

Original Research Article

Identifying the dimensions of occupational stress by factor analysis among policemen in Tamil Nadu

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Received: 02 September 2019

Revised: 17 September 2019

Accepted: 18 September 2019

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ABSTRACT

Background: Stress can be defined as a physiological response to physical and mental demands. These stresses can negatively influence the performance and wellbeing of the employees. Police officers are a part of unique occupational population who are exposed various stressful conditions daily. This study attempts to explore factors influencing occupational stress faced by Policemen.

Methods: The study was a cross sectional conducted among the policemen under three subdivisions of Villupuram, Tamilnadu. Operational police stress questionnaire was used to assess the stress levels with 20 statements which were then extracted into four dimensions by factor analysis.

Results: By factor analysis stress was categorized into four factors or dimensions namely social and health related stress, time management stress, emotional stress and work-related stress.

Conclusions: This study highlights that the major dimensions causing occupational stress among policemen which will form a framework for planning programs for stress management.

Keywords: Occupational stress, Policemen, Factor analysis, Time management, Emotional, Work

INTRODUCTION

Stress can be defined as a physiological response to physical and mental demands or “An interaction between environmental forces and events called stress precipitators”.¹ The stress induced physiological changes are usually adaptable, however when stressful event occurs frequently, then the changes become pathological in nature.² Stress plays an important role in everyone’s lives, in specific occupational stress and workplace health have become a major issue of concern as every occupation has its own workplace stress. These stresses can negatively influence the performance and wellbeing of the employees.^{3,4}

Police officers are a part of unique occupational population who are exposed various stressful conditions

daily like exposure to violence, fear of severe injury or being killed on duty, long duty hours, irregular diet, disrupted sleep patterns and have high rates of tobacco and alcohol consumption than general population.^{5,6} These work-related stresses can further be aggravated by individual’s personality traits or wrong coping methods. Inability to handle these translate into rude behaviour on duty like treating their subordinates in a shabby and insulting manner.⁷

A qualitative analysis shows policemen had difficulty in managing with seniors (35%), colleagues (25%), subordinates (40%), political interference (90%), long and odd work hours (80%), and changing priorities (70%). Findings suggest that suicide rates among policemen (24%) are higher than general population (13.5%). Also demonstrates the high rates of divorce and

reduced quality of life.⁸ A recent study shows that majority of the policemen had high and very high levels of stress (83.8%).⁹

High work-related stress can contribute to increased risk of developing type 2 diabetes mellitus, Systemic hypertension, and cardiovascular diseases. Also, can induce metabolic syndrome and found associated with depression.^{2,9,10}

There are many scales to assess stress among different occupation, for policemen various scales like operational police stress questionnaire (PSQ-Op), organizational police stress questionnaire, DECORE questionnaire, Lawrence's police stress inventory etc., used to assess the stress levels. But no specific scale on dimensions/types of stress is present. Hence this study was undertaken to identify the dimensions of occupational stress among policemen in state of Tamil Nadu, India.

METHODS

Study area and population

The study was conducted in Villupuram town in the state of Tamil Nadu, India. The policemen who were the interest in this study belong to three subdivisions namely law and order, crime and Traffic under the Tamil Nadu police department. Due written permission was obtained from deputy super indent of police before initiating the study. Written informed consent was taken from the study subjects.

Study design and period

The study was a cross sectional study design conducted during the period January 2018 to December 2018.

Sampling procedure

A multistage sampling technique was employed to select the representative sample. The state of Tamil Nadu had 33 districts among which Villupuram district was selected randomly. Villupuram police department had seven sub-division with 56 police stations. One Subdivision (Villupuram) which had 9 stations was selected by simple random technique. Out of the 196 policemen working in these 9 stations, 171 who were willing to participate in the study were selected.

Inclusion criteria

Policemen working in the selected 9 police stations and those who are aged more than 25 years.

Exclusion criteria

Policemen who are seriously ill and those who are not willing to participate in the study.

Data collection

Ethical approval was obtained from Institutional Ethics Committee before commencement of the study. Socio demographic details and relevant lifestyle characteristics were collected using a Semi Structured questionnaire. Participants were well informed about the study to enhance maximum participation. The scale used for measuring occupational stress was adopted from PSQ-Op. The scale consisted of 20 items based on 7-point scale that ranges from "no stress at all to "a lot of stress". To explore the data, factor analysis using varimax rotation procedure was done by using SPSS version 23. Keeping Eigen value more than 1, a total of six factors were extracted. On analysis by scree plot, it is identified that four factors id ideal. Hence Eigen value was fixed as 1.2. Further, values of Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy ranging from 0.5 to 1.0 were considered as an indicator of appropriateness for factor analysis. The KMO value is 0.685. Since communality depicts the proportion of variance a variable share with other variables, variables with communality above 0.50 were retained. Besides these, factor loadings above 0.50 and high percentage of variance explained were also taken into consideration. The results of factor analysis indicate that all the four dimensions obtained are in connection with occupational stress experienced by the policemen.

RESULTS

In the present study, majority of participants were in the age group 31-40 (42.7%). Out of 171 subjects most of them were male (88.3%), married (84.2%). More than half of them were above graduates (50.9%), Post graduate (12.9%). Majority of them were from nuclear (43.8%) and joint (45%) families (Table 1).

In this study, majority of the participants were constables (56.7%) and had <10 years of service (49.1%) with monthly income of Rs. 25,000-50,000 (46.8%) (Table 2).

As a result of factor analysis (Table 3), the 20 statements of the operational police stress questionnaire were categorized into four factors or dimensions they are social and health related stress, time management stress, emotional stress and work-related stress. Among the four-time management stress was the most significant dimension with mean value of 4.64 which is moderate level of stress that is experienced by the policemen. Overtime demands under this dimension received the highest mean score of 5.09 and standard deviation of 2.05. In contrast, the least dimension of stress was Work related stress (mean=2.7) with "paperwork" being the statement with least mean score of 1.46 and standard deviation of 1.34, which is mild stress experienced by the policemen.

Table 1: Socio-demographic distribution of the study subjects.

Variable	Category	Frequency	%
Age (years)	≤30	37	21.6
	31-40	73	42.7
	41-50	32	18.8
	>50	29	16.9
Sex	Male	151	88.3
	Female	20	11.7
Marital status	Unmarried	27	15.8
	Married	144	84.2
Education	Secondary	62	36.3
	Graduate	87	50.9
	Post graduate	22	12.9
Family type	Nuclear	92	43.8
	Joint	77	45
	Extended	2	1.2

Table 2: Distribution of the study participants by occupational details.

Variable	Category	Frequency	%
Designation	Constable	97	56.7
	Head constable	41	24
	Sub inspector	33	33
Years of service	<10 years	84	49.1
	10-20 years	34	20
	>20 years	53	30.9
Monthly income (in Rs.)	<25000	70	40.9
	25000-50000	80	46.8
	>50000	21	12.3

Table 3: Descriptive statistics of operational stressors.

Factors	Mean	S.D.	F.L.	V.E. (%)
Social and health related stress				
Eating healthy at work	3.84	2.22	0.76	28.90
Finding time to stay in good physical condition	3.32	2.24	0.61	
Fatigue (e.g., shift work, over-time)	3.71	1.87	0.70	
Occupation-related health issues (e.g., back pain)	3.60	2.29	0.65	
Lack of understanding from family and friends about your work	2.91	2.32	0.63	
Making friends outside the job	3.23	2.02	0.62	
Upholding a “higher image” in public	2.64	1.78	0.61	
Time management stress				
Over-time demands	5.09	2.05	0.73	10.93
Managing your social life outside of work	4.82	2.07	0.65	
Not enough time available to spend with friends and family	4.89	2.19	0.59	
Feeling like you are always on the job	3.77	2.25	0.45	
Limitations to your social life (e.g., who your friends are, where you socialize)	3.74	1.94	0.60	
Emotional stress				
Working alone at night	3.75	2.49	0.41	6.97
Work related activities on days off (e.g., court, community events)	4.60	2.32	0.52	
Traumatic events (e.g., MVA, domestics, death, injury)	3.19	2.12	0.73	
Negative comments from the public	4.54	2.41	0.46	
Friends/family feel the effects of the stigma associated with your job	2.08	1.61	0.66	
Work related stress				
Shift work	3.19	2.19	0.70	6.36
Risk of being injured on the job	2.41	1.92	0.56	
Paperwork	1.46	1.34	0.52	

S.D.: standard deviation; F.L.: factor loading after varimax rotation; V.E.: variance explained.

DISCUSSION

Social and health related stress

Seven statements were extracted under this factor viz., eating healthy at work, fatigue, occupational health related issues, lack of understanding from family, making friends outside job, upholding a “higher image” in public, finding time to stay in good physical condition (Table 3). The most significant variable contributing to health-related stress is eating healthy at work (factor loading=0.76). This is in accordance with King et al who concluded that there is a strong association between perceived stress and disordered eating involvement among nurses.¹¹

Social and health related stress received a mean score of 3.32 indicating that personal health related events, lack of social participation and lack of understanding from the family acts as an occupational stressor for most of the policemen. This finding is supported by Nixon et al who opines that there is a consistent association between workplace stressors and a wide variety of physical health problems like back pain, fatigue etc.¹² Also, Bowling et al observed that higher workload was associated with both poorer psychological well-being (e.g. general well-being, depression, fatigue and burnout) and lower levels of physical health.¹³

Time management stress

By factor analysis five statements were fitted in to this dimension, they are over-time demands, managing your social life outside of work, not enough time to spend with friends and family and feeling like you are always on the job. The highest contributor towards this factor here is over time demand with factor loading of 0.73. In this regard, Violanti et al emphasized that policemen have nature of overtime work and it was a major stressor in his study¹⁴.

Time management stress secured a mean score of 4.46 which is the highest of the four dimensions. This implies that managing time balance i.e., to meet the demands of work and home is felt as a moderate stressor by the study participants. This can be attributed nature of police work which lacks fixed working hours, time pressures, long work hours and work load outside duty time. This finding is supported by Brown et al who quoted that more than 50% of the police officers felt that “time pressures, long work hours and demands of work vs home” were stressors in their job.¹⁵ Chakraborty et al in their study on traffic constables found that “excessive job/time pressure” and “unable to give time to family” were among the major causes of stress in their participants.¹⁶

Emotional stress

Five statements extracted under this dimension were traumatic events, friends/family feel the effects of the

stigma associated with your job, work related activities on days off, negative comments from public and working alone at night (Table 3). The highest contributor to this factor is “traumatic events” with the factor loading of 0.73 in this regard Brown et al reported that more than 50% of the officers felt stress in situations like “attending that scene of sudden death and arresting violent person”.¹⁵

Emotional stress dimension with five variables also received a mean score of 3.63, which is moderate level of stress. This indicates that maintain emotional stability under all circumstances is being considered stress among the policemen. Overtime, cumulative exposure to trauma and other emotional stress can have a negative impact on officers mental and physical health.¹⁷ In line with this Carvalho et al also stated that in their study the prevalence of emotional stress was 45.7%.¹⁸ In another study by Agolla et al presents that only 12 % of the police officers felt stress by “negative public image of police”.¹⁹ Also Hall et al in their study confirmed that effects of job demands and emotional exhaustion affects police officers personal lives, which contributes to work-family conflict which in turn affects their ability to perform their duties efficiently.²⁰

Work related stress

The last dimension namely work-related stress was arrived with three statements viz., Shift work, risk of being injured on the job, paperwork and limitations to your social life. This dimension got a mean score of 2.35 which was the least among the four dimensions. This shows that work related stressors like shift work, risk of being injured and paperwork were considered as mild stress by the participants. But, Stanely et al noted that’s the police experience several stressors that are often not captured by more general measures including shift work, role overload and self-sacrifice.²¹ Collins et al in their study found many organizational stressors like working shifts, paperwork and long working hours were significantly more stressful to police officers.²²

Strengths and limitations

This study being sensitive in nature might have made the policemen underplay the stress responses, however personal interaction with officers in addition to questionnaires helped overcome this. This study gives valuable information on the various stress factors categorized under four separate dimensions which may help future researchers to go in depth into each dimension.

Even though sampling procedure was done different work setting of different policemen might be able to influence the stress factors. The study also concentrates only on organizational factors (20 statements), thus further studies on stressors apart from these like domestic problems and personality types can be considered.

CONCLUSION

This study highlights that the major dimensions causing occupational stress among policemen are social and health related stress, time management, emotional and work-related stress with time management stress being the most influencing dimension. The job of policing is strenuous and there is greater need to conduct more research on police stressors since the rate and nature of police work changes so fast compared to other jobs. The results of this study can be used to frame measures to reduce occupational stress among policemen by further studies.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Loganathan A, Govindarajan PK, Felix JW. Dimensions of occupational stress by factor analysis among policemen in Tamil Nadu. *Int J Community Med Public Health* 2019;6:4505-9.