

RESEARCH ARTICLE

The effects of compulsory isolation measures during the COVID-19 pandemic: The example of prison workers

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Abstract

Objective: The aim of this research was to identify depression, anxiety, and perceived social support levels among prison workers and to determine the relationship between anxiety and depression and perceived social support.

Methods: The descriptive, cross-sectional research was conducted between 15 November 2020, and 10 February 2021. The study sample consisted of 603 prison workers contacted using the convenience sampling method, consenting to take part in the research, and working under compulsory Covid-19 isolation measures. A questionnaire produced in an electronic environment consisting of a personal information form, the Generalised Anxiety Disorder Scale (GAD), the Patient Health Questionnaire (PHQ), and the Multidimensional Scale of Perceived Social Support (MSPSS) questions was employed.

Results: The mean GAD, PHQ and MSPSS scores of the prison workers working under compulsory isolation conditions were 18.38 ± 5.78 , 14.30 ± 6.99 , and 42.76 ± 20.27 , respectively. Of the prison workers in this study, 71.5% exhibited severe depression symptoms and 21.4% moderate depression, while 25.5% exhibited severe anxiety symptoms and 23.4% moderate anxiety symptoms. MSPSS and its subdomains exhibited negative correlation with depression, and the MSPSS friends subdomain was negatively correlated with anxiety.

Conclusion: Anxiety and depression scores were at high levels in prison workers exposed to compulsory isolation during the Covid-19 pandemic.

KEYWORDS

anxiety, COVID-19, depression, prison workers, social support

Key points

- This research is the first involving prison workers subjected to compulsory isolation during the COVID-19 pandemic
- This study shows that prison workers in Turkey subjected to compulsory isolation during the COVID-19 pandemic experienced severe anxiety, moderate depression, and moderate social support
- MSPSS and its subdomains exhibited negative correlation with depression, while the MSPSS friends subdomain was negatively correlated with anxiety
- Depression and anxiety levels were higher among personnel whose income was lower than outgoings, men, and prison workers with chronic diseases

1 | INTRODUCTION

A novel coronavirus (COVID-19) appeared on 30 January 2020. The World Health Organisation (WHO) declared this to be a public health emergency of international concern, and a global outbreak was announced on 11 March (WHO, 2020).¹ The virus is still inflicting psychological, social, political, and economic effects on entire populations.

Although COVID-19 vaccines continue to be administered in Turkey, in parallel with the rest of the world, factors such as the rapid spread of the pandemic, the high transmission potential of COVID-19, the inadequacy of treatments, and the continuing rise in virus-related deaths are leading to psycho-pathological problems.²⁻⁵ Severe adverse consequences had been reported in previous similar outbreaks such as H1N1, SARS, MERS, Ebola, and Zika, which were found to cause fear and anxiety disorders.^{6,7} In addition, frequent exposure to COVID-19 in the written, visual, and social media is also causing a rise in fear and anxiety levels in society. It is anticipated that the deleterious effects of the COVID-19 pandemic will result in excessive fear of disease, anger, alcohol/tobacco misuse, and rises in divorce and suicide rates.⁸

The COVID-19 pandemic has caused major changes in the workings of penal institutions, settings with their own unique dynamics. Novel and highly infectious respiratory pathogens create a new difficulty for prison populations. Infections can be transmitted to individuals and the community within prisons during interactions between detainees and prisoners, personnel, and visitors, and during transfers between prisons. Prisons and other places of detention are therefore an inseparable part of the public health response to COVID-19.⁹ Restricted mobility, space, and medical care in prisons,¹⁰ overcrowding, inadequate ventilation, and inevitable close proximity⁹ all make individuals more susceptible to contagious diseases. Prison workers enter and leave the institution every day, and prisoners can also be moved between facilities. Released prisoners and inmates newly entering prison can significantly increase the spread of disease. The prevalence of chronic and mental diseases is high among prisoners. In addition, prisons, with their increasingly ageing populations, contribute directly to more severe viral disease and death rates.¹¹ A tendency

to low levels of education and literacy in prison settings makes the transmission of information problematic.¹² By the nature of their occupations, prison workers are in daily direct contact with a high-risk group. They share the same risks associated with the physical environment described above as the inmates themselves. Physical examinations undergone by inmates, medical procedures, inmate transfers, and face-to-face contacts with inmates can further increase the risks faced by prison personnel. Inmates may be reluctant or unwilling to maintain personal hygiene, and can even deliberately infect workers with bodily fluids in order to spread disease.¹³

Due to quarantine procedures adopted for the protection of inmates during the COVID-19 pandemic and their long working hours, prison workers experience high levels of fear of death and disease. The COVID-19 pandemic necessitated the adoption in Turkish prisons of various precautionary measures advised by the Scientific Board. Isolation of workers in direct contact with prisoners and detainees was introduced in 1 April 2020, in order to protect both personnel and inmates against the health risk posed by the pandemic. Isolation measures were introduced in that context by means of a new shift system for 39,417 personnel, who were housed in special areas designated by the Ministry of Health rather than returning home after work. Personnel were subjected to testing after remaining in these areas for 14 days, and those testing negative then continued working in prisons for a further 14 days. These measures adopted under the 'Transition to the New Normal' programme were relaxed after 10 June, with some prisons adopting the 'isolation at home' system while others continued to require isolation in specially designated areas. Polymerase Chain Reaction tests are also applied under the isolation at home system, and personnel return to work in their institution on the basis of their test results.¹⁴

Isolation measures increase depression, anxiety, and anger rates.⁴ One systemic review study showed that social isolation and solitude deriving from physical restrictions adversely affect both physical and mental health.¹⁵ Recent research investigating the role of perceived social support during the COVID-19 pandemic has shown that increased social support levels ameliorate the effects of measures such as social isolation and social distancing.^{5,16} One meta-analysis study revealed that the quality of social relationships was more important than their quantity in the relationship between subjective mental well-being and social life.¹⁷ In addition, two systematic review studies showed that membership of social networks involving high quality relationships protects the individual against depression.^{18,19} Based on the current literature, we hypothesised that compulsory isolation would restrict access to social support mechanisms and that this might be associated with an increase in anxiety and depression levels in prison workers.

As explained above, the normal life cycles of personnel working in prisons have been severely disrupted in the COVID-19 pandemic. Strategies must be developed to reduce the psychological symptoms experienced by personnel during this time. The first priority for strategies to be developed is to understand the psychological effects of the pandemic.² Unfortunately, since there has been no previous research into depression, anxiety, and perceived social support levels in prison workers exposed to compulsory isolation during the pandemic, there are major gaps on the subject. The data yielded by this study are important in terms of identifying the psychological care required by prison personnel at an early stage. The purpose of this research was therefore to determine depression, anxiety, and social support levels among prison personnel, and to identify the relationship between depression and anxiety and perceived social support.

1.1 | Research questions:

- What are the levels of depression, anxiety, and perceived social support among prison workers exposed to compulsory isolation?
- What is the relationship between the social support perceived by prison work subjected to compulsory isolation and their anxiety and depression levels?

2 | METHODS

2.1 | Design

The COVID-19 pandemic in Turkey officially began on 11 March 2020. In parallel with strict precautions and national lockdowns aimed at defeating the outbreak on 16, March, 2020, prison workers were also subjected to compulsory isolation measures. This descriptive, cross-sectional study commenced approximately 8 months after prison workers were subjected to compulsory isolation, and was conducted between 15 November 2020 and 10 February 2021.

2.2 | Ethical considerations

All stages of the research have been performed in accordance the Declaration of Helsinki. Written approval for the research was granted by the Batman University Non-Interventional Ethical Committee (no. 2020/5-10 dated 10 October 2020). The study complied with research and publication ethics at all stages of the research. Participants were informed about the voluntary nature of the participation, their rights, and the aim of the study. Participants approved the informed consent section on the first page of the online questionnaire if they agreed to take part.

2.3 | Participants and procedures

The study population consisted on workers in prisons and other places of detention in Turkey. The total number of prison workers according to the General Directorate of Prisons and Detention Houses is 71,231. The research sample was contacted by means of convenience sampling. The aim was to contact all workers at the beginning of the study, with no sampling being performed. Prison workers were sent an online questionnaire via social media platforms (such as WhatsApp, Instagram, and Twitter) which contained an informed consent form. Workers not complying with the isolated working conditions in the responses received were excluded from the study. Six hundred three prison workers consenting to take part constituted the research sample. The representative capacity of the study, which was completed with 603 individuals, was tested using Epi Info software. The sample was found to represent the population with a prevalence of 35% and a 95% confidence interval ($\alpha:0.05$), and 5% deviation.

2.4 | Measures

The study data were collected using an online questionnaire. Access to the questionnaire was secure, and the software was designed to prevent multiple completions by the same user. The questionnaire was prepared in an electronic environment and consisted of a personal information form, the Generalised Anxiety Disorder Scale (GAD), the Patient Health Questionnaire (PHQ), and the Multidimensional Scale of Perceived Social Support (MSPSS) questions. A pilot study with a 10-member sample was performed to evaluate the scope and comprehensibility of the questionnaire, and difficult to understand questions were revised in the light of the feedback received. The data for individuals involved in the pilot study were not included in the research.

The personal information form was prepared by the authors based on the previous literature^{20,21} and contained 17 questions, nine involving the participants' sociodemographic characteristics and working conditions, and 8 regarding COVID-19 and their general health status.

The original GAD scale developed by Spitzer et al. based on DSM-IV criteria is a short, self-report test evaluating generalised anxiety disorder.²² The items are scored using a four-point Likert-type scale (0 = not at all, 1 = several

days, 2 = more than half the days, and 3 = nearly every day). Possible scores range between 0 and 21. Scores 1–4 are rated as minimal symptoms, 5–9 as mild, 10–14 as moderate, and 15–21 as severe. Konkan et al.'s Turkish language validation and reliability study determined a Cronbach alpha value of 0.852.²³ The Cronbach alpha reliability coefficient for the total scale in the present study was calculated at 0.923.

The PHQ is a self-report scale developed for determining depression levels. The original version was developed by Kroenke et al.,²⁴ while the Turkish-language version was validated by Sari et al.²⁵ This four-point Likert-type scale consists of nine questions scored between 0 and 3, with higher scores indicating higher depressive symptoms. The minimum possible score on the scale is 0, and the highest possible score is 27. Scores of one to four are regarded as minimal, 5–9 as mild, 10–14 as moderate, 15–19 as moderately severe, and 20–27 as severe depression according to the scoring system of the original version. Sari et al. calculated a Cronbach alpha coefficient for each question, and these were generally greater than 0.70.²⁵ The Cronbach alpha reliability coefficient in this study was 0.921.

The MSPSS consists of 12 questions, with four items for each of three subdomains, family, friends, and significant others. Participants are asked to indicate their agreement with items on a seven-point Likert scale, ranging from 'very strongly disagree' to 'very strongly agree,' possible scores ranging from 12 to 84. Higher total and subdomain scores indicate increased social support. The original version of the MSPSS was developed by Zimet et al.²⁶ The reliability and validity of the Turkish-language version were confirmed by Eker et al. and the Cronbach alpha value of the scale is 0.959.²⁷

2.5 | Data analysis

Statistical analyses were performed on SPSS version 23.0 software. Descriptive statistics including frequency, percentage, arithmetic mean, and standard deviation were employed. Independent research variables were personal characteristics and the MSPSS, while dependent variables were the PHQ and GAD. Skewness and kurtosis values were investigated in order to evaluate the normality of distribution of dependent variables. Since these values were between -1.5 and $+1.5$, the data were regarded as normally distributed.²⁸ The independent samples *t* test and one-way analysis of variance were used to examine the effect of independent variables on dependent variables. Relationships between dependent variables were examined using Spearman correlation analysis. *p* values less than 0.05 were regarded as statistically significant.

3 | RESULTS

The mean age of the participants was 32.14 ± 6.33 years. The majority of prison personnel taking part in the study were men, aged 30–39, married, with children, regarded their income as lower than their outgoings, worked in security units, had worked under compulsory isolation conditions for longer than seven months, had no chronic disease, and considered that they might contract COVID-19 in the near future (Tables 2 and 3).

Mean scores for the scales administered in the study are shown in Table 1. These indicate severe anxiety, moderate depression, and moderate perceived social support (Table 1).

Analysis of sociodemographic data and mean GAD scores revealed no statistically significant relationship between them, with the exception of monthly income ($p > 0.005$). A significant relationship was observed between worker's monthly incomes and mean GAD scores ($p < 0.005$). Post hoc analysis (Tukey's test) was applied to identify the source of the significance among the group revealed that this was due to workers whose income was less than their monthly outgoings had higher mean GAD scores than those whose income was equal to or greater than their outgoings (Table 2). A statistically significant relationship was observed between mean PHQ scores and the variables

TABLE 1 Scale and subdimension descriptive characteristics

Variable	n	Mean ± SD
GAD	603	18.38 ± 5.78
PHQ	603	14.30 ± 6.99
MSPSS	603	42.76 ± 20.27
Family subdimension	603	17.51 ± 8.23
Friends subdimensions	603	14.22 ± 7.88
Significant other subdimension	603	11.01 ± 8.06

of gender and monthly income ($p < 0.05$). Male workers had higher mean PHQ scores than females, and workers reporting income lower than outgoings had lower PHQ scores than other personnel. Female workers also registered significantly higher mean MSPSS scores than male personnel ($p < 0.05$). Similarly, mean family and significant other subdimension scores also differed significantly in favour of women ($p < 0.05$), while no significant difference was observed between gender and the friends subdimension ($p > 0.05$). Significant relationships were observed between age groups and mean MSPSS, friends, and significant other scores ($p < 0.05$). Post hoc analysis revealed significantly higher mean MSPSS, friends, and significant other scores among workers in the 20–29 age group compared to those aged over 40. In addition, mean significant other subdimension scores were significantly higher among personnel 20–29 compared to the 30–39 age group. Examination of the variables of marital status and possession of children and mean MSPSS and subdimension scores revealed higher MSPSS, friends, and significant other scores among single workers and those without children ($p < 0.05$). No significant relationship was observed between these variables and mean family dimension scores ($p > 0.05$) (Table 2).

Participants' opinions concerning their workplace conditions and various health-related matters and mean GAD, PHQ, MSPSS, and subdimension scores are shown in Table 3. A significant relationship was observed between the unit in which participants workers and mean GAD and MSPSS scores ($p < 0.05$), but none between mean MSPSS and subdimension scores ($p > 0.05$). Personnel working in security and administrative units had significantly higher mean GAD and PHQ scores than those working in other services ($p < 0.05$) (Table 3).

Significant differences were determined in GAD and PHQ scores in times when participants worked under quarantine conditions ($p < 0.05$). The mean GAD and PHQ scores of individuals who worked under quarantine conditions for 7 months or more were significantly higher than those working under quarantine conditions for 6 months or less. No significant relationship was detected between length of time spent working under quarantine conditions and MSPSS and subdimension scores ($p > 0.05$) (Table 3).

Mean GAD and PHQ scores were also significantly higher in workers reporting chronic disease than in those with no chronic disease ($p < 0.05$). No significant relationship was determined between chronic disease and mean MSPSS and subdimension scores ($p > 0.05$) (Table 3).

Workers who thought that they might contract COVID-19 in the near future registered higher mean GAD and PHQ scores than those not expecting to contract COVID-19 ($p < 0.05$). The mean higher subdimension score was higher among workers who did not think that they would contract COVID-19 ($p < 0.05$), while no significant difference was observed in mean MSPSS and other subdimension scores ($p > 0.05$) (Table 3).

Correlations between the scores on the measurement tools among workers in the study are shown in Table 4. Positive powerful correlation was determined between mean GAD and PHQ scores ($r:0.781$). Mean GAD scores were weakly negatively correlated with the mean social support from friends subdimension score, but no correlation was detected between GAD and other score types ($p < 0.05$). Weak negative correlation was observed between mean MSPSS and subdimension scores and mean PHQ scores ($p < 0.05$).

TABLE 2 A comparison of mean scale scores and sociodemographic characteristics

	n	GAD (Mean ± SD)	PHQ (mean ± SD)	MSPSS (mean ± SD)	Family (mean ± SD)	Friends (mean ± SD)	Significant other (mean ± SD)
Gender							
Female	128	2.40 ± 0.81	1.39 ± 0.78	3.96 ± 1.76	4.75 ± 2.06	3.85 ± 2.01	3.27 ± 2.20
Male	475	2.68 ± 0.81	1.64 ± 0.76	3.45 ± 1.65	4.27 ± 2.04	3.47 ± 1.95	2.61 ± 1.94
Test values		t:-3.365 p:0.001***	t:-3.323 p:0.001***	t:-3.030 p:0.003**	t:2.365 p:0.018**	t:1.925 p:0.055	t:3.307 p:0.001***
Age							
20–29 years ¹	214	2.58 ± 0.78	1.58 ± 0.78	3.83 ± 1.72	4.44 ± 2.05	3.84 ± 1.97	3.20 ± 2.16
30–39 years ²	315	2.63 ± 0.82	1.59 ± 0.77	3.48 ± 1.63	4.45 ± 2.04	3.47 ± 1.95	2.54 ± 1.90
40 years or more ³	74	2.73 ± 0.92	1.58 ± 0.79	3.09 ± 1.69	3.87 ± 2.08	3.08 ± 1.94	2.33 ± 1.80
Test values		F: 0.989 p: p:0.374	F: 0.008 p:0.992	F: 5.962 p: 0.003***	F: 2.580 p:0.077	F: 4.783 p:0.009***	F: 8.856 p:0.000***
Post hoc		-	-	1 > 3	-	1 > 3	1 > 3; 1 > 2
Marital status							
Married	404	2.63 ± 0.85	1.59 ± 0.79	3.45 ± 1.66	4.41 ± 2.10	3.42 ± 1.95	2.50 ± 1.88
Unmarried etc.	199	2.59 ± 0.77	1.58 ± 0.74	3.79 ± 1.71	4.30 ± 1.96	3.82 ± 1.97	3.25 ± 2.17
Test values		t:3.582 p:0.561	t:190 p:0.849	t:2.356 p:0.019	t:662 p:0.508	t:2.349 p:0.019**	t:4.352 p:0.000***
Children?							
Yes	319	2.65 ± 0.83	1.59 ± 0.75	3.34 ± 1.63	4.31 ± 2.08	3.30 ± 1.90	2.40 ± 1.82
No	184	2.59 ± 0.81	1.57 ± 0.80	3.81 ± 1.71	4.45 ± 2.03	3.83 ± 2.01	3.14 ± 2.15
Test values		t:1.006 p:0.315	t:321 p:0.748	t:-3.455 p:0.001***	t:-0.853 p:0.394	t:-3.348 p:0.001***	t:-4.562 p:0.000***
Monthly income							
Lower than outgoings ¹	288	2.77 ± 0.82	1.74 ± 0.80	3.52 ± 1.69	4.25 ± 2.03	3.51 ± 1.98	2.80 ± 2.04
Equal to outgoings ²	250	2.49 ± 0.78	1.48 ± 0.71	3.62 ± 1.71	4.49 ± 2.09	3.64 ± 1.99	2.73 ± 2.03
Higher than outgoings ³	65	2.44 ± 0.85	1.33 ± 0.78	3.49 ± 1.59	4.48 ± 2.02	3.39 ± 1.87	2.61 ± 1.84
Test values		F:9.766 p:0.000***	F:12.045 p:0.000***	F:310 p:0.734	F:1.048 p:0.351	F:536 p:0.585	F:230 p:0.795
Post hoc		1 > 2, 1 > 3	1 > 2, 1 > 3	-	-	-	-

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

4 | DISCUSSION

The prison environment increases the risk of disease transmission due to overcrowding and sanitation problems. Difficulty in implementing precautions aimed at preventing the spread of COVID-19, such as social distancing and frequent hand washing, in the prison setting makes prison workers vulnerable to the disease.²⁸ This study shows that anxiety and depression scores are high among prison workers in Turkey subjected to compulsory isolation during the COVID-19 pandemic. This research is the first involving prison workers subjected to compulsory isolation during the

TABLE 3 Mean scale scores in terms of working conditions and health status

	n	GAD (Mean ± SD)	PHQ (Mean ± SD)	MSPSS (Mean ± SD)	Family (Mean ± SD)	Friends (Mean ± SD)	Significant other (Mean ± SD)
Place of work							
Administration	54	2.81 ± 0.87	1.69 ± 0.81	3.50 ± 1.77	4.39 ± 2.11	3.42 ± 2.07	2.69 ± 2.03
Security	458	2.67 ± 0.78	1.64 ± 0.75	3.49 ± 1.63	4.31 ± 2.03	3.50 ± 1.94	2.67 ± 1.96
Other	91	2.24 ± 0.88	1.25 ± 0.80	3.92 ± 1.85	4.70 ± 2.14	3.88 ± 2.05	3.19 ± 2.19
Test values		F:12.304 p:0.000***	F:10.244 p:0.000***	F:2.479 p:0.085	F:1.366 p:0.276	F:1.504 p:0.223	F:2.542 p:0.080
Post hoc		1 > 3; 2 > 3	1 > 3; 2 > 3	-	-	-	-
Length of working in compulsory isolation							
0–6 months	128	2.47 ± 0.89	1.43 ± 0.82	3.64 ± 1.69	4.37 ± 2.10	3.60 ± 1.93	2.94 ± 1.94
7 months or longer	475	2.66 ± 0.80	1.63 ± 0.75	3.54 ± 1.68	4.38 ± 2.04	3.54 ± 1.98	2.70 ± 2.03
Test values		t:-2 0.277 p:0.022	t:-2 0.479 p:0.013	t:607 p:0.544	t:-0.027 p:0.979	t: 0.330 p:0.742	t: 1.231 p:0.219
Presence of chronic disease?							
Yes	97	2.57 ± 0.80	1.54 ± 0.77	3.56 ± 1.67	4.38 ± 2.04	3.56 ± 1.96	2.76 ± 2.01
No	506	2.89 ± 0.87	1.81 ± 0.75	3.53 ± 1.77	4.35 ± 2.11	3.51 ± 2.04	2.72 ± 2.05
Test values		t:3.500 p:0.000***	t:-3.112 p:0.002***	t:321 p:0.832	t:137 p:0.891	t:237 p:0.813	t:162 p:0.862
Do you expect to contract COVID-19 soon?							
Yes	501	2.73 ± 0.80	1.67 ± 0.75	3.49 ± 1.66	4.34 ± 2.05	3.45 ± 1.95	2.67 ± 1.95
No	102	2.29 ± 0.81	1.33 ± 0.79	3.77 ± 1.76	4.48 ± 2.06	3.86 ± 1.99	2.98 ± 2.17
Test values		t:5.799 p:0.000***	t:4.765 p:0.000***	t:1.798 p:0.073	t:729 p:0.468	t:2.335 p:0.026**	t:1.590 p:0.112

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

TABLE 4 Correlations between scale scores

Scale	Test values	GAD	PHQ	MSPSS	MSPSS (family)	MSPSS (friends)
PHQ	r	0.781				
	p	0.000***				
MSPSS	r	-0.074	-0.166			
	p	0.069	0.000***			
MSPSS (family)	r	-0.063	-0.127	0.860		
	p	0.120	0.002**	0.000***		
MSPSS (friends)	r	-0.091	-0.199	0.870	0.650	
	p	0.026	0.000***	0.000***	0.000***	
MSPSS (significant other)	r	-0.070	-0.148	0.676	0.361	0.493
	p	0.086	0.000***	0.000***	0.000***	0.000***

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

COVID-19 pandemic, and the findings are therefore discussed in the light of research involving the general population during the pandemic.

Female workers in this study registered higher perceived social support scores than men, and their anxiety and depression scores were significantly lower. Similarly, research involving the general community in the COVID-19 pandemic has also reported higher perceived social support among women compared to men.²⁹ Studies involving the general community during the COVID-19 pandemic have also reported higher depression and anxiety scores in women than in men.^{20,21} The higher perceived social support among women in the present study shows that social support is one of the factors mitigating anxiety and depression rates in women. This is consistent with previous studies showing that perceived social support has an ameliorating effect on depression and anxiety.^{5,16,29}

No relationship was determined in this research between age and depression or anxiety levels. In contrast, a study from Germany reported higher anxiety and depression scores in the normal population among individuals aged 18–24 compared to older age groups.²¹ A study from China also reported higher anxiety and depression levels in individuals aged under 35 compared to older age groups.³ The COVID-19 pandemic has had social, economic, and health impacts and has restricted access to the social support that individuals require. We think that the variety of stressors to which individuals are exposed in the COVID-19 pandemic, and the variety of stress responses, may have affected the inconsistency in depression and anxiety scores among the age groups.

Mean MSPSS support from friends and significant others in the present study was higher among workers in the 20–29 group compared to those aged over 40, and mean social support scores were higher than in workers in the 30–39 age group. The study findings indicate that younger prison workers generally register higher social support scores. Similarly to our findings, Grey et al. also determined a higher level of perceived social support in individuals from the 25–34 age group.²⁹

No relationship was observed in this study between marital status and possession of children and depression and anxiety rates. Unmarried prison workers without children registered significantly higher mean MSPSS friends and significant other subdimension scores than married personnel with children ($p < 0.05$). This may be due to another result of our research, that young adults have higher support from friends and significant others, and are generally single and without children.

Prison workers who regarded their monthly income as lower than their outgoings also had higher mean anxiety and depression scores. Similarly, a higher risk of depressive symptoms during the COVID-19 pandemic has been associated with low income.³⁰ Situations in which income fails to meet expenses are a major stressor, and it is not unexpected that anxiety and depression levels will rise as a result.

In terms of the units in which the prison personnel in this study worked, security and administrative department workers had higher anxiety and depression scores than those in other units, although no difference was observed in terms of MSPSS. We think that personnel in security units in prisons being in direct contact and communication with inmates and detainees and having high workloads is an important factor in their higher anxiety and depression rates. Workers in administrative units have important responsibilities in terms of the taking of measures aimed at preventing the spread of COVID-19 to inmates and to personnel, and this may have resulted in higher anxiety and depression rates among such staff by creating a psychological burden.

Personnel who had worked under compulsory isolation conditions for 7 months or longer had mean higher anxiety and depression scores than those who had worked under such conditions for 6 months or less. No significant difference was observed in MSPSS in terms of length of time in enforced isolation. One study comparing self-isolating and non-isolating individuals in the community reported higher depression levels among self-isolators.²⁹ This shows that isolation increases depression scores, and is consistent with our own finding. The fact that prolongation of quarantine increases depression and anxiety among prison workers subjected to enforced isolation is an expected finding. We think that the absence of a relationship between duration of isolation and MSPSS may derive from social support from friend and significant others not being interrupted during this time.

Workers reporting chronic diseases had significantly higher anxiety and depression scores than those with no chronic disease. No significant relationship was observed between possession of chronic disease and MSPSS.

COVID-19 disease progresses with more severe symptoms in individuals with chronic disease, and can even be fatal.^{2,3,5} The higher levels of depression and anxiety in patients with chronic disease may therefore be associated with anxiety deriving from the knowledge that COVID-19 has more severe effects in chronic diseases.

The mean depression and anxiety scores of workers who thought that they might soon be infected with COVID-19 were higher than those of workers who did not expect to contract COVID-19. These findings are compatible with studies showing that worries concerning COVID-19 increase depression and anxiety scores.^{31,32} Workers not expecting to contract COVID-19 had higher friends social support scores, while no significant difference was observed in mean MSPSS and other subdimension scores. Social support from friends may have influenced the decrease in worries concerning their contracting COVID-19, although this was not investigated in detail in the scope of the present study.

Analysis showed that 71.5% of the prison workers in this study exhibited severe depressive symptoms, and 21.4% exhibited moderate symptoms. We encountered no recent study investigating depression levels in prison workers in Turkey. One previous study reported major depression in 10.4% of prison workers.³³ (Kaya et al., 2003). A study involving 1441 participants from the general population in the USA reported a three-fold increase in the prevalence of depressive symptoms during the COVID-19 pandemic compared to before the pandemic.³⁰ Another study of individuals aged 18–39 in the USA during the COVID-19 pandemic reported high depression in 43.3% of the study sample.⁵ Research from China reported a depression rate of 20.1%.³ A study from Germany detected depression in 14.3% of individuals during the COVID-19 pandemic, much lower than in other countries.²¹ The depression scores of the prison personnel in the present study were significantly higher than those reported in other studies. Research has shown that social isolation adversely affects individuals' mental health,⁴ and exposure to compulsory isolation during the COVID-19 pandemic may have resulted in high levels of depressive symptoms among prison workers.

Analysis revealed that 25.5% of the participants in this study exhibited severe anxiety symptoms, while 23.4% had moderate symptoms. We encountered no recent studies investigating anxiety levels among prison workers. One study of prison workers performed before the pandemic reported severe anxiety on 8.7%,³³ a figure approximately one-third of the rate during the COVID-19 pandemic. Research involving the Turkish population in general reported severe anxiety in 7.9% of participants and moderate anxiety in 16.4%.³⁴ This shows that anxiety levels are higher among prison personnel than in the general population in Turkey. This may be one of the results of exposure to compulsory isolation.

Meta-analyses examining the relationship between mental health and social support before the COVID-19 pandemic have reported that the presence of such support predicts a better level of mental health function and can also be regarded as a protective factor against the onset of mental health problems.³⁵ More specifically, it has been suggested that high-quality social support can increase resistance to stress and help protect against the development of trauma-related psychopathology.^{36,37} The social support perceived by prison workers exposed to compulsory isolation measures during the Covid-19 pandemic in this study was negatively correlated with depression. Consistent with the present study, research involving the general population when COVID-19 social isolation was enforced has also shown that perceived social support reduced mean depression levels.³⁰

Negative correlation was observed in the present study between anxiety and the perceived social support friends subdomain. Consistent with the findings of the present study, Grey et al. reported that perceived social support reduced anxiety scores in the COVID-19 pandemic.²⁹ The fact that only social support from friends was negatively associated with anxiety in the present study may be due to there being no decrease in access to support from friends among prison workers exposed to compulsory isolation, or to friends consisting of individuals in the same team also undergoing enforced isolation.

Powerful positive correlation was observed between the anxiety and depression scores of the prison personnel in this study. One study of individuals aged over 18 exposed to social isolation during the COVID-19 pandemic also reported a powerful association between anxiety and depression levels.²⁹ These results are thus compatible with previous findings concerning anxiety and depression.^{21,29}

5 | CONCLUSIONS

This study shows significantly high anxiety and depression scores in prison workers exposed to enforced isolation during the COVID-19 pandemic.

While social support was shown to have a negative relationship with anxiety and depression, such elevation in anxiety and depression among the participants in this study may also have affected the perception of social support. Individuals with a positive psychological profile are more likely to evaluate any social support they receive in a positive manner. It is therefore important to determine individual's psychological profiles. Future research investigating the role of social support might usefully benefit from examining personality traits such as resilience and coping styles in the context of a more complete understanding of perceived social support in the process of individual access to and receipt of support. We recommend that future studies should examine the causes of the factors affecting social support in greater detail.

6 | LIMITATIONS

Since we encountered no studies from Turkey or elsewhere involving prison workers exposed to compulsory social isolation during the Covid-19 pandemic, the findings of this study could not be compared with those of research involving similar samples. This research focussed solely on the relationship between perceived social support and anxiety and depression. The question remaining unanswered is which contextual and individual factors affect the perception of social support. However, it is not possible on the basis of this study to conclude whether the high levels of depression and anxiety levels of staff working in prisons developed as a result of the enforced social isolation applied during the COVID-19 pandemic. Nonetheless, the fact that the duration of isolation further increased depression and anxiety rates does suggest that enforced isolation is an important factor. We recommend that further studies now be performed to evaluate anxiety and depression levels when prison workers are not subjected to enforced isolation. It will also be useful to evaluate the reasons for the high depression and anxiety scores in detail and for the necessary psychological support studies to be carried out.

In addition, prison personnel in Turkey were still working under conditions of compulsory isolation at the time of writing, and the results of this study cannot be generalised since they are specific to a particular duration of enforced isolation.

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CONFLICT OF INTEREST

We declare no conflicts of interest.

ETHICS STATEMENT

All stages of the research were performed in accordance the Declaration of Helsinki. Written approval for the research was granted by the Batman University Non-Interventional Ethical Committee (no. 2020/5-10 dated 10 October 2020).

AUTHOR CONTRIBUTIONS

Fatma Ayhan, Habip Balsak, and Veli Ayhan conceived the design, wrote the introduction, method, conclusion, and discussion sections, edited the revised draft, and organised references. Fatma Ayhan and Habip Balsak critical comments and revision. All authors revised and approved the final draft.

DATA AVAILABILITY STATEMENT

Research data are not shared.

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