From Traffic Control to Self-Care: A Study on Mental and Physical Well-being of Traffic Police Personnel in Identified Areas of North Bengaluru

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Abstract

The occupational circumstances and working conditions of traffic police personnel pose challenges to maintaining law enforcement in rapidly growing Indian cities and towns. Their vigilant operations in all weather conditions are crucial for effective traffic management and regulation. However, the nature of their work exposes them to both physical and psychological impacts, causing stress. This research aimed to identify and examine factors affecting the mental and physical well-being of traffic police personnel in North Bangalore, Karnataka, India. The study identified physical factors, working conditions, workplace stress, and coping mechanisms as significant causes of stress. A survey was conducted, gathering responses from 77 traffic police personnel. Data analysis utilized SPSS software, including reliability tests for questionnaire evaluation and hypothesis testing through multiple linear regression to identify factors contributing to mental and physical health. Results revealed that physical health, working conditions, and workplace stress significantly influenced mental health, while coping mechanisms significantly impacted physical health among traffic police personnel. These findings highlight the heightened stress levels experienced by traffic policemen, demanding attention from higher authorities. Regular stress management training is recommended to enhance their work efficacy and overall well-being.

Keywords
Mental health, physical health, Traffic police personnel, stress

1. Introduction
Traffic police personnel play a critical role in managing traffic congestion and ensuring the smooth flow of vehicles in bustling cities. However, the demanding nature of their job places significant stress on their mental and physical well-being (Goswami and Sharma 2023). This research paper aims to investigate the mental and physical health status of traffic police personnel in North Bengaluru, shedding light on the challenges they face and proposing strategies to promote their overall well-being.

Several studies and literature reviews have highlighted the stressors experienced by traffic police officers worldwide. The literature review conducted for this study, along with additional data, emphasizes the detrimental impact of occupational stress on the mental health of traffic police officers. It reveals a high prevalence of stress, depression, anxiety, and other mental health issues among traffic police personnel (Yadav et al. 2022). These studies further

emphasize the need for stress reduction programs, mental health support, and interventions tailored to address the unique challenges faced by traffic police officers (Padilla 2023).

Moreover, the literature review and findings from various studies demonstrate that traffic police officers are also susceptible to respiratory health problems and physical ailments due to exposure to air pollution. This highlights the importance of providing protective devices, such as masks, to mitigate the adverse effects of air pollution on their respiratory health (Krishnamurthy and Sharma 2021).

In addition to the stressors and physical health concerns, the research also focuses on the barriers faced by police officers when seeking mental health treatment. Stigma, concerns about confidentiality, and occupation-specific experiences with individuals in mental distress were identified as significant barriers. The study suggests potential improvements such as ensuring confidentiality, providing accessible electronic resources, and offering occupation-specific content to address these barriers (Newell et al. 2022).

Study done in Malaysia states that traffic police in Kuala Lumpur face job stress due to work-life imbalance, with no significant correlation found between workload, reward system, or job stress (Omar et al. 2020). Flexible work schedules and leave policies are recommended. In Nepal, traffic police officers experience health issues and anxiety (Thapa et al, 2019), while Hamburg emphasizes education and collaboration for interactions with individuals with mental illnesses (Wittmann et al, 2021). Bengaluru's traffic police require attention and stress management training (Mohiddina et al., 2022). A study on work-life quality at the RTMC highlights stressors and coping mechanisms, emphasizing the importance of motivation and reasonable regulations (Komang et al. 2021).

To address the gaps in existing research, this study specifically targets traffic police personnel in North Bengaluru, a region known for its bustling traffic and urban challenges. By examining the mental and physical well-being of traffic police officers, the research aims to identify the specific stressors they face, evaluate their coping strategies, and explore potential interventions to enhance their overall well-being.

The current study has been conducted in the field of occupational stress of traffic police personnel. Studies have found out that administrators are very much prone to stress. In line with this, as the traffic police personnel have been entrusted with administering and managing smooth functioning of road transport, it is significant that a study in this regard should be carried out. The study has covered 35 traffic police personnel working as 'Constables' and finding their prime cause of stress has been the objective of the study. For the purpose of collecting the data Operational Police Stress Questionnaire was developed. It shows that the study group is highly stressed as the scores are far above the cut offline. It is worth mentioning that the organization does not have any way (institutional arrangement) to deal with stress and related issues.

The findings from this study will contribute to the existing body of knowledge on the mental and physical health of traffic police personnel, specifically in the context of North Bengaluru. The research outcomes will provide valuable insights for policymakers, police departments, and healthcare professionals to develop comprehensive strategies and programs that prioritize the well-being of traffic police officers. Ultimately, by recognizing the importance of self-care and implementing measures to support the mental and physical health of traffic police personnel, we can create a sustainable work environment that promotes their overall well-being and enhances their effectiveness in managing traffic control.

Overall, this research paper aims to bridge the gap in understanding the mental and physical well-being of traffic police personnel in North Bengaluru and propose evidence-based interventions to improve their quality of life. By emphasizing the significance of self-care and addressing the unique challenges faced by traffic police officers, this study seeks to promote a holistic approach to their well-being and contribute to the advancement of policies and practices that prioritize the health and happiness of these dedicated public servants.

1.1 Motivation
The traffic police personnel in the North Bengaluru play a crucial role in managing the city's traffic, enforcing road safety regulations, and dealing with challenging situations on a daily basis. Despite the vital nature of their work, the demanding job conditions they face often go unnoticed, particularly regarding their impact on well-being.

- Traffic police personnel in the North Bengaluru face demanding job conditions that are often overlooked in terms of their impact on well-being
- Their role involves managing traffic, enforcing road safety regulations, and handling challenging situations on a daily basis
- Factors such as high stress levels, noise pollution, and long working hours contribute to potential negative effects on their mental and physical health
- Conducting a study on their well-being can provide insights into specific stressors, coping mechanisms, prevalence of mental health issues, and physical ailments
- The study can also explore self-care practices, access to healthcare, availability of support systems, and effectiveness of existing well-being programs
- Findings from the study can inform evidence-based interventions and policies to improve the well-being of traffic police personnel
- The study aims to raise awareness about the unique challenges they face and advocate measures to support their mental and physical health needs

1.2 Problem Statement

The traffic police personnel face High levels of stress and difficulties daily. Some of these challenges may cause physical health risks and hazards such as respiratory health issues and some may affect their mental well-being. The aim of this paper is to identify and examine the factors that affects the mental and physical well-being of traffic police personnel. The authors also intend to suggest effective ways to access and combat the challenges faced.

1.3 Objectives

The objectives of this paper are
1. To identify and analyze factors that affect the mental and physical well-being of traffic police personnel
2. To understand the health services availed by the personnel and its effect.
3. To develop interventions and strategies to mitigate the negative effects faced in the challenging work environment.
4. To develop a pamphlet to promote awareness about mental health and its mitigation for the traffic police personnel

2. Literature Review

(Krishnamurthy and Sharma 2021) The literature review focuses on the assessment of stress, depression, coping strategies, and respiratory health status among traffic police officers. The review aims to shed light on the significant stress and mental health issues prevalent within the traffic police fraternity, attributing them to various environmental factors. The study utilizes validated tools such as the Job Stress Scale, Beck Depression Inventory, and Coping Strategy Scale to measure stress levels, depression, and coping strategies, respectively. Additionally, spirometry is used to assess respiratory function. The review underscores the importance of addressing these issues and suggests potential interventions to support the well-being of traffic police officers.

(Yadav et al. 2022) The studies highlight the high prevalence of depression, anxiety, and stress among traffic police officers and emphasize the importance of addressing these issues through interventions, screening policies, and dedicated mental health services. Factors such as smoking, longer working hours, lack of job satisfaction, discrimination, and limited support services are consistently associated with increased stress levels among traffic police officers (Goswami and Sharma 2023). The studies recommend individual interventions, organizational support, and long-term working practice improvements to effectively address workplace stress and enhance the well-being of traffic police officers. However, limitations such as small sample sizes and limited generalizability, highlighting the need for further research and organizational reforms to effectively address workplace stress in law enforcement (Newell et al. 2022).

Traffic police officers face significant stress and mental health challenges in their occupation. Studies from various countries, including India, Nepal, and Malaysia, highlight the prevalence of stress, depression, anxiety, and other mental health issues among traffic police officers. Occupational stressors such as long working hours, lack of support, and exposure to air pollution contribute to these problems. The reviews emphasize the need for stress reduction programs, mental health support, and interventions to address the barriers to mental health care. Improving work

environments, implementing stress management training, ensuring confidentiality, and providing accessible resources are suggested as potential solutions. Overall, the findings emphasize the importance of prioritizing the well-being of traffic police officers and implementing measures to support their mental and physical health.

3. Methodology

To accomplish the objective, a comprehensive literature review was conducted, examining relevant research papers, studies, and reports that explore the impact of factors such as work environment, job stress, shift work, organizational support, and coping mechanisms on the well-being of traffic police personnel.

In addition to the literature review, surveys and interviews were conducted among traffic police personnel to gather firsthand information about their experiences and challenges. A carefully designed questionnaire was administered to collect data on various aspects, including the work environment, stress levels, job satisfaction, physical health, mental well-being, and the utilization of support services. The surveys were anonymous to ensure confidentiality and encourage honest responses.

The collected data was analyzed using descriptive statistics, which involved summarizing and interpreting the survey responses. This analysis provided insights into the prevalence and severity of mental and physical health issues faced by traffic police personnel. Furthermore, multiple linear regression (MLR) analysis was used to identify the significant predictors and their relationships with the well-being outcomes.

The surveys and interviews focused specifically on the frequency of usage of health services, perceived effectiveness and any barriers encountered in accessing these services. The data was analyzed using descriptive statistics to generate meaningful insights regarding the impact of health services on the well-being of traffic police personnel.

Based on the findings from the literature review, surveys, and interviews, interventions and strategies were developed to mitigate the negative effects faced by traffic police personnel in their challenging work environment. The literature review helped to identify existing successful interventions and best practices, while the surveys and interviews provided valuable input from the personnel themselves. Data analysis techniques were employed to identify common themes, patterns and areas requiring attention.

Finally, a pamphlet was created to promote awareness about mental health and provide practical strategies for its mitigation specifically tailored to the needs of traffic police personnel. The pamphlet was developed by incorporating observations, conclusions and referring to existing solutions that have not been implemented effectively. Graphic design tools namely Canva was utilized to create an engaging and visually appealing pamphlet. It included relevant information, statistics, tips and resources to raise awareness about mental health issues and promote self-care practices for traffic police personnel.

4. Data Collection

In order to conduct a comprehensive study on traffic management in the North Bengaluru region, a detailed questionnaire was prepared. The questionnaire was designed to gather information and insights from the traffic police personnel who work in the identified areas of North Bengaluru. The aim was to understand their perspectives, experiences, and challenges related to traffic management in the region.

To facilitate the data collection process, a Google Form was created based on the prepared questionnaire. This digital platform provided a convenient and efficient way for the traffic police personnel to respond to the survey. They could access the form online and provide their responses at their convenience, which helped ensure a higher response rate.

The study specifically focused on North Bengaluru, as it is an area known for its significant traffic congestion issues. By collecting data from the traffic police personnel who are actively engaged in managing traffic in these areas, valuable insights could be gained regarding the existing traffic management strategies, their effectiveness, and areas that require improvement.

A total of 77 traffic police personnel participated in the study, providing a substantial amount of data and diverse perspectives. The participants were selected based on their roles and responsibilities in traffic management within the

identified areas. Their experiences and expertise provided valuable insights into the various aspects of traffic management, such as traffic flow, enforcement of rules and regulations, infrastructure challenges, and public behavior.

By analyzing the data collected through the Google Form, the study aims to identify common patterns, challenges, and potential solutions for improving traffic management in North Bengaluru. The findings of this study have the potential to inform policy decisions, infrastructure improvements, and the implementation of new strategies to alleviate traffic congestion and enhance road safety in the region.

Overall, the combination of a well-prepared questionnaire and the use of a Google Form has allowed for the systematic collection of data from a significant number of traffic police personnel in North Bengaluru. This approach ensures that the study is based on reliable and diverse insights, making it a valuable resource for improving traffic management in the area.

5. Results and Discussion

The results of the study indicated several important findings regarding the well-being of traffic police personnel.
In terms of mental health, the study found that a significant proportion of traffic police officers reported symptoms of stress, anxiety, and depression. Factors such as long working hours, exposure to traffic-related risks, and lack of social support were identified as contributors to poor mental health outcomes.

Regarding physical health, the study revealed that a substantial number of traffic police officers experienced physical ailments such as musculoskeletal disorders and respiratory problems. These health issues were attributed to the physically demanding nature of their job, including prolonged standing, exposure to pollution, and irregular shift schedules.

Additionally, the study highlighted the influence of organizational factors on the well-being of traffic police personnel. Factors such as inadequate training, limited career growth opportunities, and insufficient resources were found to negatively impact both mental and physical health outcomes.

The discussion section of the study delved into the implications of these findings. It emphasized the need for interventions and support systems to address the mental and physical health challenges faced by traffic police officers. Recommendations included providing access to mental health resources, implementing ergonomic measures to reduce physical strain, improving work-life balance, and enhancing organizational support.

Overall, the study shed light on the significant well-being issues faced by traffic police personnel and emphasized the importance of addressing these concerns to safeguard the health and welfare of these individuals

5.1 Numerical Results
Reliability test

Table 1. Reliability statistics

Cronbach's Alpha	N of Items
.630	20

Higher Cronbach's alpha values (closer to 1) are desirable, indicating greater internal consistency and reliability of the questionnaire. Here the alpha value of 0.630 suggests moderate internal consistency among the items in the questionnaire.

Regression Analysis
1. Mental health as dependent variable

Table 2. R-squared and Adjusted R-squared value

Model	R	R Square
1	0.875[a]	0.764

The obtained R-squared value of 0.764 from the regression analysis holds significant meaning in understanding the relationship between the independent variables (coping mechanism, work-life balance, working conditions, designation, physical factors, and workplace stress) and the dependent variable, which is mental health. The R-squared value indicates that approximately 76.4% of the variability in mental health can be explained by the combined influence of these independent variables. This suggests that the chosen variables collectively have a strong association with mental health outcomes.

Multiple linear regression coefficients:

Table 3. Co-efficient table

Model	Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	3.323	.049		.049	.000
Physical Factors	.049	.049	-.152	-3.082	.003
Work Life Balance	-0.41	.129	-.040	-.316	.753
Working conditions	.179	.134	.173	1.333	.048
Work Place Stress	.728	.148	.007	.052	.029
Designation	-.239	.145	-.233	-1.647	.105
Coping Mechanism	-.115	.172	-.112	-.672	.504

From the table, it is observed that the variables physical health, workplace stress, and working conditions have significant levels (p-values) that are less than 0.05. In statistical analysis, a significance level of 0.05 is often used as a threshold to determine whether a variable has a statistically significant impact on the dependent variable, in this case, mental health.

2 . Physical health as dependent variable –

Table 4. R-squared and Adjusted R-squared value

Model	R	R Square
1	.474[a]	.224

The obtained R-squared value of 0.224 from the regression analysis holds significance in understanding the relationship between the independent variables (coping mechanism, work-life balance, working conditions, designation, workplace stress, and mental health) and the dependent variable, which is physical health factors. The R-squared value indicates that approximately 22.4% of the variability in physical factors can be explained by the combined influence of these independent variables. While this value is relatively low, it suggests that the selected variables collectively have some association with physical factors.

Multiple linear regression coefficients:

Table 5. Co-efficient table

Model	Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	1.363	.765		1.782	.080
Work Life Balance	0.024	.117	.024	.203	.840
Working conditions	-.079	.123	-.079	-.664	.522
Work Place Stress	.051	.134	.051	.382	.704
Designation	-.113	.133	-.114	-.850	.399
Coping Mechanism	.498	.117	.085	.707	.482
Mental Health	0.83	.117	.085	.707	.482

From the table, it is observed that the variable coping mechanism has a significance level (p-value) of .001 which is less than 0.05 thus indicating that coping mechanism has a major impact on the physical health of traffic police personnel.

5.2 Proposed Improvements
According to the available data, the distribution of stations is such that there is one station for every three regions. Therefore, to improve the overall efficiency and effectiveness of the transportation system, it is advisable to establish a dedicated traffic department at each regular station. By implementing this approach, various benefits can be attained and enhanced.

By incorporating additional personnel, the existing workforce will be augmented, leading to a more equitable distribution of tasks. During the modern era, new camera models have been introduced. However, the process of setting up these cameras is known to be time-consuming, and the cloud platform they rely on is significantly outdated compared to the ones already being used globally. The implementation of this solution will lead to improved mobile monitoring capabilities and more efficient case resolution processes.

5.3 Implementation of strategies
The following were suggested as an outcome of this study:
- Building cognizance among the traffic police personnel: Organization educates traffic police officers, fostering understanding of mental health and creating a supportive environment through awareness initiatives.
- Initiating mental health assistance programs: Organization initiates mental health programs for traffic police officers, providing counselling, therapy, and support groups tailored to their unique needs.
- Starting a petition to develop conscience regarding mental health: Group starts a petition to raise mental health awareness among traffic police, engaging officers, families, and the public for support.
- Influence traffic police community to provide free diagnosis and subsidized treatment: Organization advocates for free diagnosis and subsidized treatment for traffic police, emphasizing mental health importance to authorities and promoting accessibility.

6. Conclusion
The objective of our research was to identify and understand the challenges experienced by traffic police personnel. To achieve this, our team visited identified locations and interviewed officers from different ranks. We employed several research methods, including direct questioning, sample size calculations, reliability tests, and linear regression analysis, to gather and analyze data. Our findings revealed a range of issues that significantly impact the mental health

of traffic police personnel. One prominent factor is work-related stress, which arises from the demanding nature of their job and the constant exposure to potentially dangerous situations. Additionally, trauma resulting from accidents or witnessing distressing incidents on the road contributes to their mental health challenges. Fatigue and sleep disturbances were also identified as significant problems, likely stemming from long working hours and irregular shifts.

Furthermore, problems within the department, such as a lack of transparency, inadequate support, and insufficient resources, further exacerbate the difficulties faced by traffic police personnel. These findings underscore the pressing need for interventions and support systems to address the mental well-being of these dedicated professionals and improve the overall functioning of traffic departments.
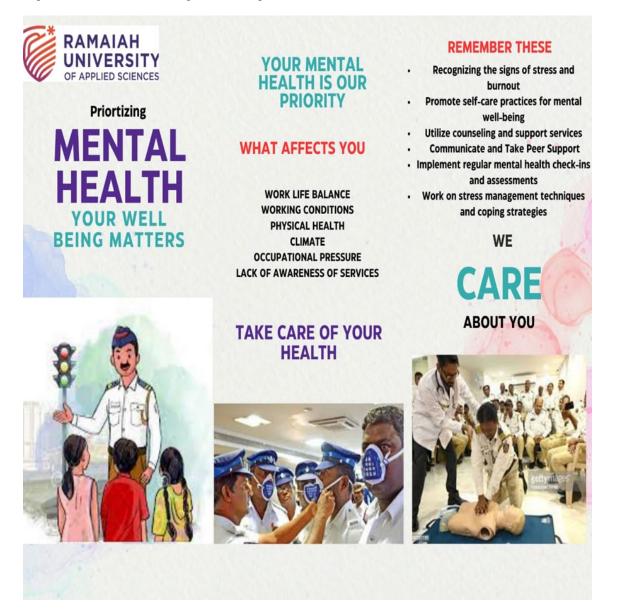

Figure1. Pamphlet to promote awareness about mental health and its mitigation for the traffic police personnel

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