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BRIEF REPORT

The impact of the COVID-19 pandemic on treatment-seeking veterans in the united kingdom with preexisting mental health difficulties: A longitudinal study

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Abstract

Individuals with preexisting psychological difficulties are at risk of further deterioration of their mental well-being during the COVID-19 pandemic. This longitudinal study, conducted during the period between two national lockdowns, aimed to investigate the impact of the COVID-19 pandemic on veterans in the United Kingdom with preexisting mental health difficulties. Treatment-seeking veterans with preexisting mental health difficulties ($N = 95$) were surveyed in two waves. Wave 1 was conducted at the end of the first lockdown (June 2020–July 2020), and Wave 2 took place during the second lockdown (November 2020). Participants completed measures to assess symptoms of posttraumatic stress disorder (PTSD); common mental health difficulties (CMDs), including anxiety and depression; anger; and alcohol use. Initial analyses revealed no significant changes in symptoms of PTSD, CMDs, anger, or alcohol use between the lockdowns, $ps = .247–.986$. However, veterans who experienced more COVID-19–related stressors were more likely to experience increases in PTSD, odds ratio (OR) = 6.30, $p = .002$, and CMD symptoms, $OR = 4.32$, $p = .025$. Participants with lower levels of social support during the second lockdown were more likely to experience increased anger difficulties, $OR = 0.91$, $p = .025$. The findings suggest that although mental health among veterans in the United Kingdom may have remained relatively stable between the two lockdowns, those who reported more COVID-related stressors and lower levels of social support may have been particularly vulnerable to symptom exacerbation. Such findings hold important implications for tailoring support for veterans during the COVID-19 pandemic.

In March 2020, the novel coronavirus disease (COVID-19) was declared a global pandemic (World Health Organization [WHO], 2020). Countries imposed varying degrees of restrictions that ranged from social distancing (i.e., maintaining physical space between one's self and others) to complete lockdowns involving school and business closures, remote working and schooling, and little-to-no contact with individuals outside one's household (Google, 2020; Hale & Webster, 2020). Despite the necessity of such measures, the COVID-19 pandemic and associated restrictions resulted in increased levels of psychological distress among the general population (Pierce et al., 2020; Sønderskov et al., 2020; Wang et al., 2020). Furthermore, the impact on mental health appeared to be unequally

distributed, with individuals who experienced health-related, social, and structural vulnerabilities being the most at risk (Douglas et al., 2020; Jenkins et al., 2021). Accumulating evidence suggests that individuals with pre-existing mental health difficulties may be particularly at risk of further mental health deterioration due to the COVID-19 pandemic (e.g., Bank & Xu, 2020; Murphy et al., 2020; Zhou et al., 2020).

In general, a notable proportion of the veteran population in the United Kingdom is likely to experience psychological difficulties, including symptoms of posttraumatic stress disorder (PTSD; 6.2%), anxiety and depression (21.9%), and substance misuse (10.0%) (Stevelink et al., 2018). Findings that individuals with anxiety-related pre-existing difficulties, such as anxiety disorders and PTSD, may be particularly vulnerable during the COVID-19 pandemic (Asmundson et al., 2020) suggest that veterans experiencing such difficulties may be especially at risk of further mental health difficulties. In line with this finding, there appeared to be an increase in the number of veterans seeking support for their mental health during the first lockdown in the United Kingdom (Help For Heroes, 2020). The findings from another study further demonstrate that treatment-seeking veterans in the United Kingdom with preexisting mental health difficulties were at an increased risk of experiencing anxiety and depression during the pandemic, and that those with lower levels of social support and more COVID-related stressors were particularly vulnerable (Murphy et al., 2020). Still, there remains a paucity of research investigating ongoing changes in veteran well-being during the COVID-19 pandemic. It is essential to understand the impact the ongoing nature of the pandemic as well as the governmental attempts to balance the health and socioeconomic effects of the pandemic via changing restrictions (Hardinges, 2021) have on veteran well-being. As such, the present study investigated changes in mental well-being between the first and second national lockdowns in the United Kingdom in a sample of treatment-seeking veterans with preexisting mental health difficulties.

METHOD

Participants and procedure

Participants were recruited via a charity in the United Kingdom that provides psychological support to veterans seeking support for symptoms of PTSD and other comorbid mental health difficulties. The sample is considered to be representative of the wider treatment-seeking veteran population in the United Kingdom due to the charity's nationwide coverage and the high number of annual referrals (Murphy et al., 2015). We defined treatment-seeking as having attended at least one appointment with the charity between January 1, 2019, and December 31, 2019.

TABLE 1 Sociodemographic and military characteristics of the sample

Characteristic	*n*	%
Sex		
Female	5	5.3
Male	90	94.7
Age		
18–40	19	20.0
41–50	23	24.2
51–60	30	31.6
≥ 61	23	24.2
Service branch		
Royal Navy	65	68.4
Army	15	15.8
Royal Air Force	15	15.8
Living arrangement		
Living alone	25	28.1
Not living alone	64	71.9
Employment before COVID-19		
Working	46	51.7
Not working	43	48.3
Relationship status		
In a relationship	60	63.2
Single	35	36.8
Self-reported probable COVID-19 case	14	16.5
COVID-19–related bereavement	10	11.8
Mistrust of COVID-19 management		
Mistrust of the public	66	77.7
Mistrust of the government	33	38.8
Mistrust of the media	72	84.7

Note: $N = 95$. Frequencies may not add up to 95 due to missing values.

Participants in the present sample had previously been randomly selected to take part in a cross-sectional survey investigating the impact of the pandemic on veterans with preexisting mental health difficulties (Murphy et al., 2020). Of the 275 veterans who were initially contacted, 95 (34.5%; $M_{age} = 51.12$ years, $SD = 10.67$, range: 29– 70 years) took part in the present study.

Sociodemographic and military characteristics of the sample are presented in Table 1. Veterans who responded to the survey ($M = 51.12$ years, $SD = 10.67$) were significantly older than those who did not respond ($M = 47.44$ years, $SD = 11.14$), $z = -2.78$, $p = .006$. There were no differences in sex, $\chi^2(1, N = 275) = 0.01$, $p = .925$; relationship status, $\chi^2(1, N = 270) = 1.00$, $p = .318$; PTSD symptoms, $\chi^2(1, N = 246) = 1.93$; $p = .165$; symptoms of common mental health difficulties (CMDs), $\chi^2(1, N = 264) = 0.48$,

$p = .772$; anger difficulties, $\chi^2(1, N = 241) = 0.08$, $p = .772$; or hazardous alcohol use, $\chi^2(1, N = 155) = 0.79$, $p = .374$. Thus, weighted responses were only generated for age.

The study was approved by the research department at the charity from which the sample were recruited. The present study was a two-wave longitudinal study. Wave 1 data were collected at the end of the first lockdown (i.e., between June 2020 and July 2020), and Wave 2 data were collected during the second lockdown (i.e., November 2020). For each wave, participants were sent an email with a direct link to the online survey. Individuals were informed of the aim of the study, reminded that participation was voluntary, and provided with instructions on how to withdraw their consent if they no longer wanted to take part. Data from Waves 1 and 2 included information regarding mental health and well-being, alcohol use, social support, and the impact of the COVID-19 pandemic. Wave 2 data also included information regarding veterans' trust in the media, the public, and the government during the pandemic.

Measures

Demographic characteristics

Demographic data, including sex, age, previous service within the United Kingdom Armed Forces, relationship status, and living arrangements, were collected at Wave 1.

Common mental health difficulties

Participants completed a range of mental health measures at Wave 1 and 2, reporting on symptoms they experienced over the previous 4 weeks. The 12-item General Health Questionnaire (GHQ-12; Goldberg & William, 1998) was used to assess symptoms of CMDs, including anxiety and depression. Items are rated on a 4-point scale, with response options of *less than usual*, *no more than usual*, *rather more than usual*, and *much more than usual*. Items are scored using a bimodal (i.e., 0, 0, 1, 1) GHQ scoring method, allowing for a maximum score of 12. A cutoff score of 4 indicates the likely presence of CMDs. In the present sample, Cronbach's alpha was .87.

PTSD symptoms

PTSD symptoms, based on the criteria in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-5*), were assessed using the 20-item PTSD Checklist for *DSM-5* (PCL-5; Weathers et al., 2013). Items are rated on a 5-point Likert scale, ranging from 1 (*not at all*) to 5 (*extremely*). A cutoff score of 34 was used to indicate probable PTSD; this score was previously validated as the optimum cut-off score among treatment-seeking veterans in the United Kingdom (Murphy et al., 2017). In the present sample, Cronbach's alpha was .96.

Anger difficulties

The five-item Dimensions of Anger Reactions–Revised (DAR-5; Forbes et al., 2014) was used to assess difficulties with anger. Items are rated on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*very much*). A cutoff score of 12 to indicates clinically significant anger. In the present sample, Cronbach's alpha was .93.

Alcohol use

The 10-item Alcohol Use Disorders Identification Test (AUDIT; Babor et al., 2001) was used to assess alcohol consumption. Individuals first respond to an initial item asking how often they have drunk alcohol in the past year, which is rated on a scale of 0 (*never*) to 5 (*4 or more days a week*). Participants then indicate how many drinks containing alcohol they consume on a typical day when they are drinking, with responses rated raging from 0 to 30 or more. There are six additional items related to respondents' experience of drinking, with response options of 0 (*never*) to 4 (*daily or almost daily*). Finally, two items are used to assess the impact of drinking, with responses rated on a scale ranging from 0 (*no*) to 2 (*yes, in the last year*). A cutoff score of 8 indicates hazardous drinking. In the present study, Cronbach's alpha was .88.

Follow-up assessment

At Wave 2, participants also indicated how their symptoms of CMDs, PTSD, and anger, as well as their alcohol use, compared with their symptoms or use during the first lockdown.

Social support

The six-item Perceived Social Support questionnaire (Kliem et al., 2015) was used to assess experiences of social support. Items are rated on a 5-point Likert scale, with response options ranging from 1 (*not at all*) to 5 (*very true*).

Scores are totalled, with higher scores indicating higher levels of social support. In the present sample, Cronbach's alpha was .87.

Organizational mistrust

Participants were asked to report whether they trusted the general public to follow government or local guidelines to help manage the pandemic, if they believed the government was doing its best to manage the pandemic, and if the media were accurately covering the pandemic crisis.

COVID-19–related stressors

Finally, participants were asked to report their experiences of probable COVID-19 infection, COVID-related bereavement, and changes in employment due to the pandemic. They were also asked to report any COVID-related stressors they experienced, such as financial (e.g., unable to pay bills), health (e.g., difficulties accessing required medication), and general life (e.g., changing or delaying major life plans or events) difficulties related to the pandemic.

Data analysis

Data were initially screened for inaccuracies in data entry and missing values, and outliers were assessed graphically. If more than 50% of data were missing, the participant was excluded from analyses. Missing values were replaced with the lowest possible value if 25% of the items or less were missing per measure. If a participant was missing data for more than 25% of items, the sum score was not computed and counted as missing (see Stevelink et al., 2018).

A multivariate logistic regression model was fitted to explore predictors of response (i.e., sex, relationship status, and age) and generate response weights to account for nonresponse. Response weights indicated the reverse probability of responding in the sampled group and were influenced by the factors associated with each response, as indicated by the previously described analysis. Weighted analyses were used to improve the validity of the findings, using the assumptions that data were missing at random and the variables used to model nonresponse were correctly modeled.

Multiple paired sample t tests were conducted using PTSD (PCL-5), CMDs (GHQ-12), anger difficulties (DAR-5), and alcohol use (AUDIT) scores to investigate changes in mental well-being between Wave 1 and Wave 2. Changes were then dichotomized per outcome, as 0 for improvements or no change and 1 for symptom worsening, to prevent potential skewing of data that could occur in analyzing the pooled dataset. Multiple logistic regressions were then conducted per outcome variable to explore associations between the deterioration of mental health and sociodemographic and COVID-19–related factors. All analyses were conducted using STATA (Version 13.0).

RESULTS

Changes in veteran mental health between Lockdown 1 and Lockdown 2

The numbers of participants who met the case criteria for PTSD, CMDs, anger difficulties, and hazardous alcohol use during Waves 1 and 2 are presented in Table 2. At Wave 2, more than half of the sample reported perceiving that their symptoms of CMDs (59.0%), PTSD (53.9%), and anger (50.6%) had worsened since Wave 1. However, there were no significant changes with regard to meeting the criteria for PTSD, $t(86) = -0.13$, $p = .552$, 95% CI [−2.98, 2.61]; CMDs, $t(93) = -1.24$, $p = .891$, 95% CI [−1.44, 0.33]; anger difficulties, $t(85) = -2.23$, $p = .986$, 95% CI [−2.02, −0.12]; or hazardous alcohol use, $t(52) = 0.69$, $p = .247$, 95% CI [−0.87, 1.77], between Waves 1 and 2.

Predictors of mental health deterioration between Lockdown 1 and Lockdown 2

Change scores indicated that 52.9%, 52.3%, 47.9%, and 45.2% of the sample experienced increases in PTSD symptoms, anger difficulties, CMD symptoms, and alcohol use, respectively. Associations between sociodemographic and COVID-related factors and changes in mental well-being between Wave 1 and Wave 2 are presented in Table 3. Veterans who reported higher levels of social support at Wave 2 were less likely to report a deterioration in anger difficulties, odds ratio (OR) = 0.91, 95% CI [0.84,0.99], $p = .025$. Individuals who reported higher numbers of COVID-related stressors during the pandemic were more likely to experience a deterioration in symptoms of PTSD, $OR = 6.30$, 95% CI [1.97, 20.13], $p = .002$, and CMDs, $OR = 4.32$, 95% CI [1.21, 15.39], $p = .025$,

Exploratory analyses

A substantial number of veterans reported mistrust in how the media (84.7%), public (77.7%), and government (38.8%) handled the COVID-19 pandemic. There were no significant associations between mistrust and mental health changes in PTSD, ps = .178–.821; CMDs, ps = .334–.986;

TABLE 2 Reported mental health difficulties and alcohol use during Lockdowns 1 and 2

	Lockdown 1				Lockdown 2			
Variable	***M***	***SD***	***n***	**%**	***M***	***SD***	***n***	**%**
PTSD								
PCL-5 score	38.49	19.69			38.31	19.76		
PTSD cases			46	50.0			48	53.9
PTSD worse due to COVID-19			66	71.7			50	56.2
CMDs								
GHQ-12 score	6.73	3.93			6.18	4.33		
CMD cases			70	74.5			62	65.3
CMDs worse due to COVID-19			72	76.6			56	59.0
Anger difficulties								
DAR-5 score	13.24	5.89			12.17	5.41		
Anger cases			53	57.6			44	50.6
Anger worse due to COVID-19			52	56.5			44	50.7
Alcohol misuse								
AUDIT score	8.89	8.04			9.34	8.62		
Hazardous drinking[a]			23	41.1			33	38.8
Alcohol use worse due to COVID-19			23	26.1			13	15.3

Note: Frequencies may not add up to 95 due to missing values. PTSD = posttraumatic stress disorder; PCL-5 = PTSD Checklist for *DSM*-5; CMD = common mental disorder; GHQ-12 = General Health Questionnaire−12; DAR-5 = Dimensions of Anger Reactions−5; AUDIT = Alcohol Use and Disorder Identification Test.
[a]Defined as a score of 8 or higher.

anger difficulties, *p*s = .574–.918; or alcohol use, *p*s = .205–.878. However, more severe PTSD symptoms at Wave 2 were associated with public, $B = 12.01$, 95% CI [1.90, 22.12], $p = .020$, and governmental mistrust, $B = 9.54$, 95% CI [0.86, 18.22], $p = .032$, but not media mistrust, $B = -4.78$, 95% CI [−16.82, 7.27], $p = .432$.

DISCUSSION

This longitudinal study examined the impact of the COVID-19 pandemic in the United Kingdom between the first and second national lockdowns on the mental well-being of a sample of treatment-seeking veterans with pre-existing mental health difficulties. The findings suggest that difficulties with PTSD, CMDs, anger, and alcohol use remained relatively stable across the two lockdowns. During the second lockdown, a substantial number of veterans still met the case criteria for CMDs (65.3%), PTSD (53.9%), and anger difficulties (50.6%). A smaller proportion met the case criteria for hazardous alcohol use (33.8%). Further analyses revealed that a notable proportion experienced a deterioration in mental well-being between the two lockdowns. Specifically, veterans who experienced a higher number of COVID-related stressors were most at risk of an exacerbation of PTSD and CMD symptoms, whereas those who reported lower levels of social support were most at risk of experiencing increased anger difficulties.

Although the levels of mental health difficulties in the present sample of treatment-seeking UK veterans were lower compared with before the pandemic (i.e., 72.3%, 82.4%; 74.4%, and 42.7% for CMDs, PTSD, anger, and alcohol use, respectively; Murphy et al., 2019) and during the first lockdown (76.9%, 55.7%, 56.4%, and 45.8% for CMDs, PTSD, anger, and alcohol use, respectively; Murphy et al., 2020), there are a few possible explanations. PTSD prevalence may have remained lower in the present study compared to prepandemic times due to the nature of the implemented lockdowns (see Murphy et al., 2020). Reduced contact with the outside world may have reduced veteran contact with triggers that could activate the threat responses central to PTSD (see Ehlers & Clark, 2000). As experiencing more COVID-related stressors may leave veterans vulnerable to an exacerbation of PTSD and CMD symptoms, such stressors may potentially play a role in triggering the vital threat responses. Alternatively, such an exacerbation of difficulties could be related to difficulties in identifying, tolerating, and managing the associated negative emotions. Such an explanation is in line with findings demonstrating that difficulties in regulating emotions elicited by a stressor may directly exacerbate symptoms of PTSD (Short et al., 2018). Still, 86.0% of veterans in the present sample who met the criteria for PTSD at Wave 1 continued to meet the criteria at Wave 2. On the other hand, 77.3% of participants who did not meet the PTSD criteria at Wave 1 remained below the threshold for a probable

TABLE 3 Sociodemographic and COVID-related predictors of worsened veteran well-being between Lockdowns 1 and 2

	Well-being outcomes							
	PTSD (PCL-5)		CMD's (GHQ-12)		Anger (DAR-5)		Alcohol (AUDIT-C)	
Variable	*OR*[a]	95% CI	*OR*[a]	95% CI	*OR*[a]	95% CI	*OR*[a]	95% CI
Being single	2.17	[0.78, 6.07]	1.20	[0.43, 3.38]	0.90	[0.32, 2.50]	0.90	0.24, 3.32]
Age	0.99	[0.94, 1.04]	0.97	[0.92, 1.02]	1.01	[0.97, 1.05]	0.98	[0.92, 1.04]
Greater social support	0.99	[0.92, 1.07]	0.98	[0.91, 1.06]	0.91	[0.84, 0.99]*	0.99	[0.90, 1.09]
COVID-related bereavement	1.64	[0.39, 6.84]	2.76	[0.55, 13.89]	1.32	[0.33, 5.37]	0.18	[0.02, 2.09]
Probable COVID case	1.33	[0.34, 5.20]	2.96	[0.67, 13.18]	1.08	[0.28, 4.18]	1.07	[0.24, 4.73]
More COVID-related stressors	6.30	[1.97, 20.13]**	4.32	[1.21, 15.39]*	2.78	[0.91, 8.46]	0.47	[0.24, 4.73]

Note: PTSD = posttraumatic stress disorder; PCL-5 = PTSD Checklist for *DSM*-5; CMD = common mental disorder; GHQ-12 = General Health Questionnaire–12; DAR-5 = Dimensions of Anger Reactions–5; AUDIT = Alcohol Use and Disorder Identification Test.

[a]Adjusted for all variables in the table.

*$p < .05$, **$p < .01$.

PTSD diagnosis at Wave 2, whereas the other 22.7% met the PTSD criteria at Wave 2. It remains unclear whether such trends specifically reflect the impact of COVID-19–related stressors and what other factors may have contributed to changes in mental well-being; however, such questions fell outside the scope of the current study.

Notably, symptoms of CMDs (i.e., anxiety and depression) were the most frequently endorsed mental health difficulties during both lockdowns. Considering the limits imposed on daily life during the COVID-19 pandemic, heightened symptoms of anxiety and depression may mimic trends observed in the general population (Pierce et al., 2020; Sønderskov et al., 2020). Loss of routine, confinement, and a reduction in social and physical contact can result in distressing feelings of boredom, frustration, and isolation (Brooks et al., 2020). Furthermore, difficulty in tolerating uncertainty, which plays a key role in the maintenance of anxiety and depression (Carleton et al., 2012), also appears to be key in the increased levels of anxiety and depressive symptoms during the COVID-19 pandemic (Rettie & Daniels, 2021). Although it remains outside the scope of the present study, such factors may contribute to the higher rates of CMDs we observed in the present sample.

Finally, exploratory analyses revealed high levels of veteran mistrust in how the media, public, and government handled the COVID-19 pandemic. Despite no association between mistrust and mental health changes, mistrust appeared to be associated with more severe PTSD scores. A lack of clear information from public health authorities regarding guidelines and reasons to follow these guidelines may have served as a stressor during the pandemic (see Brooks et al., 2020). This is particularly relevant considering that COVID-19–related stressors may exacerbate symptoms of PTSD and CMDs among veterans with preexisting mental health difficulties. Furthermore, a lack of clarity, particularly regarding risk levels during a pandemic, may lead people to imagine worst-case outcomes (Desclaux et al., 2017), which is understood as a hallmark characteristic of generalized anxiety disorder (American Psychiatric Association, 2013). Generalized trust promotes health and well-being (Dinesen, 2012) and may help individuals cope with major adversities. As it was outside the scope of the present study, the reasons for veteran mistrust during the pandemic remain unclear.

Several limitations require consideration. First, the relatively small sample size may have limited our ability to detect small effect sizes and the predictive ability of the analyses. Second, the study had a low response rate (34.5%), and it is worth considering whether the present findings may be generalized to the wider population of veterans with preexisting mental health difficulties. Veterans face many barriers that prevent them from seeking

support (e.g., Murphy & Busuttil, 2019; Rafferty et al., 2017), and those with higher levels of social support may be more inclined to use psychological support (Graziano & Elbogen, 2017). Veterans with lower levels of social support, who appear to be particularly vulnerable to mental health deterioration during the COVID-19 pandemic, may have been underrepresented in the present study. Third, Wave 2 data were collected at the start of the second lockdown and reflected the "past 4 weeks." Further mental health changes during the second lockdown may have been missed by the sampling period of Wave 2. Finally, demographic data were only collected at Wave 1. It remains unclear whether changes occurred between the two assessments; for example, it is possible veterans experienced changes in living arrangements, changes related to the pandemic, or changes in their mental health.

There is a clear need to further investigate the long-term impact of the COVID-19 pandemic on veteran well-being. Future researchers may specifically wish to further describe the profile of veterans with preexisting mental health difficulties who may be most susceptible to an exacerbation of such difficulties during the pandemic. It is also of interest to examine the specific factors that may contribute to such deterioration, as previously speculated. Future researchers may also wish to investigate veteran mistrust during the pandemic to identify reasons for mistrust and their impact on individuals' well-being. Finally, it remains highly relevant to investigate the mental health impact of the pandemic on veterans with preexisting mental health difficulties who are not currently seeking psychological support.

Treatment-seeking veterans with preexisting mental health difficulties in the United Kingdom may have experienced an exacerbation of symptoms during the first national lockdown (Murphy et al., 2020). The present findings suggest that whereas veteran mental health was comparable between the first two lockdowns, those who experienced more COVID-related stressors and those who reported lower levels of social support are particularly at risk of further mental health deterioration during the pandemic. Such findings highlight the need to further investigate the well-being of veterans during the COVID-19 pandemic. Furthermore, given the ongoing nature of the pandemic, it remains necessary for service providers to consider how to tailor support for veterans who may be at most risk of symptom exacerbation due to changing pandemic-related restrictions. Service providers may wish to consider, where possible, ways to reduce COVID-related stressors that veterans may face and increase opportunities for veterans to have additional support.

CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare.

OPEN PRACTICES STATEMENT

The study reported in this article was not formally preregistered. Neither the materials nor the data have been made available on a permanent third-party archive; requests for the materials or data can be sent via email to the corresponding author at dominic.murphy@combatstress.org.uk.

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