. In contrast, more differences were found as a function of rank. In general, findings indicated that junior enlisted soldiers were less likely to report facilitators than other ranks. Rank differences on barriers were more complex, with relatively more consistent rank differences found for mental than physical health treatment. For example, officers were more likely to endorse barriers to care for both mental and physical health treatment than enlisted personnel. Future research is needed to focus specifically on the causes of these rank differences in perception and how treatment delivery and messaging can be adapted for these different groups.

The present study also found that the facilitators of treatment-seeking were endorsed at higher levels for physical problems in comparison with mental health problems. To our knowledge, this is the first study to explicitly compare the facilitators of treatment-seeking for physical and mental health problems. One explanation for these effects may be that military personnel have more confidence in the effectiveness of medical treatments than mental health treatments. Britt *et al.*²⁸ found that military personnel implicitly viewed mental health treatment as less effective than medical treatment. It is also possible that the stigma associated with mental health problems reduces willingness to seek treatment even when facilitators are in place. For example, even though an individual has symptoms for more than a month, this might not be enough to motivate them to seek mental healthcare because they perceive that the risk of stigma-related consequences is too high. Regardless, the majority of individuals did not endorse a belief in the effectiveness of treatment as a determinant of seeking mental or physical health treatment, suggesting that public health messages might underscore the effectiveness of interventions for both types of problems.

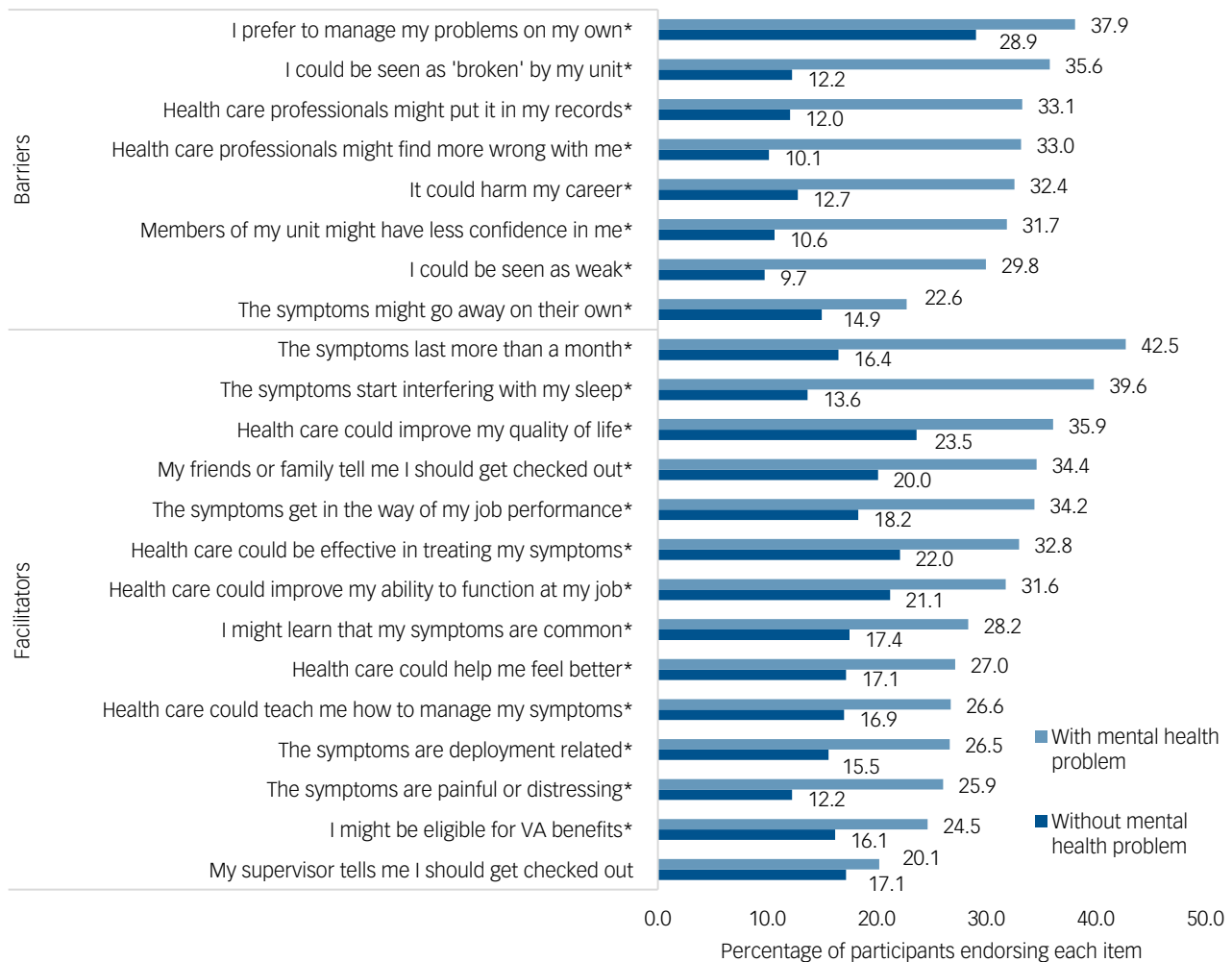


Fig. 2 Mental healthcare facilitators and barriers for individuals with and without a mental health problem.

* denotes a significant difference at $P < 0.05$, calculated using Pearson's χ^2 tests. VA, Veterans Affairs.

Finally, the results of the present study indicate that both barriers and facilitators to treatment are higher among those military personnel who screen positive for a problem. Although multiple studies have shown that perceptions of barriers to mental health treatment are higher for those military personnel screening positive for a mental health problem,^{8,20} the present study may be the first to document higher barriers to physical health treatment-seeking for those with a physical health problem, and the first to link health problems of either sort with endorsement of facilitators.

Interpretation of our findings

The results of the present study indicate that those service members with mental and physical health problems may be especially attuned to both barriers and facilitators to treatment-seeking.¹⁸ The determinants of treatment-seeking may not become relevant until service members are experiencing symptoms of mental and physical health problems and begin actively considering treatment.⁷ One positive implication of these findings is that service members with mental and physical health problems may be particularly open to being influenced by healthcare campaigns. It is interesting that concerns stereotypically associated with mental healthcare, such as being seen as weak or perceived as broken, were actually more likely to be endorsed for physical than mental health problems. In an occupation where selfless service is a core value, these concerns

have the potential to unnecessarily limit a soldier's willingness to seek help.

Limitations

The contributions of the present study need to be considered within the context of its limitations. The present study used self-report as the sole method to assess the variables under consideration and did not examine actual treatment-seeking for mental and physical health problems. Future research should assess whether the barriers and facilitators in the present study are predictive of documented visits to healthcare providers for mental and physical health problems. A second limitation is that the present study assessed the determinants of treatment-seeking for the broad categories of 'mental health' and 'physical health' problems, preventing an examination of whether different determinants exist for different problems. A third limitation has to do with including military personnel in the analyses who did not currently report a mental health or physical health problem. The responses of these individuals regarding treatment-seeking for a hypothetical health problem may be less reliable than those experiencing a health problem. Finally, the item 'I prefer to deal with the problem on my own' could reflect a range of different reasons for this preference. For example, responding affirmatively to this item could be a function of not wanting to be seen as weak, could reflect a strong sense of self-reliance or could reflect the fact that taking

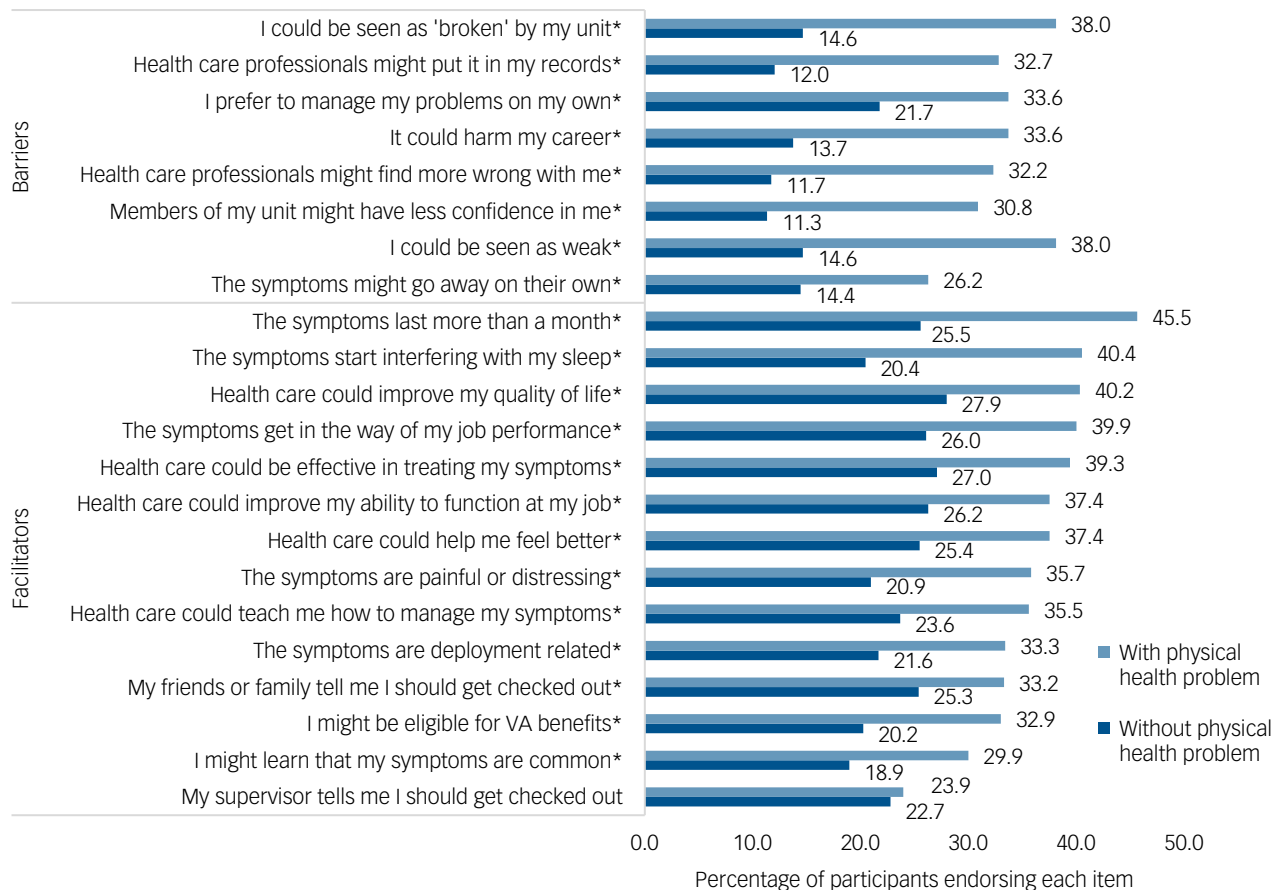


Fig. 3 Physical healthcare facilitators and barriers for individuals with and without a physical health problem.

* denotes a significant difference at $P < 0.05$, calculated using Pearson's χ^2 tests. VA, Veterans Affairs.

care of one's self is seen as more efficient or effective. Future research should build on this item to more specifically assess the reasoning behind this preference.

Implications

Although the present study is limited by a cross-sectional design and the use of self-report, the results broaden the healthcare community's understanding of how the reluctance to seek treatment goes beyond the topic of mental health to include physical health as well. The results also provide novel directions for the field, as healthcare delivery should be adapted to emphasise what service members care about most: their ability to manage problems on their own. Service members need to also recognise when they can no longer manage problems on their own and need professional help. Moreover, healthcare messaging should provide evidence about how care can make service members more productive. Besides improving healthcare delivery in the military, such efforts can be adopted for other high-risk occupational contexts as well.

Thomas W. Britt, PhD, Professor, Department of Psychology, Clemson University; and Research Psychologist, Center for Military Psychiatry and Neuroscience Research, Walter Reed Army Institute of Research, USA; **Maurice L. Sipos**, PhD, Colonel, US Army War College, USA; **Zachary Klinefelter**, MA, Graduate Research Assistant, Department of Psychology, Clemson University, USA; **Amy B. Adler**, PhD, Clinical Research Psychologist, Center for Military Psychiatry and Neuroscience Research, Walter Reed Army Institute of Research, USA

Correspondence: Thomas W. Britt, Department of Psychology, Clemson University, Clemson, SC 29634, USA. Email: twbritt@clemson.edu

First received 5 Nov 2018, final revision 17 May 2019, accepted 17 May 2019

Acknowledgements

We would like to thank Jeffrey Thomas, Amanda Adrian, Rachel Eckford, Carla Kreilein, Tobin Thomas, James Anderson and Rehema Kabiru for their assistance in data collection. Disclaimer: Material has been reviewed by the Walter Reed Army Institute of Research. There is no objection to its presentation and/or publication. The opinions or assertions contained herein are the private views of the authors, and are not to be construed as official, or as reflecting true views of the Department of the Army or the Department of Defense. The investigators have adhered to the policies for protection of human participants as prescribed in AR 70-25.

References

- 1 Thomas JL, Wilk JE, Riviere LA, McGurk D, Castro CA, Hoge CW. Prevalence of mental health problems and functional impairment among Active Component and National Guard soldiers 3 and 12 months following combat in Iraq. *Arch Gen Psychiatry* 2010; **67**: 614–23.
- 2 Naifeh J, Colpe L, Kessler R, Sampson NA, Heeringa SG, Stein MB, et al. Barriers to initiating and continuing mental health treatment among soldiers in the Army Study to Assess Risk and Resilience in Servicemembers (Army STARRS). *Mil Med* 2016; **181**: 1021–32.
- 3 Fikretoglu D, Brunet A, Schmitz N, Guay S, Pedlar D. Posttraumatic stress disorder and treatment seeking in a nationally representative Canadian military sample. *J Trauma Stress* 2006; **19**: 847–58.
- 4 Fikretoglu D, Guay S, Pedlar D, Brunet A. Twelve month use of mental health services in a nationally representative, active military sample. *Med Care* 2008; **46**: 217–23.
- 5 Kim PY, Thomas JL, Wilk JE, Castro CA, Hoge CW. Stigma, barriers to care, and use of mental health services among active duty and national guard soldiers after combat. *Psychiatr Serv* 2010; **61**: 572–88.
- 6 Adler AB, Britt TW, Kim PY, Riviere LA, Thomas JL. Longitudinal determinants of mental health treatment seeking for U.S. soldiers. *Br J Psychiatry* 2015; **207**: 346–50.

- 7 Britt TW, Jennings KS, Cheung JH, Pury CSL, Zinzow HM, Raymond MA, et al. Determinants of mental health treatment seeking among soldiers who recognize their problem: Implications for high risk occupations. *Work Stress* 2016; **40**: 318–36.
- 8 Kim PY, Britt TW, Klocko RB, Riviere LA, Adler AB. Negative attitudes about treatment and utilization of mental health care among soldiers. *Mil Psychol* 2011; **23**: 65–81.
- 9 Hinojosa R, Hinojosa MS. Activity-limiting musculoskeletal conditions in US veterans compared to non-veterans: results from the 2013 national health interview survey. *PLoS One* 2016; **11**: e0167143.
- 10 Hauret KG, Jones BH, Bullock SH, Canham-Chervak M, Canada S. Musculoskeletal injuries description of an under-recognized injury problem among military personnel. *Am J Prev Med* 2010; **38** (1 Suppl): S61–70.
- 11 Sauers SE, Smith LB, Scofield DE, Cooper A, Warr BJ. Self-management of unreported musculoskeletal injuries in a U.S. Army Brigade. *Mil Med* 2016; **181**: 1075–80.
- 12 Smith LS, Westrick R, Sauers S, et al. Underreporting of musculoskeletal injuries in the US Army: findings from an Infantry Brigade Combat Team survey study. *Sports Health* 2016; **8**: 507–13.
- 13 Britt TW. The stigma of psychological problems in a work environment: evidence from the screening of service members returning from Bosnia. *J Appl Soc Psychol* 2000; **30**: 1599–618.
- 14 Meier TB, Brummel BJ, Singh R, Nerio CJ, Polanski DW, Bellgowan PS. The underreporting of self-reported symptoms following sports-related concussion. *J Sci Med Sport* 2015; **18**: 507–11.
- 15 Haiduven DJ, Simpkins SM, Phillips ES, Stevens DA. A survey of percutaneous/mucocutaneous injury reporting in a public teaching hospital. *J Hosp Infect* 1999; **41**: 151–4.
- 16 Hoge CW, Castro CA, Messer SC, McGurk D, Cotting DI, Koffman RL. Combat duty in Iraq and Afghanistan, mental health problems, and barriers to care. *N Engl J Med* 2004; **351**: 13–22.
- 17 Gould M, Adler A, Zamorski M, Castro C, Hanily N, Steele N, et al. Do stigma and other perceived barriers to mental health care differ across Armed Forces? A comparison of USA, UK, Australian, New Zealand and Canadian data. *J R Soc Med* 2010; **103**: 148–56.
- 18 Greene-Shortridge TM, Britt TW, Castro CA. The stigma of psychological problems in the military. *Mil Med* 2007; **172**: 157–61.
- 19 Weathers FW, Ruscio AM, Keane TM. Psychometric properties of nine scoring rules for the Clinician-Administered Posttraumatic Stress Disorder Scale. *Psychol Assess* 1999; **11**: 124–33.
- 20 Spitzer RL, Kroenke K, Williams JB. Validation and utility of a self-report version of PRIME-MD: the PHQ Primary Care Study. *JAMA* 1999; **282**: 1737–44.
- 21 Spitzer RL, Kroenke K, Williams JBW, Löwe B. A brief measure for assessing generalized anxiety disorder: the GAD-7. *Arch Intern Med* 2006; **166**: 1092–7.
- 22 Kroenke K, Spitzer RL, Williams JB. The PHQ-15: validity of a new measure for evaluating the severity of somatic symptoms. *Psychosom Med* 2002; **64**: 258–66.
- 23 Adrian AL, Thomas JL, Adler AB. Soldiers and leaders with combat experience: unit health and climate. *Psychiatry* 2018; Aug 17 (Epub ahead of print).
- 24 Kocalevent RD, Hinz A, Brähler E. Standardization of a screening instrument (PHQ-15) for somatization syndromes in the general population. *BMC Psychiatry* 2013; **13**: 91.
- 25 Britt TW, Sinclair RR, McFadden A. Introduction: the meaning and importance of military resilience. In *Building Resilience in Military Personnel: Theory and Practice* (eds RR Sinclair and TW Britt): 3–17. American Psychological Association, 2013.
- 26 Quartana PJ, Wilk JE, Thomas JL, Bray RM, Olmsted KLR, Brown JM, et al. Trends in mental health services utilization and stigma in US soldiers from 2002 to 2011. *Am J Public Health* 2014; **104**: 1671–9.
- 27 Fikretoglu D, Brunet A, Schmitz N, Guay S, Pedlar D. Posttraumatic stress disorder and treatment seeking in a nationally representative Canadian military sample. *J Trauma Stress* 2006; **19**: 847–58.
- 28 Britt TW, Jennings KS, Cheung JH, Pury CLS, Zinzow HM. Unit training to increase support for military personnel with mental health problems. *Work Stress* 2018; **32**: 281–96.