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Original Article

Health status of police personnel in a selected subdivision of Bengaluru District, Karnataka, India

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ABSTRACT

Introduction: Police personnel perform untiring duties to maintain law and order. The objectives of this study were to assess the physical and mental health status of police personnel in a selected rural subdivision of Bengaluru District.

Methods: A cross-sectional study was conducted among 142 police personnel in 7 police stations of the selected rural subdivision using a universal sampling technique. A structured interview schedule was used, which included socio-demographic details, occupational details, anthropometry, blood pressure and blood sugar measurements, Patient Health Questionnaire-9 (PHQ-9) to screen for depression and Perceived Stress Scale (PSS) to identify stress.

Results: The mean age of the police personnel was 40.28±10.97 years. Most of the workforce were males (83%). About 68.3% of the studied group were obese. High random blood sugar and high blood pressure values were observed in 5.6% and 48.6% of the personnel who had no previous history of diabetes mellitus and hypertension. The prevalence of mild to severe depression was found to be 36% and that of high stress was 83.1%.

Conclusion: The high prevalence of increased blood pressure, obesity, depression and perceived stress warrants the need for routine screening and application of various levels of prevention. Health promotion and improved working conditions can improve their health status.

Keywords: Depression, Obesity, Physical health status, Police personnel, Stress

Introduction

Police personnel are law-enforcing authorities who deal with a variety of stressors, such as unpredictable work schedules, shift-based work, encountering criminals and dangerous situations, and a highly hierarchical system of ranking.[1,2] The general well-being of the police personnel is also affected by the lack of organizational support, occupational stress and psychological distress due to the nature of the occupation.[3–6] Long working hours, night shifts, exposure to violence and harassment could impact both physical and mental health status in this population. Chronic non-communicable diseases are a matter of concern among police personnel in India.[7,8] Physical health affected due to chronic diseases affects the productivity of the police personnel thereby impacting the general public who are dependent on their services.[8] Substance abuse is on the rise in this occupational group due to inadequate coping skills, stressors, inadequate working conditions and poor work-life balance.[2] Only those police officers with severe mental illnesses such as suicidal tendencies access mental health services, others who experience stress have inadequate coping strategies and poor support from the workplace. The reasons stated include stigma, confidentiality, and inability to identify that they are encountering a mental illness.[9] The

law-enforcing activity includes suppression of negative emotions, which causes deleterious effects on the immune system thereby causing ill health.[10] Considering this, we aimed to assess the physical and mental health status of police officers of a selected rural subdivision in Bangalore District.

Methods

A cross-sectional study was conducted among police personnel working in seven stations in a rural subdivision of Bengaluru District, between January 2022 and June 2022. A universal sampling technique was employed. All temporary, contract and permanent police personnel working in the 7 police stations of our field practice area were included in the study.

Based on availability and inclusion criteria, 142 police personnel were interviewed. We excluded subjects who were unavailable, even after three visits to the particular police station for an interview, due to reasons like long leave, maternity leave, training, or deputation.

Ethical clearance for this study was obtained from the Institutional Ethics Committee of St. John's National Academy of Health Sciences (IEC No. 03/2022). Permission from the Superintendent of Police, Bengaluru District and the Deputy Superintendent of Police, Hebbagodi, Bengaluru District were obtained. Permission was also obtained from the Administrative Medical Officer of the Government Taluk Hospital in the study area. Written informed consent was obtained from all the participants. Since the study was conducted during the pandemic, COVID-19 appropriate behavior was followed while conducting interviews and the same was reinforced to the police personnel.

The study tool consisted of four parts which included questions on Socio-demographic details, Physical health status, Patient Health Questionnaire-9 (PHQ-9)[11] to assess depression and Perceived Stress Scale (PSS)[12] to assess stress. One of the important aspects of our study tool on physical health was about known history of non-communicable diseases which included diabetes mellitus, hypertension, thyroid disorders and cardiac disorders. The interview also included the substance use pattern of the police personnel. A calibrated weighing machine and stadiometer were used to measure the weight and height of the study subjects respectively. Random Blood Sugar was checked using a calibrated Gluco-spark glucometer and blood pressure was measured using an Omron digital sphygmomanometer.

A structured questionnaire was used for data collection, entered in Microsoft Excel and analyzed using SPSS version 21. In statistical analysis, categorical data was represented using frequencies and proportions, whereas range, mean, and standard deviation were computed for continuous data if the data followed a normal distribution. The chi-square test was applied for bivariate analysis.

Results

A total of 142 police personnel in our study area were included in our study based on availability and inclusion. The mean age of the study participants was found to be 40.28±10.97 years. Most of the police personnel 119 (83.8%) were males and 136 (95.8%) of the police personnel were Hindus. Seventy-one (50%) of the police personnel were graduates. The key sociodemographic findings are enumerated in Table - 1.

Table 1: Socio-demographic profile of the police personnel.

Variables		N(%)
Education Status	Post-Graduation	11(7.7)
	Graduation	71(50)
	PUC	38(26.8)
	SSLC	22(15.5)

Marital Status	Married	118(83.1)
	Unmarried	24(16.9)
Type of family	Nuclear family	94(66.2)
	Others	48(33.8)
Designation	Circle Inspector	1(0.7)
	Sub Inspector of Police	4(2.8)
	Assistant Sub Inspector of Police	19(13.4)
	Head Constable	59(41.5)
	Constable	56(39.4)
	Others	3(2.1)
Monthly Income	<10000 INR	2(1.4)
	10001-20000 INR	6(4.2)
	20001-30000 INR	54(38)
	30001-40000 INR	48(33.8)
	>40000 INR	32(22.5)
Duration of service in Karnataka State Police	≤10 years	56(39.4)
	11-20 Years	27(19.0)
	21-30 Years	55(38.7)
	≥31 Years	4(2.8)
Distance of residence from workplace	≤ 5 km	63(44.4)
	6 to 10 km	17(12)
	> 10 km	62(43.6)

Table-2: Comorbidities, Substance use profile and Body Mass Index of the police personnel.

Variables		**N(%)**
Previous History of Comorbidities	Diabetes	22(15.5)
	Hypertension	24(16.9)
	Diabetes and Hypertension	12(8.45)
	Others	4(2.8)
Substance use (Ever used)	Alcohol	40(28.2)
	Any form of tobacco	9(6.3)
	Both Alcohol and Tobacco (any form)	8(5.63)
Body Mass Index	<18.5 Underweight	3(2.1)
	18.5-22.9 Normal	20(14.3)
	23-24.9 Overweight	20(14.3)
	≥25 Obesity	97(68.3)

The mean weight of the police personnel was 76.37±11.90 kilograms and the mean height was 170.04±6.385 centimeters. The mean Body Mass Index (BMI) was 26.38kg/m². The results of these parameters are summarised in Table 2.

High blood pressure ≥140/90 mm Hg and sugar values >200 mg/dl among the study population are depicted in Figure 1. Among our study participants who did not have a previously known case of Hypertension, 78(55%) had high blood pressure values and among those who were known cases of Hypertension, 21(15%) had high blood pressure values (not under control). Similarly among those who were not a previously known case of Diabetes Mellitus, about 8(5.6%) had high blood sugar values and among known cases of Diabetes Mellitus 10(7%) had high blood sugar values (not under control).

The PHQ-9 is used as a screening tool for depression in this study. The PHQ-9 classifies probable depression into five categories based on the scores namely No/minimal depression, Mild depression, Moderate depression, Moderately severe depression and Severe depression. About 36% of the police personnel were found to have mild to severe depression. The PHQ-9 results are depicted in Figure 2.

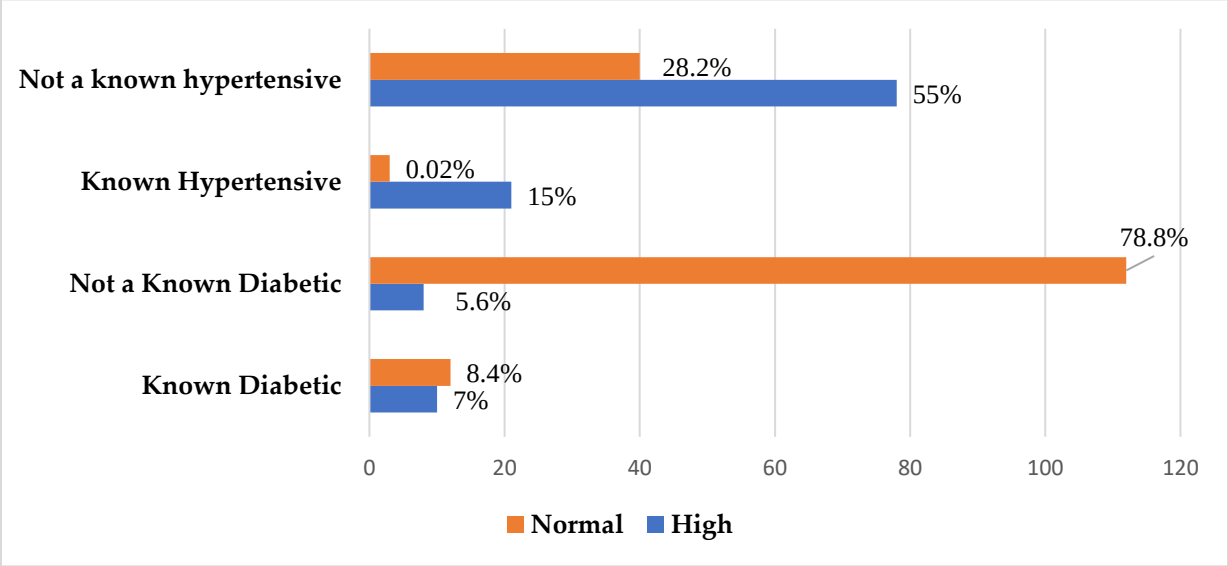

Figure 1: Categorisation of blood sugar and blood pressure values among study population. (N= 142)

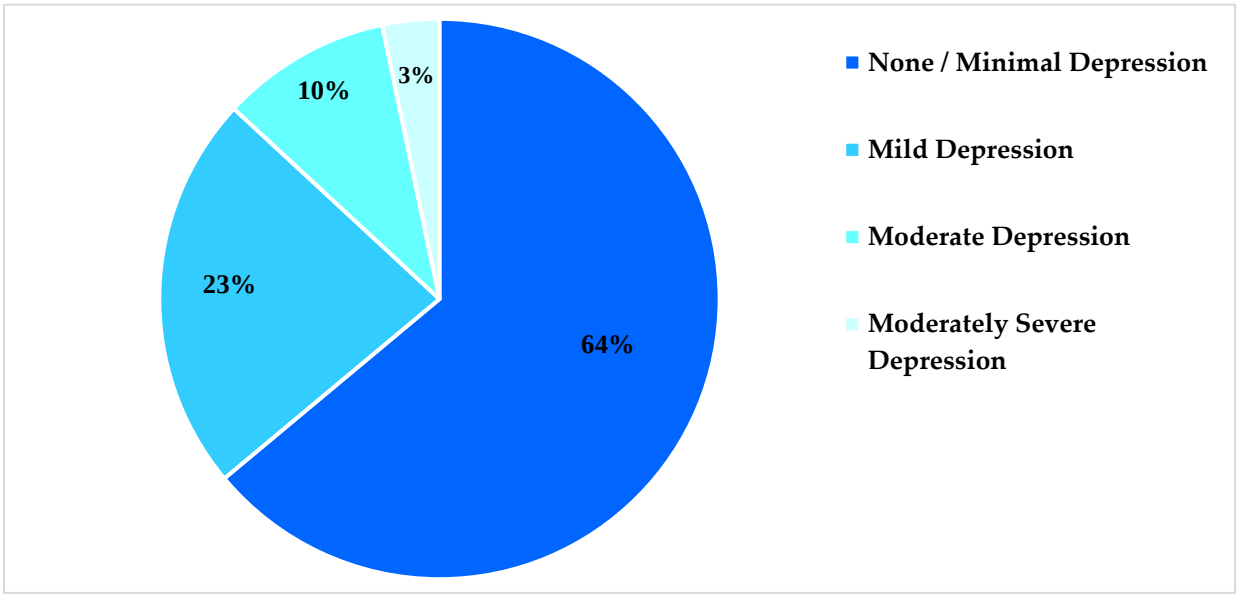

Figure 2: Level of depression according to PHQ-9 (N=142)

To assess the stress among the study subjects, the Perceived Stress Scale was used. The scale classifies perceived stress into low, moderate and high perceived stress. Among our study population, about 83% had high perceived stress. The complete results of PSS are depicted in Figure 3.

In multivariate analysis, the diabetic status had a significant association with educational status, alcohol usage and mental status (Depression) of the police personnel and the hypertensive status had a significant association with education status, alcohol usage and distance from residence of the police personnel.

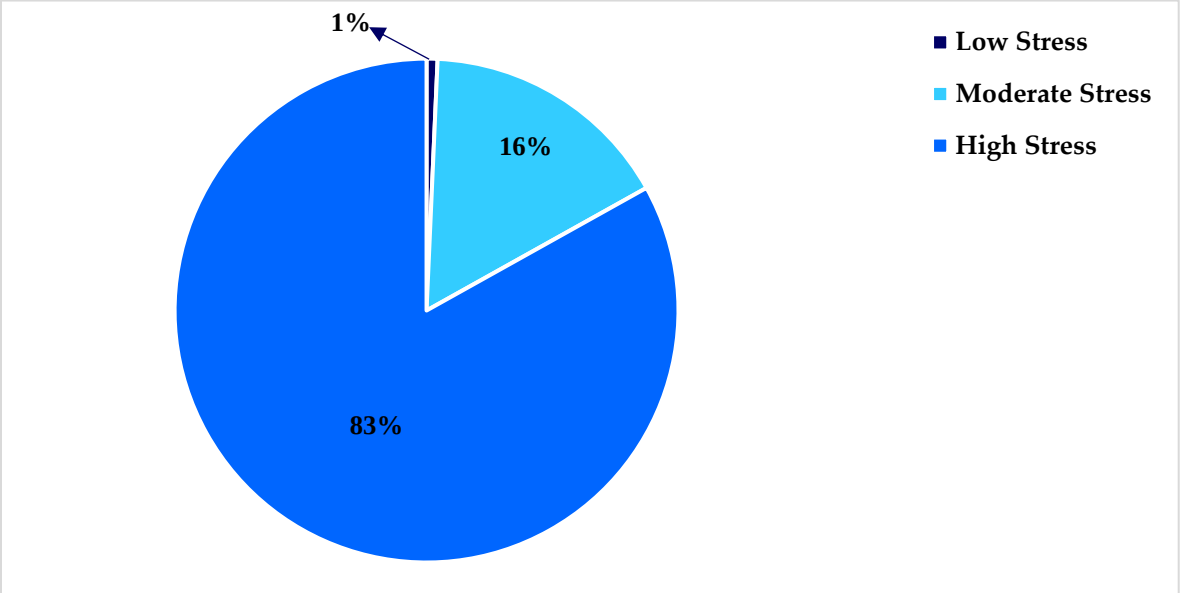

Figure 3: Level of stress according to PSS (N=142)

Discussion

This study aimed to assess the physical and mental health status of the police personnel working in a selected subdivision of Bengaluru District. About 83.8% of the police personnel were males substantiating the findings of Kishan Kumar et al. who found 95.10% males in their study.[8] About 33% of the police personnel were in the age group of 41 to 50 years as compared to Felix Johns et al. who found it to be 50.4%.[13] This study also found most police personnel were Hindus by religion, most of them living in nuclear families and found many graduates. The present study found that 68.3% of the police personnel were in the obese category and the mean BMI was 26.38 kg/m^2 as compared to Kishan Kumar et al. who found 36.7% of the police personnel were obese and the mean BMI was 24.[8] Our study also found that 69.7% and 14.08% of the police personnel were having high blood pressure and high blood sugar levels, whereas Felix Johns et al. found it to be 17.9% and 12.5% of the population had high blood sugar levels.[13] Parkash et al. observed the prevalence of hypertension in police personnel in Haryana to be 36.4%,[14] but in our study, we screened for high blood pressure where blood pressure was measured only once due to want of time, hence a follow-up and diagnosis may probably find many of the individuals with high blood pressure to be having pre-hypertension. In line with our study, Saudi Arabian police personnel also were observed to have high sugar levels, cholesterol levels and obesity.[15] Nearly 40% of our study population had substance use. This is in line with the study done by Boyanagari et al.[16] The high prevalence of substance use corroborates with occupational stress and maladaptive coping strategies. The study participants reported that this occupation has irregular working hours, lack of housing facilities closer to the workplace, frequent transfers, inadequate training and opportunity for advancement, leave issues due to repeated duties and not filling vacant posts. A study done by Boyanagiri et al. found that similar factors have contributed to stress and substance use among

police personnel.[16] Queiros et al. also observed that police personnel suffer from severe occupational stress and burn out and if this is not addressed by improving the working conditions, this could result in counterproductive work behaviours, increased mental illnesses, use of excessive force and violence at the workplace.[5]

According to our study about 36% of the police personnel had mild to severe depression according to PHQ-9 and 83% of them had moderate to severe stress according to PSS, whereas Katelyn K et al. found depression and stress among law enforcement personnel to be 44% and 61% respectively.[9] Lack of social support, post-traumatic stress, exposure to death, abuse and violence at work can contribute to depression in this population.[17] Simple screening using PHQ-2 can identify the high risk for depression/suicidality in this population and ensure adequate timely management is provided. Violenti et al. have identified exposure to abused or dead children, murders, use of violence in duty, physical attacks, administrative issues such as inadequate support from supervisors, lack of trust in the justice system, the law being lenient with the perpetrators of crime and insufficient manpower as stressors in police personnel.[18] As per the Occupational Safety, Health and Working Conditions Code 2020, all employees should be supported with information, instruction, training and supervision to ensure health and safety are not compromised.[19] However, this component is lacking in this occupational group. Due to COVID-19, the work burden of police officers increased, as they were involved in ensuring social distancing, lockdown measures and mask usage. These factors could have contributed to increased stress in this population.[20] Physical exertion, prolonged standing, unhealthy diet at irregular hours, exposure to mental and physical trauma, and low decisional latitude in this occupation cause stress and hypertension. This can make this population prone to coronary artery diseases. Wellness interventions such as the promotion of a healthy diet including 5 servings of fruits and vegetables intake per day, reduced salt intake, regular physical activity of at least 30 minutes per day, sleep hygiene, yoga and stress management training can be offered to this group of individuals. Annual Medical Examinations, non-invasive 10-year cardiovascular risk assessments, and a Tobacco cessation program can be provided at the workplace.[21] Hartley et al. have identified police personnel to be having higher depression levels and CVD risk factors such as high cholesterol levels, smoking and obesity as compared to the general population. The contributing factors observed are night shifts, improper sleep hygiene, and stress resulting in an inflammatory process.[22]

As a part of this study, those officers requiring medical advice for their mental and physical health conditions were given one-to-one counseling for lifestyle modifications and referred to the weekly Mental Health Clinic and Non-Communicable Disease Clinic of the nearby Government Taluk Hospital for further evaluation and management. Filling of vacant posts if any, to ensure adequate personnel management and arrangement for police residential quarters in the subdivision to avoid long travel could improve the quality of life of this population. Optimization of hours of work per day is essential.[17] Employee Assistance Programs with counseling services, access to cardiovascular workouts such as treadmills, the establishment of community gyms/open-air gyms, exercise bikes and strength training, and time allotment for games such as volleyball and softball could improve physical activity in this population.[23]

Conclusions

Stress, depression, and obesity were significantly high in this occupational group as compared to the general population. Regulated working hours, post-duty offs, annual medical examinations with a focus on physical and mental health, access to mental health services, positive mental and physical health programs and residential quarters near the workplace can improve the physical and mental health status of the police personnel.

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