

Research Article

Depression, Anxiety and Stress among Police Personnel during COVID-19 Pandemic: A Cross-sectional Study in North India

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A B S T R A C T

Background: COVID-19 pandemic has posed a public health threat to the whole world. The frontline line workers including police personnel involved in COVID-19 management and containment are at risk of mental health problems.

Aims: To estimate mental health problems like stress, anxiety, and depression in police personnel and to determine their underlying drivers.

Methods: A cross-sectional study was conducted among police personnel of city Rohtak in April 2020. 8 police stations and 13 check-posts were selected randomly by lottery method. Depression, Anxiety and Stress-21 Scale was used. Statistical analyses were undertaken using MS Excel, Epi Info, and R software.

Results: 298 policemen were screened for mental problems. Their mean age was 39 ± 9.7 years. 20.1%, 13.8%, and 3.4% had stress, anxiety, and depression respectively. 172 (57.7%) respondents were not satisfied with their COVID duty hours. 239 (80.2%) subjects believed that they are at risk of getting the infection due to their duties in COVID-19 containment zones. About 68.8% of participants believed that their families were at risk of getting the infection because of their COVID-19 duty. The study subjects who were not satisfied with their duty hours had 2.4 and 3.5 times more risk of stress and anxiety as compared with those who were satisfied with them.

Conclusion: Policemen are at significant risk for stress, anxiety, and depression due to COVID related duties. Identifiable risk factors were number of working hours per day, dissatisfaction with duty hours, and risk of contracting corona infection due to COVID-19 duty.

Keywords: COVID-19 Pandemic, Police Personnel, Containment Zone, Stress, Anxiety, Depression

Introduction

A novel coronavirus appeared in Wuhan, China, in the beginning of December 2019, and it has spread rapidly around the world. The coronavirus disease 2019 (COVID-19) outbreak was declared a public health emergency of international concern by the World Health Organization (WHO) on 30 January 2020 when all 34 regions of China had cases of SARS-CoV-2.¹

COVID-19 presents with symptoms like fever, cough, difficult breathing, and other respiratory problems. It is mild in most people but can be severe or deadly in some cases, especially the elderly and those who have underlying health issues.

The key strategies for containment of an outbreak of this nature are isolation, physical distancing, and country-wise lockdown. Limited movement of the entire population and enforcement of a series of regulations in the country like air travel cessation, closing of public transport, cancellation of public events, workplace closing, restriction of internal movement of the people were warranted for COVID-19 containment and law enforcement play a pivotal role in this, for COVID-19 containment. Policemen are on field duty for the whole day and have significant person to person contact, making them vulnerable to COVID-19 infections. Apart from these, they are also involved in crucial activities like guarding containment zones, monitoring home quarantines, handling thousands of migrants hitting roads in their attempts to go home, controlling unnecessary movement of people, and also taking suspected COVID-19 positive cases to the hospital for testing. It is generally thought that police personnel are tough and mentally stable but health emergencies such as pandemics can lead to detrimental and long-lasting psychological consequences, due to disease-related fear and anxiety, social isolation, and the overabundance of misinformation on social media and elsewhere.² Especially because of their nature of duties, they are more vulnerable to contract this disease as compared to the general population. There is a paucity of scientific literature in this underrepresented group, especially focusing on mental health issues against the backdrop of the challenging work environment. We, therefore, made an attempt to understand the problem of mental health disorders and the underlying drivers for those disorders.

Methods

This is a cross-sectional study conducted among police personnel on duty at various police stations and check posts of the city in the month of April 2020. Data were collected by the investigators themselves. The purpose of the study was explained to each participant and those who gave written consent were included in the study. The participants taking any anti-psychiatric drugs were excluded from the study.

Taking the reference of one study done by Ragesh G et al.³ in Kerala (India), the prevalence of stress among police officials was 16.5%. At 95% confidence interval and 5% absolute error, the sample size came out to be 220. So, for the purpose of the study, 298 police officials were included. There are 15 police stations and 42 check-posts in the District Rohtak, out of which 8 police stations and 13 check-posts were selected randomly by lottery method. The study participants were grouped into two categories, namely the Non-gazetted officer group (inspector, sub-inspector, and assistant sub-inspector) and the Other Ranks group (ORs group: head constable, constable, and home guard).

In this study Depression, Anxiety and Stress-21 Scale (DASS-21) was used. DASS-21 is a self-report questionnaire. It has 7 items in each subscale (depression, anxiety, and stress), making a total of 21 items. The subjects are required to provide a score for every item ranging from 0 to 3, with 0 representing did not apply to me at all and 3 representing applied to me very much.

For each disorder, the final score is obtained by the total score of the questions related to it. Individuals are classified as normal, mild, moderate, severe, and very severe based on their responses. Some questions related to police personnel duty in COVID-19 containment zones were also asked to understand the risk factor. So, after screening, the individuals suspected of any psychological problem were referred to the psychiatry department of the institute PGIMS (Post Graduate Institute of Medical Sciences), Rohtak for further management. Confidentiality of the information given by the participants was maintained by the investigators.

Statistical Analysis

Statistical analyses were undertaken using MS Excel, Epi Info and R software. The reliability of the tool was assessed using Cronbach's Alpha with values of 0.914 making it a reliable tool for screening. A quantitative descriptive analysis was performed using univariate statistics to report frequency distribution as percentages. Chi-square test was used for categorical variables to analyse the association between the groups. P value < 0.05 was considered statistically significant. Wherever applicable, logistic regression was applied.

Ethics

Ethical permission was taken from the Superintendent of Police of District Rohtak, Haryana, India. Informed consent was also taken from each of the study participants.

Results

A total of 298 police personnel were screened for psychological problems like stress, anxiety, and depression. The sample was categorised into two groups, namely Non-

gazetted officers and ORs (other rank) group with the participation of 83 (27.9%) and 215 (72.1%) individuals from respective groups. The mean age of study participants was 39 ± 9.7 years. Age was divided into two broad categories, < 40 years ($n = 176, 59.1\%$), and ≥ 41 years ($n = 122, 40.9\%$). There were 260 (87.2%) male participants and the remaining 38 (12.8%) participants were female (Figure 1).

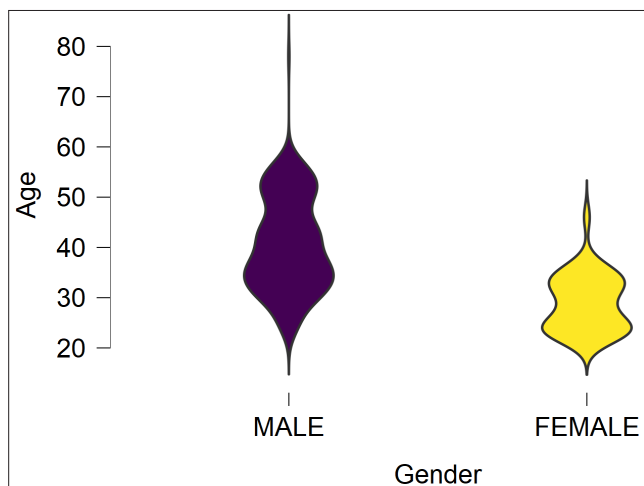


Figure 1. Violin Plot showing Gender-wise Age Distribution Pattern of Study Participants

About 268 (89.9%) participants resided with their families, out of which 6 (2.2%) lived only with spouse, 76 (28.4%) lived with spouse and kids, 18 (6.7%) lived only with elderly parents, and 168 (62.7%) lived with all the above-mentioned members. Out of 268 candidates who lived with their families, 243 (90.7%) maintained physical distance and took necessary precautions on going home after duty.

The working hours per day in COVID-19 duty were as follows: 63 (21.1%) participants worked for ≤ 8 hours/day, 185 (62.1%) worked for 9-16 hours/day, and 50 (16.8%)

worked for 17-24 hours/day. Around 126 (42.3%) subjects were satisfied with their duty hours and 172 (57.7%) were not satisfied with their duty hours. Out of total subjects who were not satisfied with their duty hours, maximum number of subjects (93.6%) gave the opinion that their duty hours should be 8 hours per day; 7 (4.1%) subjects and 4 (2.3%) subjects gave the opinion that their duty hours per day should be 8 hours and 12 hours respectively.

The number of individuals who faced resistance during their duty was 263 (88.3%). About 239 (80.2%) subjects believed that they were at risk of getting the infection due to their duties in COVID-19 containment zones. About two-third (68.8%) of the participants believed that their families were at risk of getting the infection because of their COVID-19 duty, and around one-fourth (26.5%) of the participants believed that most of the patients die after contracting infection with COVID-19.

On screening the psychological state of police officials by administering DASS-21 tool, it was found that 20.1% had stress, 13.8% had anxiety, and 3.4% had depression (Table 1).

Table 2 depicts the association of stress, depression, and anxiety with various independent variables. Police personnel who were not satisfied with duty hours were at 3.5 times more risk of anxiety ($OR = 3.502, p = 0.002, CI = 1.6-7.9$) as compared with those who were satisfied with duty hours. The predictors of stress among police personnel are shown in Table 3. Figure 2 shows the conditional estimates plots displaying the probability of occurrence of stress considering the 4 independent variables i.e., 'Duty hours', 'Are you scared of pandemic?', 'Are you at risk of contracting COVID due to COVID 19 duty?'

'Are you satisfied with your duty hours?'

Table 1. Prevalence of Stress, Anxiety, and Depression among Police Officials

	Stress n (%)	Anxiety n (%)	Depression n (%)
Mild	28 (9.4)	22 (7.4)	3 (1)
Moderate	20 (6.7)	6 (2)	7 (2.3)
Severe	7 (2.3)	6 (2)	0
Extremely Severe	5 (1.7)	7 (2.3)	0
Total	60 (20.1)	41 (13.8)	10 (3.4)

Table 2. Comparison of Stress, Anxiety, and Depression with various Independent Variables

Variables	Stress Present		Anxiety Present	Depression Present	
	N = 60 n (%)	P value	N = 41 n (%)	N = 10 n (%)	P value
Age (years)					
18-40 (n = 176)	39 (22.2)	0.30	23 (13.1)	5 (2.8)	0.75

≥ 41	21 (17.2)		18 (16.8)	5 (4.1)	
Gender					
Male (n = 260)	50 (19.2)	0.31	37 (14.2)	0.54	0.62
Female (n = 38)	10 (26.3)	4 (10.5)		2 (5.3)	
Designation					
Non-gazetted Officers (n = 83)	16 (19.3)	0.82	12 (14.5)	0.83	1
Other ranks (n = 215)	44 (20.5)	29 (13.5)		7 (3.3)	
Residing with family					
Yes (n = 268)	52 (19.4)	0.35	39 (14.6)	0.4	1
No (n = 30)	8 (26.7)	2 (6.7)		1 (3.3)	
No. of hours working per day in COVID-19 duty					
≤ 8 hours/day (n = 63)	5 (7.9)	0.03	3 (4.8)	0.06	0.04
9-16 hours/day (n = 185)	43 (23.2)	31 (16.8)		10 (5.4)	
17-24 hours/day (n = 50)	12 (24)	7 (14)		0	
Are you at risk of contracting corona infection due to COVID-19 duty?					
Yes (n = 239)	57 (23.8)	0.00	36 (15.1)	0.19	0.69
No (n = 59)	3 (5.1)	5 (8.5)		1 (1.7)	
Are you scared of corona pandemic?					
Not at all (n = 135)	20 (14.8)	0.00	13 (9.6)	0.07	1
A little (n = 109)	21 (19.3)	16 (14.7)		4 (3.7)	
Very much (n = 54)	19 (35.2)	12 (22.2)		2 (3.7)	
Are you satisfied with your duty hours?					
Yes (n = 126)	16 (12.7)	0.01	8 (6.3)	0.00*	0.00*
No (n = 172)	44 (25.6)	33 (19.2)		10 (5.8)	

*Significance at P < 0.05

Table 3. Logistic Regression Analysis for Stress and its Predictors among Police Personnel

	Adjusted Odds ratio	P value	95% CI	
Duty hours				
< 8	Reference			
9-16	2.856	0.05	-0.04	2.13
17-24	2.985	0.08	-0.15	2.34
Are you scared of the corona pandemic?				
Not at all	Reference			
A little	1.132	0.72	-0.57	0.82
Very much	2.316	0.03*	0.06	1.61
Are you at risk of contracting corona infection due to COVID-19 duty?				
No	Reference			
Yes	4.350	0.01*	0.23	2.70
Are you satisfied with your duty hours?				
Yes	Reference			
No	0.761	0.45	-0.99	0.44

*Significance at P < 0.05

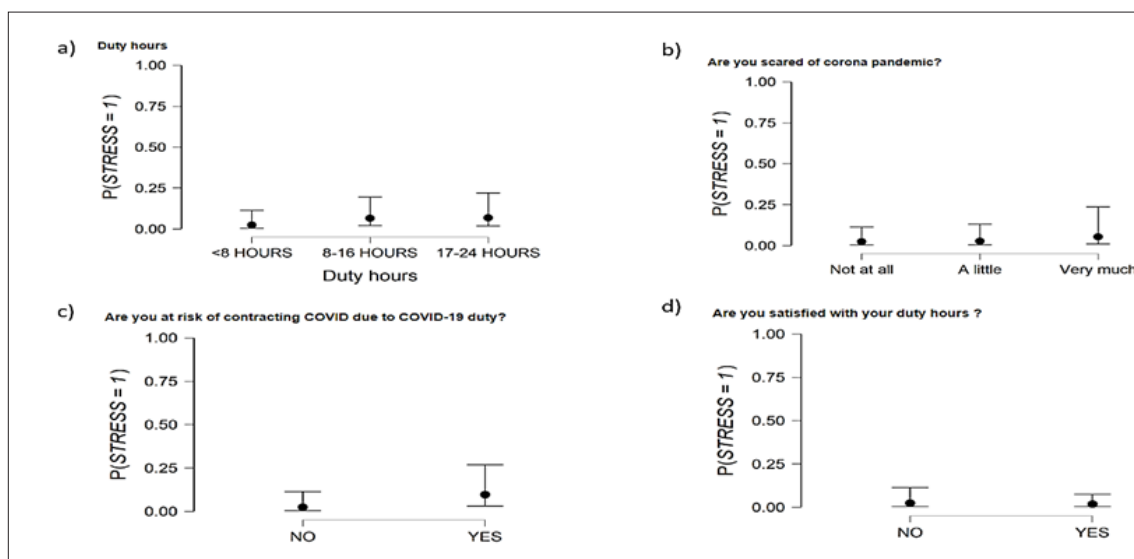


Figure 2. Conditional Estimates Plots displaying the Probability of Occurrence of Stress (Given the Reference of Remaining 3 Factors) for a) Duty hours, b) Are you scared of the pandemic?, c) Are you at risk of contracting COVID due to COVID-19 duty?, d) Are you satisfied with your duty hours?

Discussion

In the backdrop of COVID-19, this study made an attempt to find out mental health issues like depression, stress, and anxiety among police personnel using a screening tool (DASS-21), and we found that out of a total of 298 participants, stress, anxiety, and depression were found to be 20.1%, 13.8% and 3.4% respectively. To compare our findings of mental health status of cops in this acute situation, there was a paucity of articles. But we compared our findings with a few other studies done on police personnel at some other time and also with the mental status of health care workers and general population done in the present crisis period.

According to a study done by Ragesh G et al. (2017)³ in Kerala, India, stress among police personnel was found in 16.5% of subjects (scale used - Operational police stress questionnaire (PSQ-OP)). In another study conducted by Kaur et al. (2013)⁴ in Andhra Pradesh, 35.33% of the policemen (constables and head constables) were found to be having psychological distress [scale used General Health Questionnaire-28 (GHQ-28)]. In a study done in Srilanka by Wickramasinghe ND et al. (2016)⁵, the estimated prevalence of depression in police officers was 22.8% (scale used - Peradeniya Depression Scale). The findings of the study done by Waqar Husain in 2014⁶ in Pakistan revealed that the police officers had severe levels of depression and stress accompanied by extremely severe levels of anxiety [scale used - Depression, Anxiety and Stress Scale (DASS)].

Wang Yet al.⁷ conducted a study in some regions of China among the general population and found that COVID-19 outbreak caused anxiety in 6.33% (5.67% mild anxiety and 0.67% moderate anxiety) and depression in 17.17% (14.3%

mild depression, 2.5% moderate depression) of the study population. Females' anxiety risk was 3.01 times more as compared to males (95% CI 1.39-6.52). In our study, the police officials had more anxiety i.e. 13.8% (mild 7.4%, moderate 2%, severe 2%, and extremely severe 2.3%) and less depression i.e. 3.4% (mild 1%, moderate 2.3%). Our study also showed higher levels of anxiety and depression in females as compared to males, although the difference was not found statistically significant.

As per the findings of the present study, the subjects opined that they are at risk of getting the infection due to their duties in COVID-19 containment zones, and around 205 (68.8%) participants believed that their families are at risk of getting the infection because of their COVID-19 duty. These findings are almost similar to a study conducted by Deblina Roy et al. in 2020⁸ where 72% of participants (general population) were found to be worried for their health and that of their close ones because of the pandemic.

As an offshoot of police stress, ample psychological research work conducted throughout the world reveals many mental health troubles in the form of anxiety, depression, aggression, substance abuse, suicidal ideation, suicidal attempts, and higher suicidal rates in policemen.⁹⁻¹⁴

Limitation

The study would be more useful if we would have conducted an interventional study i.e., observing a decrease in stress, anxiety, and depression after administering interventions like scheduling relaxation methods in their duties hours or after giving periodic counselling.

Conclusion & Recommendations

Police personnel are at significant risk for stress, anxiety,

and depression due to COVID-19 related duties. Identifiable risk factors were number of working hours per day, dissatisfaction with duty hours, fear of corona pandemic, and risk of contracting corona infection due to COVID-19 duty. Given the modifiable nature of risk factors, it is suggested that higher authorities should understand their state of mind. They should adjust their duty hours and administer relaxation techniques.

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Conflict of Interest: None

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