Implications of the COVID-19 Disease for the Mental Health of Recovered Israeli Air Force Patients

Shirley Gordon[1], Dror Garbi[1], Leah Shelef[1,2*] and Shachar Shapira[2,3]

[1]*Psychology Branch, Israeli Air Force, Ramat-Gan Israel*

[2]*Department of Military Medicine, Faculty of Medicine, The Hebrew University of Jerusalem*

[3]*Medical Headquarters, Israeli Air Force, Ramat-Gan Israel*

Corresponding e-mail: lshelef4@gmail.com

ABSTRACT

Objective: *To date, little evidence has been published about the mental health implications of recovery from COVID-19. The current study aimed to identify the mental challenges encountered by Israeli Air Force (IAF) personnel who recovered from COVID-19.* ***Method:*** *A study of 350 participants (64% male; 43.3% career personnel; Mean age 25.5, SD=7.78) recovering from COVID-19 infection. Issues addressed: General contentment with life, perceived personal health in routine and over the recovery period, anxiety, and satisfaction with the handling of the COVID-19 crisis by the military and the government.* ***Results:*** *The respondents' satisfaction with the military handling of the crisis was above average (5.52 out of 10), and went up with age. An association was found between lower satisfaction and anxiety levels. The post-disease perception of health was significantly lower than in routine. Women rated their post-disease state of health lower than men, while no gender difference emerged in routine. Of the recovered individuals, 43% feared reinfection, and 30% were concerned that the virus lingered in their bodies for good. Finally, about 65% feared the future health effects of the virus, and 62% feared infecting their dear ones.* ***Conclusions:*** *The convalescent population requires close medical follow-up and supportive care, with special attention to women, who reported high anxiety. It seems that many recovering individuals have misconceptions about the long-term effects of the disease. Dissemination of known medical information should therefore be expanded to reduce uncertainty.*

Keywords: COVID-19, Israeli Air Force, Recovery from COVID-19

INTRODUCTION

The COVID-19 outbreak is typically associated with fear of infection, although a growing number of Israelis have been vaccinated [1]. There are signs that the epidemic's end is not near, and its implications will therefore require on-going attention. Evidence of the psychological consequences of the COVID-19 has revealed symptoms of depression, anxiety, and post-traumatic stress in considerable parts of the population [2,3]. The information on these symptoms in people who have recovered from COVID-19 is scant, nor is sufficiently known about those who have recovered from MERS and SARS. A study of a small sample of 24 recovering patients during the MERS outbreak of 2015 revealed that they were at high risk of psychological symptoms. 70.8% of them (n=17) showed psychiatric symptoms, and 41.7% (n=10) received a psychiatric diagnosis during their stay in the hospital. Half of them reported stress, (n=9), 41.2% complained of insomnia, and 29.4% (n=7) reported a depressed mood [4]. Following the outbreak of SARS, one study reported that 35% of the recovering patients (n=180) experienced moderate-to-severe levels of anxiety and depression [5]. Another study of 286 recovering patients, found to have post-trauma symptoms as well as depression and anxiety [6]. Several studies have found that in convalescent patients, psychiatric symptoms were still apparent one to four years after recovery [7-9]. The little information available on the COVID-19 epidemic indicates that it has a notable impact on mental health [10]. This regards the effect of the virus on the infected people but also its impact on the medical staff treating them [11].

Several studies conducted worldwide have shown that some recovery cases displayed mental symptoms including stress, anxiety, depressive symptoms, fear, denial, and anger [1]. A recent study analyzed psychiatric symptoms in

62,000 COVID-19 patients [12]. The study found that 20% of them were diagnosed with a psychiatric disorder over the 90 days that followed the positive result. This rate is twice as high as that found in the general population in the same period. The most common disorders that emerged after a COVID-19 infection were anxiety, depression, and insomnia [12].

The Present Study

Because of the above, the Israeli Air Force Chief Medical Officer instructed the psychological section to study and identify the mental challenges faced by IAF personnel. The present study, which investigates the mental implications of COVID-19 for a recovering population, follows two previous studies: The first was run on healthy IAF personnel under imposed lockdown, and the second-on individuals awaiting sampling results for suspected infection. In the first study, about half of the respondents answered that they experienced mood swings manifested in a low mood, nervousness, constant sense of fear, or concern about being infected. One-third reported sleep difficulties [13]. The results of the second study revealed that distress was more acute in those who were isolated at home than at a military medical facility. Women had higher levels of anxiety than men. Distress levels were higher in soldiers in compulsory military service than in career personnel. The findings of those two studies led to investigating the mental state of convalescent COVID-19 patients.

METHODS

Procedures and Measurements

The incentive for launching the present study was an accumulation of complaints about the appearance of mental symptoms during convalescence and after recovery from COVID-19. The participants all agreed to take part in the study and completed anonymously a questionnaire sent by a link to their mobile phone. The Army Ethics Committee approved the study.

Participants

The surveyed population comprised IAF compulsory service and career personnel diagnosed with COVID-19, at different stages of recovery from the disease. 63.7% of the participants were male (n=184); 48.4% career personal (n=140); Mean age 25.5, SD=7.78). Table 1 presents the demographics, personal, and medical characteristics of the 350 respondents, who were in different types of quarantine: home isolation (51%), in-unit isolation (2%), and military outpatient facility (47%). 10% were defined as having a background disease, 21% belonged to a risk group as defined by the surveyors (i.e., smokers or pregnant women).

able 1 Demographic variables (N=350)

		n	%
Gender	Male	224	64.0
	Female	126	36.0
Service type	Compulsory	188	53.7
	Career	162	46.3
Quarantine type	Home isolation	204	58.3
	In-unit isolation	6	1.7
	Military outpatient facility	140	40.0
Risk group*	Yes	78	22.3
	No	272	77.2
Background disease	Yes	42	12.1
	No	305	87.9

Professional help	Do you feel that you need professional mental health help?	Yes	62	17.7
		No	288	82.3
	Have you met with a mental health professional?	Yes	28	8.0
		No	322	92.0
Note: *Including smoking and pregnancy				

Measurements

Independent variables: Demographics, personal and medical characteristics: Gender; type of military service (compulsory/career service); quarantine type (home isolation/in-unit isolation/military outpatient facility); risk group, including smoking and pregnancy (Yes/No); background disease (Yes/No); professional mental help (Do you feel that you need professional mental health help? (Yes/ No); have you met with a mental health professional?) (Yes/No).

Perceived severity of the disease: The respondents were asked "How severe was your illness?" The answers ranged from 1 ('mild') to 10 ('very severe') on a Likert scale.

Self-rated Health Questionnaire-SRH: SRH is a simple and easy measure of general health [14]. It is a valid and reliable metric commonly used in psychological research, clinical settings, and general population surveys. SRH is usually phrased as a single item, the most common text being: "In general, how would you describe your state of health?" Response options are rated on a Likert scale ranging from 1-'very bad' to 5-'very good'. The current survey's SRH questionnaire comprised four questions: (1) How would you describe your normal state of health (routine)? (1-'very bad', 5-'very good'); (2) How would you describe your health these days? (1-'very bad', 5-'very good'); (3) How worried are you about being reinfected by COVID-19? (1-'not at all', 5-'very much'); (4) How protected do you feel from COVID-19 reinfection at your place of work? (1-'not at all protected', 5-'very protected'). The respondents had to answer questions 3 and 4, although they had all recovered and were supposedly immune to the COVID-19 virus, to determine whether these concerns lingered.

Mental distress: The question asked was "Rate your degree of distress over the past week in relation to routine" (on a Likert scale ranging from 1-'no distress at all', to 5-'severe distress'). It was meant to provide a subjective assessment of mental distress in the previous week as compared to normal times.

Contentment with life: The question asked was "Do you feel that your life is generally good or bad at present?", the answers ranged from 1-'very bad' to 10-'very good' on a Likert scale.

Causes of fear: A question was asked to explore possible causes of fear: "Which of the following possibilities scares you now?" ("Fear of being infected"; "fear of dying"; "fear of infecting my dear ones"; "fear of losing control and being helpless"; "fear of long isolation"; "fear of not knowing the future implications of the virus for my health "; "fear that the virus is embedded in my body and will stay there forever").

Satisfaction with the handling of the crisis by the government and the military: Two questions concerning this issue were: "How satisfied or dissatisfied are you with the way the government has been handling the COVID 19 crisis?"; "How satisfied or dissatisfied are with the way the military has been handling the COVID 19 crisis?" The answers to both questions ranged from 1-'not satisfied at all' to 10-'very satisfied' on a Likert scale.

Dependent Variable

Generalized Anxiety Disorder Questionnaire-GAD-7: This questionnaire is designed to examine anxiety disorders, and comprised seven themes related to subjective moods over the previous two weeks [15]. Respondents reported the extent to which the following statements concerned them: "I felt nervous, anxious, or very tense"; "I couldn't stop worrying or controlling my concerns"; "I was overly concerned about different matters"; "I had trouble relaxing"; "I was so restless I had difficulty sitting still"; "I was easily annoyed or upset "; "I was in constant fear that something terrible was about to happen." All the answered ranged from 0 to 3 on a Likert scale (0-'Not at all'; 1-'for a few days'; 2-'half of the time'; 3-'almost every day'). The higher the score, the higher is the level of anxiety reported by the person. The scale had good internal reliability (Alpha Cronbach) α=0.89, high validity, and Indices in the original study [16]. A general score was calculated for the questionnaire, Alpha Cronbach in the present study was α=0.924.

Table 2 presents the study variables: median, mean, standard deviation, minimum and maximum.

Table 2 Study Variables: Median, Mean, Standard Deviation, Minimum and Maximum

Continuous Variables	Median	Mean	Standard Deviation	Min	Max
Age	22.0	25.4	7.77	18.0	53.0
Contentment with life	9.0	8.44	1.73	1.0	10.0
Self-rated Health-routine	5.0	4.62	0.68	2.0	5.0
Perception of disease severity	3	3.49	2.19	1.0	10
Self-rated Health-post-COVID	4.0	3.98	0.96	1.0	5.0
Mental distress-post-COVID (*vs.* routine)	2.0	2.22	1.17	1.0	5.0
Generalized Anxiety Disorder	4.0	5.85	5.8	0.0	21.0
Satisfaction with the government's handling of the crisis	5.0	5.14	2.28	1.0	10.0
Satisfaction with the military's handling of the crisis	6.0	5.52	2.65	1.0	10.0

Statistical Analysis

We used the Statistical Package for the Social Sciences (SPSS, version 20.0 for Windows) for all the analyses and set the statistical significance at (p=0.05). Descriptive analysis measures of the data included central tendency, dispersion, and correlations. To process the variables data, we used t-test and Spearman correlation. Finally, to predict anxiety-the only dependent variable, we performed a linear regression using the step modal. The variables found to be significant at each step were included in the next.

RESULTS

The mean perception of health state in the routine of all the participants was significantly higher than in the recovery stage (4.62 ± 0.686 *vs.* 3.98 ± 0.969, t=14.1; p<0.001).

Contentment with life and satisfaction with the way the military handled the crisis went up with age.

The results revealed the following percentages in the causes of fear during recovery: 43% were concerned about reinfection; 30% feared that the virus was embedded in their bodies and risked staying there forever; about 65% feared the future implications of the virus for their health, and 62% were concerned about infecting their dear ones.

Individuals who admitted to needing psychological help reported higher anxiety than those who did not think they needed professional mental health help during recovery.

Association between the research variables, anxiety, and distress: As Table 3 shows, a negative association emerged between the research variable (contentment with life, perception of health state in routine and during recovery, and satisfaction with military handling of the crisis), and levels of post-COVID distress and anxiety. Thus, when these variables went up, distress and anxiety decreased (p<0.001). In contrast, a positive association was found between the perceived severity of the disease and post-recovery levels of distress and anxiety. The more severe the disease was perceived, the higher the level of distress and general anxiety. Finally, satisfaction with the government's handling of the crisis was found to be significantly related only to the post-COVID level of distress (p=0.03).

Table 3 Association between research variables, anxiety, and distress

Continuous Variables	Mental distress-current health (*vs.* routine)	Generalized Anxiety Disorder
Mental distress-post-COVID health (*vs.* routine)		0.544***
Contentment with life	-0.233***	-0.251***
Self-rated Health-routine	-0.208***	-0.223***
Perception of disease severity	0.243***	0.246***

Self-rated Health-post-COVID (*vs.* routine)	-0.394***	-0.392***
Satisfaction with the government's handling of the crisis	-0.116*	-0.101
Satisfaction with the military's handling of the crisis	-0.181**	-0.223***
Note: ***p <0.001; *p <0.05; Spearman correlation		

Association between the research variables and demographics, personal, and medical characteristics: As shown in Table 4, females reported greater anxiety than males (p<0.001). Females also perceived their post-recovery health (vs. routine) as poorer than males (p=0.008).

A significant difference (p<0.001) emerged in contentment with life between career personnel and compulsory service soldiers. Career personnel reported higher contentment than compulsory service soldiers. Career personnel also perceived their health in routine as better than soldiers in compulsory service did (p=0.002).

Table 4 Gender and type of military service: Comparison of study variables (N=350)

Continuous Variables	Male (n=224)			Female (n=126)			t	df	SE#	p-value
	Med	Mean	SD	Med	Mean	SD				
Contentment with life	9.00	8.54	1.65	9.00	8.28	1.84	1.354	347	0.151	0.177
Self-rated Health-routine	5.00	4.65	0.62	5.00	4.57	0.79	0.993	348	0.111	0.332
Perceived disease severity	3.00	3.56	2.28	3.00	3.35	2.03	0.859	347	0.095	0.391
Self-rated health-post-COVID state	4.00	4.08	0.92	4.00	3.79	1.03	2.68	348	0.298	0.008
Mental distress-post-COVID health	2.00	2.17	1.15	2.00	2.33	1.22	-1.227	348	-0.137	0.221
Generalized Anxiety Disorder	3.00	4.95	5.52	7.00	7.44	5.96	-3.926	348	-0.437	<0.001
Satisfaction with the state handling	5.00	5.23	2.26	5.00	4.98	2.29	0.95	346	0.106	0.343
Satisfaction with the military's handling	6.00	5.64	2.67	5.00	5.33	2.61	1.053	347	0.117	0.293
Continuous Variables	Career (n = 162)			Compulsory (n = 188)			t	df	SE#	p-value
	Med	Mean	SD	Med	Mean	SD				
Contentment with life	9.00	8.86	1.3	8.00	8.09	1.95	4.233	347	0.454	<0.001
Self-rated Health-routine	5.00	4.74	0.52	5.00	4.52	0.78	3.091	348	0.331	0.002
Perceived disease severity	3.00	3.59	2.28	3.00	3.4	2.12	0.811	347	0.236	0.418
Self-rated Health-post-COVID	4.00	4.06	0.93	4.00	3.91	0.99	1.407	348	0.15	0.16
Mental distress-post-COVID health	2.00	2.22	1.18	2.00	2.22	1.17	-0.009	348	-0.001	0.993
Generalized Anxiety Disorder	4.00	5.49	5.62	4.00	6.15	5.95	-1.072	348	-0.114	0.284
Satisfaction with the state handling	6.00	5.36	2.27	5.00	4.95	2.26	1.654	346	0.178	0.099
Satisfaction with the military's handling	6.00	5.79	2.57	5.00	5.3	2.7	1.728	347	0.185	0.085
Note: t-test; #SE-Size Effect										

To predict anxiety, we performed a linear regression using the model of the steps. The variables that were found significant were entered into the model.

The regression analysis shows that gender, contentment with life, post-COVID health state, satisfaction with the military handling of the crisis, and perception of disease severity all play a role in predicting anxiety. Overall, the linear regression model explained 23.0% of the variance in predicted anxiety. The first step, which included the only gender, accounted for 5.0% of anxiety prediction. The second step which included contentment with life and current health status accounted for 21.1% of the variance in predicting anxiety. The final step that included satisfaction with military handling of the crisis and disease severity perception explained 23.0% of the anxiety prediction (Table 5).

Table 5 Anxiety prediction: Linear regression

Steps	Variables	Estimate	t	R	R²	ΔR²	p-value
1	Intercept	4.83	12.83				<0.001
	Gender	672	4.26				<0.001
				0.223	0.05	-	
2	Intercept	17.023	10.27				<0.001
	Gender	1.95	3.34				<0.001
	Contentment with life	-0.506	-3.05				<0.001
	Self-rated Health-Post-COVID	-1.93	-6.47				<0.001
				0.449	0.202	0.15	<0.001
3	Intercept	15.445	8.33				<0.001
	Gender	2.06	3.58				0.001
	Contentment with life	-0.51	-3.11				0.002
	Self-rated Health-post COVID	-1.44	-4.43				<0.001
	Satisfaction with the military's handling	-0.309	-2.96				0.003
	Perception of the severity of the disease	0.39	2.84				0.005
				0.488	0.23	0.037	0.001

DISCUSSION

The present study aimed to identify the mental challenges faced by Israeli Air Force personnel following recovery from COVID-19, specifically, the association between post-COVID health perception and levels of distress and anxiety. As expected, the participants perceived their health as significantly worse than it had been earlier. A significant difference was found between males and females in post-recovery health perception, while no difference was observed in health perception in routine. These findings substantiate other studies published during the COVID-19 outbreak, where the mental and health state of females was found to be poorer than that of males [17-19].

Another finding was that higher levels of contentment with life, health state perception in a routine *vs.* post-COVID, and satisfaction with the military handling of the crisis decreased the level of distress and anxiety. Moreover, gender, contentment with life, post-COVID health perception, satisfaction with the military handling of the crisis, and perception of disease severity all contributed to predicting anxiety. These findings are worth attention given the link found between health perception of and mental symptoms. For example, a recent study of 4,607 participants (3,342 women, 72.5%) from 31 regions in China (mean age-23.71 years, SD-7.29), revealed that the worse the subjects perceived their state of health, the more mental symptoms they had [3].

Another purpose of the present study was to examine the extent of satisfaction with the military handling of the crisis. The findings indicated a negative association between satisfaction with the military handling of the crisis and levels of distress and anxiety, namely, higher satisfaction predicted decreased distress and anxiety. Satisfaction with the government's handling of the crisis was found to be significant only about distress and was not associated with the level of anxiety. In contrast to the differences found between males and females in health perception and anxiety during recovery, no differences emerged in satisfaction with military handling of the crisis between male and female personnel in compulsory and career service, or between individuals who received mental health care and those who did not. Satisfaction with the military's handling of the crisis was found to increase with age. High levels of anxiety were found to be related to a decrease in satisfaction with the military handling of the crisis.

A study conducted by the IDF during the COVID-19 outbreak among 116 reserve paramedics from the Home Front Command unit found a link between the participants' opinions about the government and military handling of the crisis and other variables that reflected their state of mind. In cases of higher satisfaction with the military handling of the crisis, respondents reported a stronger sense of coherence, self-efficacy, and well-being, and weaker sensations of threat, burnout, and state anxiety.

The finding related to seeking military mental health help was of particular interest: while 17.7% reported they needed psychological help, only 8% sought such help. Several studies of U.S. military personnel found that refraining from seeking help was due to reluctance to demonstrate weakness or vulnerability within the military setting [20-22].

Another surprising finding was that 43% of the recovered population was concerned about reinfection, although this was quite unlikely to happen. 30% of them also feared that the virus remained in their body and would stay there forever. 65% of them feared the future effects of the virus on their health and 62%were concerned about infecting dear ones. Finally, while more issues were of concern to women than to men, no relationship was found between age or type of military service and the concern issues.

One study maintains that community resilience is a key factor in dealing with emergencies and national crises, particularly epidemics [23]. This suggests that giving special attention to Air Force organizational resilience during the COVID-19 crisis could enhance efficacy and allow for tailoring coping tools to individuals and groups and thereby prevent comorbidity and reduce the damage of the pandemic. In this context, the medical staff would be able to deliver accurate information to the command echelons. Additionally, attention should focus on recovering targeted populations such as women.

Limitations

The present study had several limitations, the first being possibly biased results due to the participant's agreement to be included in it. Being based on self-reports, the research findings were derived from subjective answers. A similar future study should investigate the association between the reported perceptions of health as indicated in the questionnaire against objective health assessment by the medical staff. Another limitation is the sample size. Although in the present study the sample is sufficiently large, it is not fully representative. That the participants were at different stages of recovery is another limitation since this may have differently impacted their perceptions. Had the survey been conducted at the same point in the recovery of the participants, the results may have been quite different. It should be recalled, however, that the study was launched to meet a pressing need for quick intervention. From that perspective, it offered a reasonable real-time snapshot of the situation. A follow-up study is indicated to confirm the findings and the conclusions drawn from them.

SUMMARY AND CONCLUSION

Contentment with life, perceived post-COVID *vs.* routine state of health, satisfaction with the military handling of the COVID-19 crisis is all linked with levels of distress and anxiety. The higher the values of these variables, the less acute are distress and anxiety. However, distress and anxiety increase parallel to the perceived severeness of the disease. Since recovered individuals often perceive their health as fragile, this exacerbates their anxiety. This leads to the conclusion that the recovering population requires close and supportive medical follow-up-not necessarily by mental health professionals and special attention of the command staff. Emphasis should be placed on the female population, which revealed a higher level of distress following the crisis in our previous study and reported more acute anxiety in the present study. It appears that the recovering individuals adhere to the misconception that the disease has long-term effects. This calls for intensifying the dissemination of the medical information available in the medical corps to reduce uncertainty and circulating encouraging data on post-COVID daily functioning among infected and recovered military personnel, regardless of reported distress.

Recommendations

We strongly recommend making the information known to us so far more accessible using fact sheets and relevant publications in the military media. Up-to-date information interfaces for IAF officers regarding the recovery process and the implications of the disease for functioning may contribute to the recovery process and reduce the level of anxiety in the short and long term.

Future research should delve deeper into gender differences to understand their reasons. These findings have implications for the prevention aspect and are part of the medical treatment of patients.

DECLARATIONS

Conflicts of Interest

The authors declared no potential conflicts of interest concerning the research, authorship, and/or publication of this article.

REFERENCES

[1] Kang, Lijun, et al. "The mental health of medical workers in Wuhan, China dealing with the 2019 novel coronavirus." *The Lancet Psychiatry,* Vol. 7, No. 3, 2020, p. e14.

[2] Gao, Junling, et al. "Mental health problems and social media exposure during COVID-19 outbreak." *Plos One,* Vol. 15, No. 4, 2020, p. e0231924.

[3] Li, Jian-Bin, et al. "Self-control moderates the association between perceived severity of Coronavirus Disease 2019 (COVID-19) and mental health problems among the Chinese public." *International Journal of Environmental Research and Public Health,* Vol. 17, No. 13, 2020, p. 4820.

[4] Kim, Hyun-Chung, et al. "Psychiatric findings in suspected and confirmed middle-east respiratory syndrome patients quarantined in hospital: A retrospective chart analysis." *Psychiatry Investigation,* Vol. 15, No. 4, 2018, pp. 355-60.

[5] Cheng, Sammy KW, et al. "Psychological distress and negative appraisals in survivors of Severe Acute Respiratory Syndrome (SARS)." *Psychological Medicine,* Vol. 34, No. 7, 2004, pp. 1187-95.

[6] Fang, Yan, Dun Zhe, and Li Shuran. "Survey on mental status of subjects recovered from SARS." *Chinese Mental Health Journal,* Vol. 18, No. 10, 2004, pp. 675-77.

[7] Hong, Xia, et al. "Posttraumatic stress disorder in convalescent severe acute respiratory syndrome patients: A 4-year follow-up study." *General Hospital Psychiatry,* Vol. 31, No. 6, 2009, pp. 546-54.

[8] Wing, Y. K., and C. M. Leung. "Mental health impact of severe acute respiratory syndrome: A prospective study." *Hong Kong medical journal= Xianggang yi xue za zhi,* Vol. 18, 2012, pp. 24-27.

[9] Mak, Ivan Wing Chit, et al. "Long-term psychiatric morbidities among SARS survivors." *General Hospital Psychiatry,* Vol. 31, No. 4, 2009, pp. 318-26.

[10] Holmes, Emily A., et al. "Multidisciplinary research priorities for the COVID-19 pandemic: A call for action for mental health science." *The Lancet Psychiatry,* Vol. 7, No. 6, 2020, pp. 547-60.

[11] Kisely, Steve, et al. "Occurrence, prevention, and management of the psychological effects of emerging virus outbreaks on healthcare workers: Rapid review and meta-analysis." *BMJ,* Vol. 369, 2020, p. m1642.

[12] Taquet, Maxime, et al. "Bidirectional associations between COVID-19 and psychiatric disorder: Retrospective cohort studies of 62 354 COVID-19 cases in the USA." *The Lancet Psychiatry,* Vol. 8, No. 2, 2021, pp. 130-40.

[13] Gordon, Shirley, et al. "Mental adaptation to capsule work during COVID-19 outbreak: The case of Israeli Air Force career personnel." *Military Medicine,* 2020.

[14] Strawbridge, William J., and Margaret I. Wallhagen. "Self-rated health and mortality over three decades: Results from a time-dependent covariate analysis." *Research on Aging,* Vol. 21, No. 3, 1999, pp. 402-16.

[15] Spitzer, Robert L., et al. "A brief measure for assessing generalized anxiety disorder: The GAD-7." *Archives of Internal Medicine,* Vol. 166, No. 10, 2006, pp. 1092-97.

[16] Lowe, Bernd, et al. "Validation and standardization of the Generalized Anxiety Disorder screener (GAD-7) in the general population." *Medical Care,* Vol. 46, No. 3, 2008, pp. 266-74.

[17] Wang, Cuiyan, et al. "Immediate psychological responses and associated factors during the initial stage of the 2019 Coronavirus Disease (COVID-19) epidemic among the general population in China." *International Journal of Environmental Research and Public Health,* Vol. 17, No. 5, 2020, p. 1729.

[18] Ausín, Berta, et al. "Gender-related differences in the psychological impact of confinement as a consequence of COVID-19 in Spain." *Journal of Gender Studies,* Vol. 30, No. 1, 2021, pp. 29-38.

[19] Galasso, Vincenzo, et al. "Gender differences in COVID-19 attitudes and behavior: Panel evidence from eight countries." *Proceedings of the National Academy of Sciences,* Vol. 117, No. 44, 2020, pp. 27285-91.

[20] Bryan, Craig J., et al. "Understanding and preventing military suicide." *Archives of Suicide Research,* Vol. 16, No. 2, 2012, pp. 95-110.

[21] Castro, Carl Andrew, and Sara Kintzle. "Suicides in the military: The post-modern combat veteran and the Hemingway effect." *Current Psychiatry Reports,* Vol. 16, No. 8, 2014, p. 460.

[22] Stecker, Tracy, et al. "An assessment of beliefs about mental health care among veterans who served in Iraq." *Psychiatric Services,* Vol. 58, No. 10, 2007, pp. 1358-61.

[23] Chandra, Anita, et al. "Building community resilience to disasters: A way forward to enhance national health security." *Rand Health Quarterly,* Vol. 1, No. 1, 2011, p. 6.