Original article

Assessment of health status of traffic constables: An occupationally exposed group in Pakistan

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ABSTRACT

Background: Traffic constables are exposed to various occupational health hazards worldwide. This study is planned to assess occupational health hazards in traffic constables in Punjab, Pakistan.

Subjects and methods: A descriptive cross-sectional study was conducted in different cities of Punjab including Lahore, Gujranwala, Bahawalpur, Bahawalnagar, Sialkot and Islamabad from March till August 2018. A sample of 384 traffic personals were selected by using non-probability convenient sampling technique. Retired traffic constables and those with work experience less than a year were excluded. A pretested questionnaire was used to conduct the interviews after taking informed consent. Data was collected and analyzed using SPSS version 22 and presented in frequency tables and charts.

Results: Maximum number of constables belonged to 31-40 years of age group. Among them 98.7% were male, 25% were having education level above graduation. Results of physical health hazards showed that 53% of warden were smoker, 16.14% were known diabetics and 19.53% were found to be hypertensive. Other physical ailments included respiratory problems (23.4%), hearing impairment or loss (15.88%) and various eye ailments (13.28%). Additionally, 9.1% of participants had evidence of lead poisoning, 33.84% complaints of tightness in muscles and 13.72% of headache, whereas 35.7% had met an accident in the last year. Prevalence of stress and anxiety were 30% and 33.33%. Regarding social health issues 36.7% reported that they were unable to give family time and 42.48% felt lack of independence due to their occupation. Job satisfaction was reported by 50%.

Conclusion: The traffic constables in Punjab suffer from a large number of physical, mental and social health issues. Their perception about their occupational health hazards is low and needs improvement through imparting health education.

Keywords:

Traffic constables, occupational health hazards, mental health, social health

INTRODUCTION

With urbanization and industrial revolution, the increasing population of metropolitan cities demand increase in vehicles and better transport system.[1] Traffic constables play key role in maintaining the main stream of traffic in these metropolitan cities and face great threat to their health due to multiple exposures during their working hours.[2] Occupational health hazards in traffic constables produce physical, mental and social consequences.[3] Globally, it is accepted that traffic police officers are extremely vulnerable group of professionals due to their continued and prolonged daily exposure to a variety of health hazards ranging from respiratory problems to psychological distress.[4] Traffic police personnel in developing countries face significant number of health issues. Research in Gujarat, India, studied the prevalence of various diseases in traffic police personnel and found that 7% of traffic police officers suffered from eye problems, 35.50% from blocked ear sensations, 51.50 % from mild hearing loss, 13.60 from moderate and 0.90% from severe hearing loss. 62.65% had joint problems, 42.37% had burning sole, 20.33 had back pain, and 16.3% had broken sleep.[5] The number of studies conducted in Pakistan is extremely limited. One study in Islamabad, Pakistan found that blood lead levels were significantly high in traffic police personnel as compared to normal individuals.[6] Since Traffic police officers spend most of their day being exposed to air pollution and noise pollution and are in close contact with the fumes emitted from vehicles, they suffer from both air and noise induced illness. The impact of continuous exposure to emissions such as lead, nitrogenous compounds, carbon monoxide leads to serious physical ailments like asthma along with hearing loss due to noise from horns and psychological disturbance such as insomnia and anxiety. Not only this but also the social

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health is markedly affected due to their stressful job.[7] A lot of research has been conducted in neighboring countries of Pakistan regarding health hazards faced by traffic police personnel. A research conducted in Patiala, India, showed that out of 100 traffic police men 68% had frequent cough, 22% had shortness of breath and 36.2% had irritation in respiratory tract.[8] Study was conducted in Hong Kong, which has assessed that 80% of traffic constables working there have reported exposure to environmental tobacco smoke and the odds ratio of having respiratory systems is 20.4% times more in men as compared to women.[9] Another study conducted in Saudi Arabia, showed that usage of protective devices against occupational health hazards is negligible in traffic wardens.[10] Due to lack of comprehensive study on this topic in Pakistan, this study is planned to cover all aspects of health, including physical, mental and social components in this vulnerable group related to their occupational exposure. The purpose of this study is to find out the health status (including all three parameters of health, physical, mental and social) faced by traffic police constables related to their occupational exposure.

SUBJECTS AND METHODS

A descriptive cross-sectional study was carried out in the Province of Punjab and capital area of Islamabad in Pakistan from March till August 2018. The participants of this research included traffic constables on roads performing their duty during process of data collection. Data was collected on a structured questionnaire through interview-based technique. The questionnaire contained both open and closed ended questions. Data was collected from Lahore, Sargodha, Bahawalpur, Bahawalnagar, Gujranwala and Sialkot from Punjab and also included sample from federal area of Islamabad. A wider area was selected to have a representative sample of whole province. A sample of 384 traffic constables was collected through non probability, convenience sampling technique. All traffic police constables of identified areas in Punjab, available at the booth and gave informed consent, were interviewed. Those with work experience of less than a year were excluded. A pre-tested questionnaire was used. The questionnaire was based on five components, covering socio-demographic profile, physical health status, mental health status and social health status. In last component questions related to their exposure to accidents and use of personal protective equipment were asked. Pretesting feedback helped establish internal consistency of the questionnaire. Traffic police officers were informed and briefed on the purpose of the study. After informed consent, data was collected on questionnaire. Data was entered, coded, cleaned and analyzed on PC computer with SPSS (Statistical Package for Social Sciences) version 22. The data was presented in the form of frequency tables, bar charts and pie charts. IRB clearance was taken before data collection and data was collected with anonymous forms.

RESULTS

The study was conducted on 384 traffic constables in Punjab and Islamabd. The maximum number of traffic constables belonged to Lahore 185 (48.2%). The distribution of other respondents can be seen in (Figure 1).

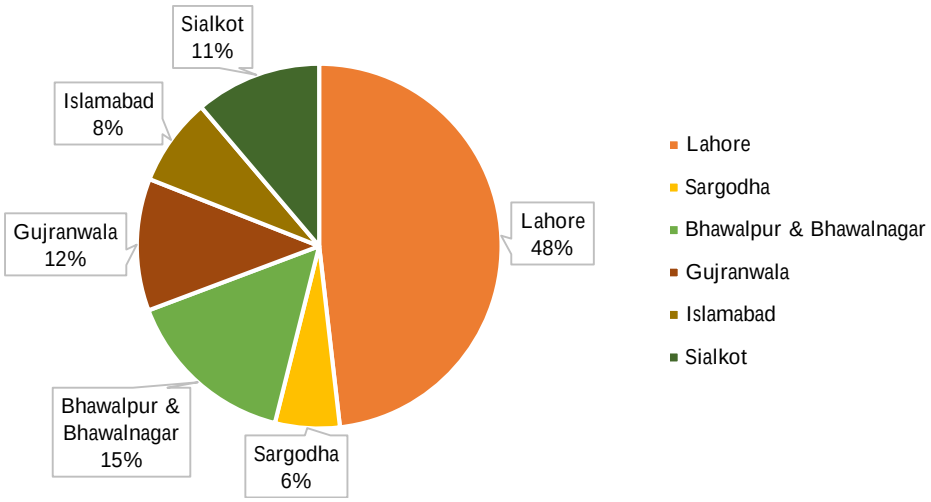

Figure 1. Geographical distribution of the sampled population among traffic constables

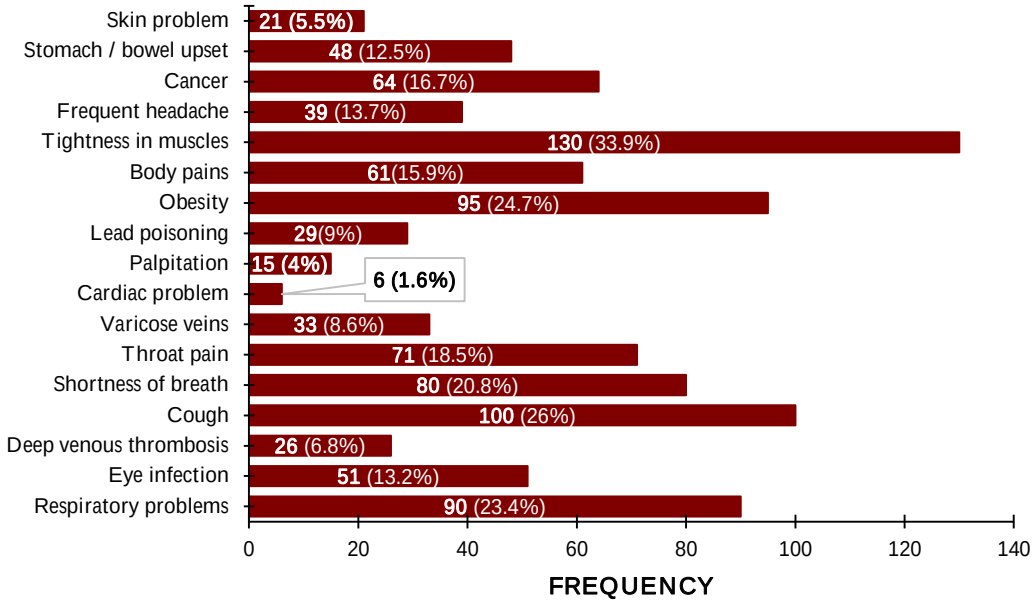

Figure 2. Physical health ailments in traffic constables

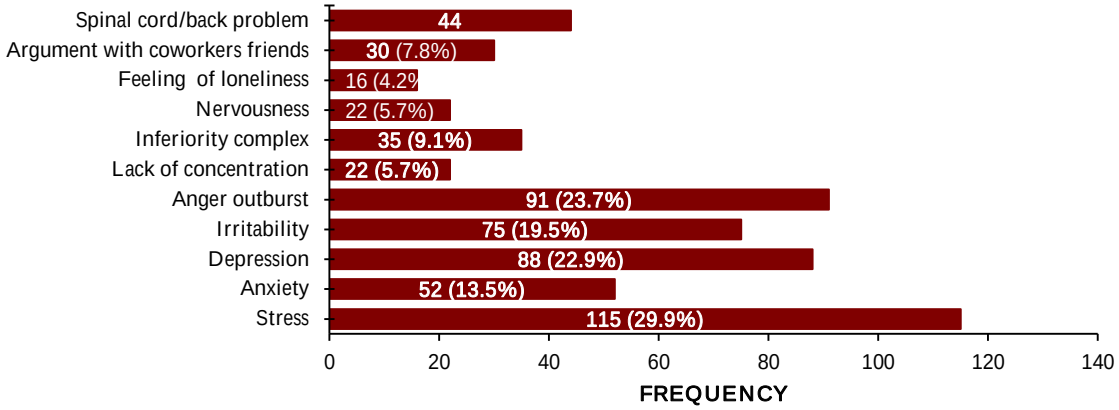

Figure 3. Mental health issues in traffic constables

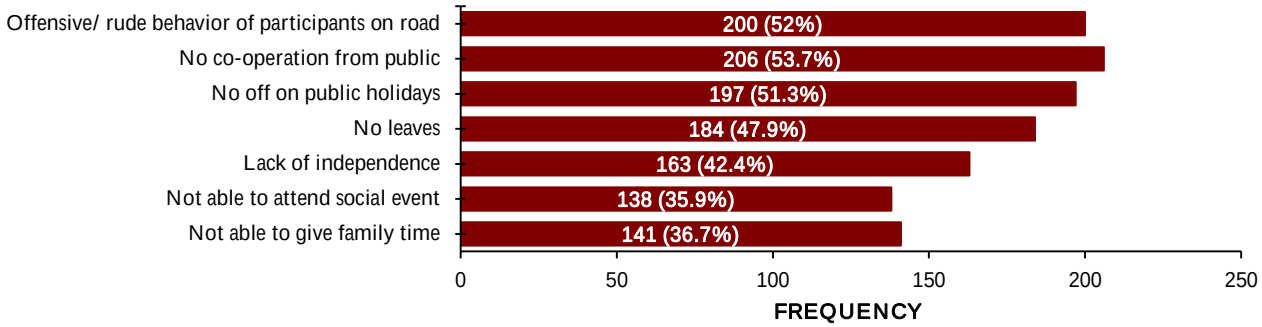

Figure 4. Social health issues in traffic constables

Maximum number of constables belonged to age group between 31–40 years constituting 237(61.7%) of the participants. There were 379 (98.7%) males and 5 (1.3%) females. Educational status of participants showed that 171 (45%) were graduate. Total 335 (87.2%) participants were married. Majority of them (105; 27.3%) had served for 6-10 years and 162 (42.2%) had salary between 41000-50000 PKR. Out of 384, 204 (53%) were smokers whereas alcohol consumption was reported by 23 (6%) and 39 (10.2%) reported drug abuse.

When these traffic wardens were asked about their perception of occupational health hazards, 332 (86.5%) believed that this profession has associated risks of occupational and health hazards. Multiple responses were obtained when it was inquired about their perception for occurrence of disease associated with this occupation. A vast majority believed that respiratory problems including cough and shortness of breath are encountered due to this profession, whereas 153 (39.8%) believed that hearing impairment is a major issue and 123 (32%) believed that musculoskeletal and backache are common due to occupational exposure.

On inquiry about their physical health, it was reported by 75 (20%) that they developed hypertension and 62 (16%) were having diabetes, 61(15.88%) were suffering from hearing problem impairment. Muscular cramps were the most common complaint in 34% of the participants. (Figure 2)

Mental health issues are always neglected ones. When it was asked from the participants to mention mental health issues, 115 (30%) of them confessed that they feel stressed because of their job and 88 (23%) were suffering from depression. Anger burst outs were mentioned by 91 (24%) of the participants. Other mental health issues included irritability, lack of concentration, inferiority complex, nervousness and feeling of loneliness. (Figure 3)

Regarding social health issues, out of 384, 141 (36.7%) felt that they were not able to give sufficient productive time to their family. Two hundred participants (52%) were facing offensive behavior from public. Many of them reported lack of off days for them as 197 (51.3%) were not getting off on public holidays. (Figure 4)

Out of 384 participants, 266 (69.3%) think that risk of accidents being on their duty increases in their profession, and 137 (35.7%) had met an accident in the last year while performing their duties on road. Regarding use of personal protective equipment (PPE) 129 (33.6%) reported using masks always, 143(37.2%) always used helmet, 185(48.2%) used sunglasses and earmuffs were regularly used by only 111(28.9%) of the traffic wardens. Out of 384 participants, 28 (7.3%) were having drinking water facilities, 58 (15.1%) were having washrooms facilities, 69(18%) were having health insurance facilities, 8(2.1%) were having facilities of cabin shelter, 221(57.5%) were having facility of uniform. Out of 384 participants, 242(63%) wanted to change the job.

DISCUSSION

Occupational health hazards in case of traffic police personnel pose a major threat to their lifestyle and behavior. The results of this study show that 61.7% (n=237) traffic constables were in the age group between 31-40 years of age. Similar results have been obtained from India where maximum number of traffic police constables belonged to the same age group.[11] Higher number of male wardens (98.7%) in the enrolled population point out to the fact of the local societal barriers for the females to work indoors instead of these types of field jobs. Same trend of gender distribution is seen in Nigeria predominance of male traffic constables.[12] Majority of the traffic constables in this study were graduate (44.5%) and same qualification is the minimum requirement to be inducted in this profession by India.[13] Smoking is known to be a critical factor in altering lung functions. 53% of the sampled population in this study were smokers. Similar studies were conducted in Pondicherry in 2010 which showed decreased functional lung capacity in traffic police due to chronic smoking.[14,15] In this study 16% of the studied population was suffering from diabetes and 19.53% from hypertension. In contrast to these findings Tesfaye and colleagues in 2016 observed the prevalence 5% diabetics in traffic police.[16,17] Contradictory results were observed in a survey conducted in Iran where 87% of the wardens were diagnosed as hypertensives.[18] Traffic police personnel are at the highest risk for the adverse effects of air pollution, compared to the general population. The gases and toxic chemicals which are released from vehicular emission produce allergy and irritation in the lungs[19]. In the current study, 23.4% of the participants were suffering from respiratory problems which is comparable to most of the studies which have also shown decreased lung functions associated with higher respiratory signs and symptoms such as cough, shortness of breath, phlegm and rhinitis.[20]

Sustained, repeated exposure to excessive sound levels lead to noise-induced hearing loss (NIHL).

Chronic exposure to traffic noise is an important source of occupational hearing loss, especially in motorcycle traffic police officers. In this study, 15.88% of the traffic constables were experiencing hearing loss. One of the studies conducted by Kanitha and coauthors in 2017 showed that NIHL was present in 94% of the traffic police wardens, though severity of NIHL was mild in 26% of participants.[21] Eye infections rate was 13.281% in the present study. While in a study conducted in India, prevalence of eye problems was found to be 44.81% which shows much higher frequency than this study.[22] Actual cases of Deep Vein Thrombosis was 6.771% and of varicose veins was 8.594% in current study which is more than 4.61% reported in another study from India[2] and research has shown that a large number of traffic constables have inadequate knowledge regarding the cause of development of this disease.[23] Multiple other studies have shown positive associations between exposure to air pollutants and increased risk of cardiovascular diseases such as hypertension, ischemic heart disease, arrhythmias, heart failure, stroke and sudden death in traffic personnales.[24,25] In the current study, only 9.119% of the participants had evidence of lead poisoning which markedly differs from the study done on Sri Lankan population of traffic police wardens which revealed a mean blood lead level of 53.07 µg/dL.[26] Musculoskeletal pain is due to repetitive strain, and overuse activities is reported as important occupational health hazard in traffic constables. In the present study, 33.84% participants had complaints of tightness in muscles, headache (13.72%) and generalized body pains (15.85%). Fiaz and coworkers in 2018, reported that muscular pain prevalence among traffic police wardens was 65.7% with highest prevalence in leg pain (38.8%) whereas, upper back pain as lowest (94.5%).[27] In a study done by Gu and colleagues in 2011, 18.2% of the white traffic police personnel developed cancer between1976 and 2006. Authors mentioned that police officers were at increased risk of Hodgkin's lymphoma overall and of brain cancer after 30 years of service.[28]

Traffic Police officers work stress reactions are usually categorized as physiological, emotional and behavioral reactions. Overall, violent and unpredictable incidents are commonly considered to be one of the leading causes of both psychological and physical stress among traffic police officers.[29,30] This survey study documented that the actual occurrence of stress was 30%, exhibiting signs and symptoms of irritability, anger outbursts, lack of concentration, inferiority complex, nervousness, feeling of loneliness and arguments with friends. In contrast with the present study, it was found that one of the researches conducted in Islamabad, the stress which the traffic police wardens' face enhances the performance levels which might be due to better structured working environment of the organization.[31] Regarding stress & depression level in traffic constables, following social problems among traffic wardens are found in current study; Not able to give family time(36.719%), not able to attend social event(35.938%), lack of independence (42.448%), no leaves (47.917%), no off on public holidays (51.302%), no cooperation from public(53.646%), offensive behavior of people on road(52.083%). These problems are similar with the problems found in another study on traffic constables.[32,33] A study published in 2008 has shown that majority of the traffic constables has perception of low quality of life in a survey.[34] There is dearth of published studies on the frequency of road traffic accidents and use of PPEs by these traffic constables. The results of this study show a high risk of road traffic accidents in Pakistan and limited use of personal protective equipment (PPE). This is recommended to conduct scientific studies to actually estimate the occupational health hazards attached with this profession.

CONCLUSION

The traffic constables in Punjab suffer from large number of physical, mental and social health issues. Their perception about their occupational health hazards is low and needs improvement through imparting health education about risks involved and promoting use of personal protective equipment

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