

# Predictors of not working among treatment-seeking UK veterans: a cross-sectional study

Laura Josephine Hendrikx,<sup>1</sup> J Ross,<sup>2</sup> C Armour,<sup>2</sup> D Murphy<sup>1,3</sup>

<sup>1</sup>Research Department, Combat Stress, Leatherhead, UK  
<sup>2</sup>Psychology Department, Queen's University Belfast, Belfast, UK

<sup>3</sup>King's Centre for Military Health Research, King's College London, London, UK

## Correspondence to

Dr D Murphy, King's Centre for Military Health Research, King's College London, London WC2R 2LS, UK; dominic.murphy@combatstress.org.uk

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## ABSTRACT

**Introduction** Many veterans do well reintegrating to civilian life following military service. Yet, many face difficulties in finding and securing work. Veterans are more likely than civilians to experience work difficulties, but there remains little research investigating contributing factors, particularly among samples of treatment-seeking veterans. As such, the study examines predictors of not working among UK treatment-seeking veterans.

**Design** The study employed a cross-sectional design.

**Methods** Of 667 treatment-seeking UK veterans, 403 ( $M_{age}=50.94$ ) provided information on a range of demographic variables, military-related experiences, the total number of physical health conditions and mental health outcomes. Work status was categorised as not working due to illness ( $M_{age}=48.15$ ), not working due to other reasons ( $M_{age}=61.92$ ) and currently working ( $M_{age}=46.13$ ).

**Results** Prevalence rates of not working was 69%. Not working was predicted by a greater number of physical health problems as well as more years since leaving the military. Not working due to poor health was independently predicted by symptoms of post-traumatic stress disorder (PTSD) and younger age, while not working due to other reasons was predicted by older age.

**Conclusions** The study revealed that treatment-seeking veterans of younger age with a high number of physical health difficulties, symptoms of PTSD and more years since leaving the military are most at risk of not working due to ill health. The findings have important implications for identifying veterans most at risk of not working and offer the opportunity to tailor rehabilitation programmes to promote successful veteran reintegration into civilian life.

Military personnel face a range of challenges following their return to civilian life, of which an important component is securing work. Research undertaken among US veterans involved in the Iraq and Afghanistan conflicts has demonstrated substantial reductions of not working between 2011 and 2016,<sup>1</sup> with more recent estimates suggesting that only about 3% of US veterans are not working.<sup>2</sup> Although the majority of the research on veterans not working stems from US samples, figures suggest a similar rate among UK veterans (3%).<sup>3</sup> Nonetheless, veterans remain more likely to have more work-related difficulties than the civilian population,<sup>4</sup> particularly in terms of work satisfaction and activity limitations related to health.<sup>5</sup> Findings suggest that the US, Canadian and UK public perceive veterans to experience more psychological difficulties than the general population,<sup>6</sup> which

## Key messages

- ▶ Estimates suggest that more than half of treatment-seeking veterans may not be working, of which most cases can be attributed to poor health.
- ▶ Not working may be best predicted by a high number of physical health conditions.
- ▶ Not working may also be predicted by years since leaving the military.
- ▶ Not working due to poor health may be specifically predicted by symptoms of post-traumatic stress disorder and younger age while not working due to other reasons may be specifically predicted by older age.

may introduce stigmas and discrimination in the hiring process.<sup>5</sup> Challenges in securing work may also directly relate to, for example, relocating geographical residence following termination of service, having limited opportunity to look for a job in person until return to civilian life, and the low likelihood of full-time employment experiences other than military service,<sup>1</sup> but such factors require further investigation. Therefore, although the majority of veterans returning to civilian life successfully transition from military life, a minority are likely to experience employment difficulties at some point after service discontinuation.

Despite a well-founded understanding of the consequences of unemployment on mental well-being,<sup>7</sup> investigations of risk factors of not working among military veterans remain sparse. Some research has suggested that veteran work difficulties may partially be explained by certain demographic characteristics and military-related experiences. For example, differences in age among veterans may partially explain important differences in work status. More specifically, US statistics revealed that younger veterans were less likely to work as compared with civilian counterparts, especially among those who had more recently left the service.<sup>8</sup> Regarding UK Armed Forces service leavers, 12% of those who leave service within the first 4 years (ie, early service leavers (ESL)) face unemployment on their return to civilian life.<sup>9</sup> A similar trend of worse employment outcomes for veterans who leave military service earlier has also been observed in a Canadian sample.<sup>5</sup> Iverson *et al*<sup>9</sup> also observed that veterans who are married may be at a lower risk of not working, an effect that appeared to be particularly pronounced among ESL members.<sup>9</sup> Finally, veteran unemployment may be



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best predicted by time since leaving service in that most veterans are likely to experience a period of not working after initially leaving the service but go on to secure a job following the initial job search period.<sup>5 10</sup>

It is well documented that a small, but significant, minority of veterans experience persisting psychological difficulties such as depression, anxiety and symptoms of post-traumatic stress disorder (PTSD) following military service.<sup>11 12</sup> Given that an important component of recognising such difficulties is the impairment on one's functioning,<sup>13</sup> it is likely that not working may be particularly pronounced among samples of veterans seeking treatment. Initial evidence has in fact demonstrated high rates of not working among a sample of US veterans using support for their mental health difficulties.<sup>14</sup> Research has also demonstrated that in addition to predicting the likelihood of remaining in the military, good psychological well-being is likely to increase the chance of full-time employment following transition to civilian life.<sup>9</sup> It is worth further considering that military personnel are at risk of incurring physical injuries during training and combat experiences that may have persisting negative consequences on their physical abilities,<sup>15</sup> which may limit the type of employment opportunities veterans may be able to access. Considering the limited research, there remains a lack of clarity of the effects of psychological and physical difficulties on veteran work status. While some have argued that they create important barriers to securing work,<sup>16</sup> there is some indication that poor health may not account for the elevated rates of not working among veterans on a whole.<sup>10</sup> Developing a better understanding of the risk factors of not working may enable clinicians to better tailor and support successful veteran reintegration into civilian life.

As the existing research tends to focus on the general veteran population, further clarity of the factors associated with not working among a treatment-seeking population with mental health problems is necessary. Thus, the present study aims to investigate the link between work status and a range of predictors including demographic factors, military-related experiences as well as mental and physical health difficulties, in a sample of UK treatment-seeking veteran.

## METHODS

### Participants

Participants were recruited between 31 January 2015 and 1 February 2016. All participants were UK treatment-seeking veterans (ie, defined as having attended at least one treatment appointment at Combat Stress (CS) following the initial assessment appointment). CS is a UK charity offering psychological treatment for veterans' mental health difficulties, which offers nationwide coverage and receives a high number of referrals (approximately 2500 per year), yielding a representative sample of UK treatment-seeking veterans.

Of the 3335 veterans eligible to participate, 20% (n=667) were randomly selected. Sixty-three veterans did not provide sufficient address contact information and four passed away before data collection had begun. A total of 403 ( $M_{age}=50.94$ ,  $SD_{age}=12.64$ ) treatment-seeking veterans completed and returned the questionnaires, producing a response rate of 60%. The majority of the participants were male (n=386; 95.8%) and were in a relationship (n=273; 67.7%).

Data of the present study has previously been examined to understand the needs of treatment-seeking veterans, and such research has demonstrated that veteran respondents did not differ from non-respondents.<sup>17</sup>

## Measures

Participants provided basic demographic information including age and current relationship status. They also indicated current employment status (ie, full time/part time, not working due to ill health, stay at home parent/caregiver, not working but seeking employment, retired, other). They provided information regarding their military history, in terms of number of deployments and years since leaving military. Participants also provided information on the presence of 14 physical health conditions, which was assessed using a commonly used NHS screening tool.<sup>17</sup> Responses on the screening tool were summed to provide a total number of present physical health conditions.

In terms of mental health, participants completed various validated psychological questionnaires. They completed the *PTSD Checklist for DSM-5* (PCL), a 20-item measure assessing the presence and severity of PTSD symptoms<sup>18</sup>; the *General Health Questionnaire* (GHQ-12), a 12-item measure assessing general psychological distress<sup>19</sup>; the *Dimension of Anger Reactions* (DAR-5), a 5-item questionnaire assessing difficulties with anger<sup>20</sup> and the *Alcohol Use Disorders Identification Test* (AUDIT), a 10-item measure assessing problematic alcohol use.<sup>21</sup> Responses to each questionnaire was separately summed to create continuous variables for each.

## Procedure

Data were collected between April and August 2016. Participants were informed that involvement in the study was entirely voluntary and that it would not interfere with receiving clinical support at CS.

Participants were posted the questionnaires by mail a total of three times. If participants had not responded, and had not explicitly opted out, a research assistant made three attempts to phone them and completed the questionnaire via telephone.

## Data analysis

Data were prepared and descriptive statistics and correlations were computed in SPSS V.25. Employment responses were categorised into 'not working due to illness', 'not working due to other reasons' and 'currently working'. Univariate logistic regression analyses were conducted to determine whether relationships existed between the predictor variables (total number of physical health conditions, AUDIT score, PCL-5 score, GHQ-12 score, DAR-5 score) and the outcome variable (employment status). Additional univariate logistic regression analyses were then repeated with demographic (age, relationship status) and military-type (ESL status, years since leaving the military) variables as predictors of employment status.

All significant predictors were subsequently used in multivariate regression analyses. An initial unadjusted model was specified and estimated with all health-related variables as predictors of employment status. The model was then adjusted for demographic and military-type variables that were found to be significant in the univariate analyses. The regression analyses were conducted in Mplus 7.3. There were minimal amounts of missing data on the final study variables (0.2%) and these were dealt with using the full information maximum likelihood method during model estimation in Mplus.

## RESULTS

Of the sample of 403 veterans, 177 (44%) were not working due to illness, 100 (25%) were not working due to other reasons and 126 (31%) were currently employed. Further descriptive statistics of the full sample and by work status are described in

**Table 1** Descriptive statistics of the full sample and per work status

|                                      | Employment status      |                                  |                                |                              |
|--------------------------------------|------------------------|----------------------------------|--------------------------------|------------------------------|
|                                      | Full sample<br>(n=403) | Not working (illness)<br>(n=177) | Not working (other)<br>(n=100) | Currently working<br>(n=126) |
| <b>M (SD)</b>                        |                        |                                  |                                |                              |
| Age (years)                          | 50.94 (12.64)          | 48.15 (9.68)                     | 61.92 (13.60)                  | 46.13 (10.22)                |
| Years since leaving the military     | 18.87 (12.98)          | 17.80 (10.66)                    | 28.10 (15.46)                  | 13.06 (9.43)                 |
| No. of deployments                   | 1.64 (1.29)            | 1.55 (1.12)                      | 1.26 (1.14)                    | 2.05 (1.52)                  |
| No. of physical health conditions    | 2.52 (2.05)            | 2.86 (2.11)                      | 3.17 (2.13)                    | 1.52 (1.46)                  |
| AUDIT score                          | 8.42 (8.96)            | 8.97 (9.74)                      | 6.06 (8.27)                    | 9.52 (8.01)                  |
| PCL-5 score                          | 52.49 (16.96)          | 58.07 (13.74)                    | 48.86 (17.81)                  | 47.54 (18.12)                |
| GHQ-12 score                         | 6.47 (4.10)            | 7.55 (4.01)                      | 6.22 (3.97)                    | 5.16 (3.93)                  |
| DAR-5 score                          | 10.80 (5.77)           | 12.13 (5.50)                     | 9.66 (5.65)                    | 9.82 (5.88)                  |
| <b>n (%)*</b>                        |                        |                                  |                                |                              |
| Relationship status                  |                        |                                  |                                |                              |
| Single, divorced, separated, widowed | 130 (32.26)            | 66 (37.29)                       | 30 (30.00)                     | 34 (26.98)                   |
| In a relationship                    | 273 (67.74)            | 111 (62.71)                      | 70 (70.00)                     | 92 (73.02)                   |
| ESL                                  |                        |                                  |                                |                              |
| Yes                                  | 46 (11.41)             | 22 (12.43)                       | 10 (10.00)                     | 14 (11.11)                   |
| No                                   | 357 (88.59)            | 155 (87.57)                      | 90 (90.00)                     | 112 (88.89)                  |

\*Frequency and percentage per work status.

AUDIT, Alcohol Use Disorders Identification Test; DAR-5, 5-item Dimension of Anger Reactions; ESL, early service leavers; GHQ-12, 12-item General Health Questionnaire; PCL-5, PTSD Checklist for DSM-5.

**table 1.** Correlations between the study variables are presented in **table 2**. Multicollinearity was not an issue as indicated by all Variance Inflation Factor values being <2.7.

The univariate analyses revealed that, relative to the 'currently working' status, 'not working due to illness' was significantly associated with higher total number of physical health conditions (OR=1.52, 95% CI=1.32 to 1.76), higher PCL-5 score (OR=1.04, 95% CI=1.03 to 1.06), higher GHQ-12 score (OR=1.16, 95% CI=1.09 to 1.23), higher DAR-5 score (OR=1.08, 95% CI=1.03 to 1.12), more years since leaving the military (OR=1.04, 95% CI=1.02 to 1.07) and lower number of deployments (OR=0.77, 95% CI=0.65 to 0.90). Furthermore, relative to the 'currently working' status, 'not working due to other reasons' was significantly associated with higher number of physical health conditions (OR=1.63, 95% CI=1.40 to 1.91), lower AUDIT score (OR=0.95, 95% CI=0.92 to 0.99), higher

GHQ-12 score (OR=1.07, 95% CI=1.00 to 1.14), higher age (OR=1.14, 95% CI=1.09 to 1.19), more years since leaving the military (OR=1.11, 95% CI=1.08 to 1.14) and lower number of deployments (OR=0.59, 95% CI=0.44 to 0.79).

Results from the logistic regression analysis are outlined in **table 3**. The unadjusted model revealed that, relative to the 'currently working' status, 'not working due to illness' was positively associated with the total number of physical health conditions, the PCL-5 score and the GHQ-12 score. Furthermore, relative to the 'currently working' status, 'not working due to other reasons' was positively associated with the total number of physical health conditions and negatively associated with the AUDIT score. When the covariates (age, years since leaving the military, number of deployments) were added into the model (ie, adjusted model in **table 3**), the total number of physical health conditions and the PCL-5 score remained significant predictors

**Table 2** Correlation matrix of predictors of work status

|                                | No. physical health conditions | AUDIT score | PCL-5 score | GHQ-12 score | DAR-5 score | Age       | Relationship status | ESL     | Years since leaving military | No. deployments |
|--------------------------------|--------------------------------|-------------|-------------|--------------|-------------|-----------|---------------------|---------|------------------------------|-----------------|
| Employment                     | -0.256***                      | 0.074       | -0.276***   | -0.256***    | -0.183***   | -0.026    | 0.097               | 0.021   | -0.132**                     | .100*           |
| No. physical health conditions | —                              | -0.204***   | 0.072       | 0.158**      | 0.068       | 0.427***  | 0.104*              | 0.061   | 0.295***                     | -0.131**        |
| AUDIT score                    | —                              | —           | 0.168**     | 0.009        | 0.144**     | -0.240*** | -0.183***           | -0.025  | -0.161**                     | 0.123*          |
| PCL-5 score                    | —                              | —           | —           | 0.503***     | 0.596***    | -0.100*   | -0.113*             | -0.045  | 0.018                        | -0.032          |
| GHQ-12 score                   | —                              | —           | —           | —            | 0.349***    | -0.002    | -0.146**            | -0.026  | 0.009                        | -0.132**        |
| DAR-5 score                    | —                              | —           | —           | —            | —           | -0.170**  | -0.046              | -0.042  | -0.073                       | 0.056           |
| Age                            | —                              | —           | —           | —            | —           | —         | 0.060               | 0.113*  | 0.710***                     | -0.290***       |
| Relationship status            | —                              | —           | —           | —            | —           | —         | —                   | 0.136** | -0.042                       | 0.108*          |
| ESL                            | —                              | —           | —           | —            | —           | —         | —                   | —       | -0.142**                     | 0.269***        |
| Years since leaving military   | —                              | —           | —           | —            | —           | —         | —                   | —       | —                            | -0.473***       |

\*P<0.05, \*\*p<0.01, \*\*\*p<0.001.

AUDIT, Alcohol Use Disorders Identification Test; DAR-5, 5-item Dimension of Anger Reactions; ESL, early service leavers; GHQ-12, 12-item General Health Questionnaire; PCL-5, PTSD Checklist for DSM-5.

**Table 3** ORs and 95% CIs for predictors of work status

|                                | Unadjusted model             |                                   | Adjusted model               |                                   |
|--------------------------------|------------------------------|-----------------------------------|------------------------------|-----------------------------------|
|                                | Not working due to illness†  | Not working due to other reasons† | Not working due to illness†  | Not working due to other reasons† |
|                                | OR<br>(95% CI)               |                                   | OR<br>(95% CI)               |                                   |
| No. physical health conditions | 1.484***<br>(1.269 to 1.735) | 1.621***<br>(1.371 to 1.916)      | 1.516***<br>(1.276 to 1.801) | 1.302**<br>(1.082 to 1.567)       |
| AUDIT score                    | 0.980<br>(0.953 to 1.008)    | 0.957*<br>(0.921 to 0.994)        | 0.979<br>(0.951 to 1.009)    | 0.972<br>(0.937 to 1.007)         |
| PCL-5 score                    | 1.035**<br>(1.013 to 1.056)  | 1.008<br>(0.987 to 1.029)         | 1.031**<br>(1.011 to 1.051)  | 1.005<br>(0.983 to 1.027)         |
| GHQ-12 score                   | 1.077*<br>(1.004 to 1.155)   | 1.047<br>(0.972 to 1.127)         | 1.072<br>(1.000 to 1.150)    | 1.035<br>(0.941 to 1.122)         |
| DAR-5 score                    | 1.006<br>(0.955 to 1.060)    | 0.978<br>(0.923 to 1.036)         | 1.008<br>(0.957 to 1.062)    | 1.031<br>(0.950 to 1.127)         |
| Age                            | —                            | —                                 | 0.959*<br>(0.928 to 0.991)   | 1.085**<br>(1.028 to 1.145)       |
| Years since leaving military   | —                            | —                                 | 1.050**<br>(1.014 to 1.088)  | 1.052**<br>(1.014 to 1.092)       |
| No. deployments                | —                            | —                                 | 0.920<br>(0.747 to 1.133)    | 1.048<br>(0.765 to 1.436)         |

\*P<0.05, \*\*p<0.01, \*\*\*p<0.001.

†Reference group=currently working.

AUDIT, Alcohol Use Disorders Identification Test; DAR-5, 5-item Dimension of Anger Reactions; GHQ-12, 12-item General Health Questionnaire; PCL-5, PTSD Checklist for DSM-5.

of ‘not working due to illness’, relative to the ‘currently working’ status, but the GHQ-12 scores were no longer a significant predictor. The adjusted model revealed that the total number of physical health conditions also remained a significant predictor of ‘not working due to other reasons’, relative to the ‘currently working’ status, but that the AUDIT score was no longer significant.

Looking specifically at the covariates, there was a negative association between age and ‘not working due to illness’ and a positive association between age and ‘not working due to other reasons’, relative to the ‘currently working’ status. Years since leaving the military was positively associated with ‘not working due to illness’ and ‘not working for other reasons’, relative to the ‘currently working’ status. The number of deployments was not significantly associated with work status.

## DISCUSSION

### Present findings

Using a dataset that had previously been used to demonstrate the unique set of needs that UK treatment-seeking veterans face,<sup>17</sup> the current study aimed to examine the predictors of work status in a sample of treatment-seeking military veterans. It was found that more than two-thirds of the sample reported not working (69%), of which about two-thirds attributed this to illness. A high number of physical health conditions was the strongest predictor not working. Participants’ age and years since leaving the military were also significant predictors of not working. Participants were more likely to report not working as the number of years since leaving the military increased. Compared with participants who reported currently being employed, younger participants were more likely to report not working due to illness while older participants were more likely to report not working due to other reasons. Finally, veterans with PTSD symptomology were more likely to report not working due to poor health.

### Interpretation

Physical and mental health difficulties have previously been linked with unemployment across a number of European countries,<sup>22</sup>

and this association may be stronger for veterans than for civilians.<sup>23 24</sup> It is common for military personnel to experience a range of physical and mental health difficulties after returning from deployment.<sup>15</sup> Such difficulties may be quite debilitating and may therefore have important consequences in securing and maintaining labour-market engagement. For example, chronic pain may prevent engaging in certain physical tasks, and it may distract and limit one’s ability to focus on other, less extraneous responsibilities. Moreover, symptoms of different mental health conditions, for example, PTSD, may result in behavioural changes leading to functional impairment.<sup>13</sup> Fear and hypervigilance may cause an individual suffering from PTSD to withdraw from social interactions and remain indoors, which may pose a great challenge to go out and seek employment. Furthermore, many individuals with PTSD tend to experience memory and concentration difficulties, which may directly affect their ability to perform work-relevant tasks. The observed link between not working and PTSD is corroborated by previous similar findings among US treatment-seeking veterans.<sup>22</sup> It is likely that in addition to the functional impairment resulting from physical and psychological difficulties, engaging in time-consuming treatment may further contribute to not working.

The finding that the likelihood of not working may differ by age was notable. Our results suggest that younger veterans may be at risk of not working due to physical or mental health difficulties, whereas for older veterans, the reason could be retirement. It is worth considering that previous research has proposed that PTSD symptomatology may decrease as age increases, across employment status.<sup>25</sup> Given that the study demonstrated that PTSD symptomatology was only predictive of not working due to ill health, it is likely that the risk of younger veterans to not work may decrease over time.

Although alcohol use and difficulties with anger were not found to be strong predictors of work status, they remain relevant when considering the implementation of appropriate employment support. Scores of eight or more on the alcohol measure is indicative of ‘hazardous and harmful’ levels of consumption,<sup>21</sup> suggesting that alcohol intake should be considered among



veterans not working due to illness and that those who report current employment may similarly benefit from support in this domain. Difficulties with anger management also appear to be particularly prominent among veterans reporting not working due to illness, and, plausibly, may impact one's ability to appropriately function at work (eg, work effectively with colleagues). This would likely also require attention when offering employment support.

Contrary to findings suggesting that veterans are likely to not work after leaving the military due to searching for a job, but that rates of not working reduces as time goes on,<sup>10</sup> this study found the rate of not working increases over time. More specifically, the results of the present study suggest that the risk of treatment-seeking veterans not working increases as the years since leaving the military increases. This may potentially be explained by some veterans reaching retirement age, and by the persistence of untreated physical or psychological difficulties, as veterans may take as long as 11 years before seeking help for mental health difficulties.<sup>26</sup>

### Limitations

One important methodological limitation of the present study relates to its cross-sectional design. We used physical and mental health difficulties as predictors of work status, however, research has shown that not working in turn can lead to further health complications.<sup>7</sup> Future longitudinal research may be useful to better understand the relationships identified in the present study.

Another limitation of the study is the specific focus on treatment-seeking veterans who were receiving support at CS. It remains uncertain whether the findings generalise to other veteran populations, such as those who need support but who do not seek out treatment. Furthermore, as there remains limited research of the predictors of work status in the general veteran population, it is unclear whether the predictors identified in the present study represent risk factors specifically among those seeking treatment.

Finally, the present study is unable to draw a distinction between not working while searching for work (ie, unemployment) and otherwise not working while not searching. Future research may be useful to identify whether risk factors may vary on the mentioned conditions.

### Implications

The present findings suggest that a substantial number of veterans seeking treatment do not work due to poor health. By examining a range of predictors, the study identified factors that can be used to help identify treatment-seeking veterans that may be most at risk of not working. It provides empirical evidence supporting the need to focus on treatment-seeking veterans with PTSD and multiple physical problems in terms of providing appropriate support to enable successful engagement in the labour-market. The study also provided an indication that veterans' age and years since leaving the military may be important in identifying at-risk veterans. Despite not being possible to define meaningful boundaries of the effects of such variables on employment, it was outside the scope of the present study to develop a more detailed picture of the relationships and potential confounds. Yet, this line of research is essential considering the robustness of the negative effect of unemployment on mental health that is reflected in terms of depression, anxiety, self-esteem and subjective well-being.<sup>7</sup>

### CONCLUSIONS

This study extends previous research by identifying key factors that may explain an increased risk of not working among veterans seeking support. The study demonstrated that a proportion of veterans seeking help for their mental health difficulties are likely to not work, particularly those who suffer from a greater number of physical health conditions. Considering the high rate of not working among treatment-seeking veterans, especially in comparison to reports of the general veteran population,<sup>2,3</sup> it is necessary to ensure that mental health support adopts a holistic approach to support reintegration into civilian life. Given the links between employment and well-being,<sup>7</sup> provision of appropriate employment support may be useful in helping support treatment-seeking veterans' wider set of difficulties.

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**Data availability statement** Data are available on reasonable request. Data are not publicly available. Data requests will be considered by the corresponding author.

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