

Occupational Risk amongst the Police Personnel in a State of India: Vulnerabilities and Challenges

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Abstract

Police personnel had to perform overtime and shift work, suffer from disrupted sleep patterns, stress and may have high rates of tobacco and alcohol consumption than the general population forced to live physically inactive lifestyle, have irregular diet while on duty raising serious risk to their health. A study was conducted in Gaziabad District of Uttar Pradesh among to assess the lifestyle pattern with respect to dietary habit, physical activity and their knowledge, attitude and practices regarding non communicable diseases amongst the randomly selected 100 police personnel of Uttar Pradesh Provincial Armed Constabulary. Study found prevalence of high rates of hypertension (34.7%) and Diabetes (15.8%) were found among them. It was found that the daily vegetable, fruits intake in the personnel was less than five servings was seen among 74.3%. According to the analysis 71.9% of the police personnel were not doing the recommended 150 minutes of physical exercise in a week. According to the analysis 68.5% were either over weight/obese. The unfavorable trends for most major risk factors pose an enormous challenge and call for additional and timely action and policies, especially those of a legislative and regulatory nature and those providing cost-effective chronic care for individuals affected by NCDs.

Recommendations: Orientation during induction training of police personnel regarding reduction in alcohol use, increase in fruit servings along with other lifestyle modification measures may help in prevention and control of hypertension and other NCDs. Policemen also require periodic counseling and medical examination to remain healthy.

Government to budget for private gymnasium memberships for officers and constables or build fitness stations within an area of the police department. The Police

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Departments may evolve wellness programme offer incentives, such as additional vacation days, for officers who pass a rigorous wellness test and may also to link fitness for next promotion.

There is a need for nationwide multi-centric studies to be conducted on the prevalence of diabetes and its complications amongst the police personnel.

Keywords: CHD; KAP; NCD; NHM; NFHS.

Introduction

The Non-communicable diseases (NCDs) are emerging as the major cause of death and disability worldwide. Having risk factors such as tobacco use, high serum cholesterol, inadequate intake of fruits and vegetables, excess weight, physical inactivity, unhealthy diet and the harmful use of alcohol and some medical conditions such as hypertension and diabetes increases the risk of development of NCDs [1,2,3]. Risk operates in continuum with adverse events in persons with modest elevation of many risk factors, having a multiplicative effect [3]. NCDs, especially

cardiovascular disease, diabetes mellitus, and stroke have emerged as a major public-health problem in India [4].

The police personnel provide continuous service and have to serve round the clock. The increasing rate and complexity of crime particularly of an organized nature and violence, agitations, violent demonstrations, variety of political activities, enforcement of economic and social legislations, etc. have further added new dimensions to the responsibilities of police personnel.

Given the fact that policemen lead a physically inactive life, have irregular diet and limited choice of food while on duty, take overtime and shift work, suffer from disrupted sleep patterns, stress and have high rates of tobacco and alcohol consumption than the general population. Police officers have an even higher prevalence of overweight and obesity and other cardiovascular risk factors. Police officers face many stressors like chronic exposure to critical incident stressors as well as routine occupational and organizational stressors, such as high responsibility, contact with criminals, heavy work load, irregular duty hours and others that may adversely affect sleep quality and health [5,6].

Police officers are engaged in physical challenges on a regular basis. For example, they chase fleeing suspects; they climb over fences and onto roof tops; they subdue resisting arrestees; and they lift heavy objects such as recovered stolen property. These often daily job requirements require strength and endurance that is obtained by a combination of aerobic and anaerobic exercises. Adding to this physical challenge is the fact that officers must carry bulky items of additional weight on a pistol belt: handgun, baton, and handcuffs.

Occupational stress is a major concern among police officers. Police work is one of the most stressful occupations in the world due to their enormous stresses, uncertainty in work, lack of support from the superiors etc. They are suffering from different types of physical and mental disorders. Police officers often attribute their above average cardiovascular disease risk due to improper scheduling of shift, job-related stress, and poor dietary habits while working. They have been found to have an increased prevalence of CVD risk factors and type 2 diabetes than any other occupational group and amongst the general population in many countries [7-14].

In India, epidemiological studies have been done extensively for prevalence of diabetes and other non

communicable diseases like hypertension among the armed forces [7]. However, there is dearth of epidemiological data on the Lifestyle pattern among police and armed personnel. Fitness/wellness of police officers has been the focus of not many studies. A study has found that police officers suffer from different types of psychological stressors. Lack of force, killing someone in the line duty, shooting incident and shift work were most stressful stressors of the police officers. They remain exposed to traumatic stressors, including physical injury, witnessing death or injuries to other officers and civilians in duty hours. The impact of this high rate of exposure on health has long been a significant public health concern [15]. Another study has reported that police officers often are overly fatigued because of shift work, insufficient sleep and long and erratic work hours. Long work hours and shift work severely stresses on the health and performance of police officers. These factors likely contribute to the elevated levels of morbidity and mortality, lack of physical activity and family disharmony observed among police [16].

It is found that only few studies among police personnel have been carried out in India. Therefore, it is important to study the relationships amongst occupational stress, obesity, and dietary habits. The present study was conducted to assess the lifestyle pattern with respect to dietary habit, physical activity and their knowledge, attitude and practices regarding non communicable diseases amongst the police personnel of Uttar Pradesh Provincial Armed Constabulary working with the 41st Battalion under the jurisdiction of the Director General of Police, Uttar Pradesh.

Material and Methods

The present research was a descriptive study conducted amongst randomly selected sample of 100 personnel aged between 21 and 60 years age from 41st battalion of the Uttar Pradesh Provincial Armed Constabulary in the district Ghaziabad during March-April 2016. The data for this study was collected on voluntary basis using a pre-tested Structured Questionnaire. The Researcher was present to explain how to complete the questionnaire. Fruit and vegetable intake was measured using the standard serving size according to the NIN guidelines. Physical measurement of the respondents was done using scientific instruments as per the metric scale. Data was analyzed with the SPSS 23.0 and findings generated as per objectives.

Operational Definitions

The term “**life style related disease**” is sometimes used to emphasize the contribution of behaviour towards development of chronic diseases. In fact these diseases are heavily influenced by environmental conditions and are not the result of individual choices alone. The most common causes for non-communicable diseases (NCD) include tobacco use (smoking), alcohol abuse, poor diet (high consumption of sugar, salt, saturated fats, and trans fatty acids) and physical inactivity.

Serving Size

In this study a serving size is a standardized way of measuring food based on nutritional needs and can be very different from the portion size or amount of food served. A standard serving size is taken as 80g. According to WHO Guidelines a person must have 400 g or at least 5 servings of fruits and vegetables in a day.

Body Mass Index

BMI is a number calculated by dividing a person’s weight in kilograms by his or her height in meters squared. BMI is used in determining obesity. As per the guidelines issued by the Ministry of Health & Family Welfare and the Indian Council of Medical Research released (in 2012) a BMI over 23 kg/m² is considered overweight.

Physical Activity

In this study the term “physical activity” includes exercise as well as other activities which involve bodily movement and are done as part of playing, working, active transportation, house chores and recreational activities. The Recommended levels of physical activity (WHO, 2015) for adults aged 18 - 64 years is at least 150 minutes (2 hours and 30 minutes) a week of moderate-intensity, or 75 minutes (1 hour and 15 minutes) a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic activity.

Limitations of the Study

Ideally this study would have surveyed more officers in more police departments in India and globally. However, *time, resources* and *want of permissions* limited to the less sample size. There was a *recall bias* too as the participants were required to recollect their dietary intake and physical activity routine. In spite of encouraging the participants to

give unbiased answers some kind of *information bias* also existed as the participants were hesitant in giving an account of their physical activity, number of breaks which they took etc. It took a lot of time and energy to convince them that this is only an academic activity and does not bear any effect on their working and to their organization.

Findings

Disease Profile

In our study, majority of the respondents were found to be in the age group of 40-45 years and the mean age was 40.5 years. Only 16.8% of respondents were not suffering from any form of chronic illness, the rest of 83.2% were suffering from some or the other form of illness, the most common being Hypertension (prevalent amongst 34.7% of the respondents) followed by Diabetes (15.8%) and other chronic illnesses (32.7%).

Knowledge

Our analysis 78.2% of the respondents had knowledge that taking meals at unscheduled times causes Obesity. Further, 65.3% of the personnel knew that consumption of fast foods like burgers, pizzas etc leads to obesity and 66.3% believed that there is an association between drinking aerated drinks like Coca-Cola and Pepsi leading to obesity. While, 28.7% of the respondents opined that fast food consumption increases in people who do shift duty.

Nutritional Profile

More than 80% were missing meals as against just nineteen percent who said they never missed a meal. On further analysis, it was found that nearly 33.7% of the respondents were missing their meals three times in a week, and 23.9% of the respondents were missing their meals five or more times as against just 19.7% who claimed to have never missed a meal. Analysing reasons, we found that nearly 92.1 percent of the respondents replied that their work timing was responsible for their altered meal timings.

According to the analysis 25.7% said they were taking more than five servings of fruits and vegetables on a daily basis while. 41.6% of the respondents were taking less than five serving of vegetables and fruits. According to the analysis 65.3% of the respondents said they were having two servings of fruit in a day while 17.8% said they were taking more than two servings. 16.8% of the respondents were taking only a single serving of fruit.

According to the analysis 52.5% of the respondents said they were having two servings of Dal (Pulses) in a day, while 19.8% said they were taking more than two servings. 27.7% of the respondents were taking only a single serving of Pulses. According to the Analysis 25.7% of the respondents said they were having five or more servings of fruits and vegetables in a day, while 74.3% said they were taking less than servings five servings of fruits and vegetables on a typical day.

Physical Activity

According to the analysis, most preferred activity among 77.2% during breaks was enjoying snacks of fast food items, followed by 37.6% to watch TV or read the newspaper. The least preferred was carrying out any form of physical activity for leisure, being done only by 8.9% of them.

However, on a typical day, almost 88.1% of the respondents take out time to perform some form of physical activity while only 11.9% did not perform any physical activity. Further analysis shows that most popular form of exercise was found to be Yoga (69.1 %) amongst the Provincial Armed Constabulary personnel followed by going for a walk (59.6%), Cycling (21.3%), heavy weightlifting (16%). Further, 60% of the respondents said that they did less than 150 minutes of physical activity in a day, 28.1 % said that they did more than 150 minutes while 11.9% said they never engaged in any form of physical activity.

According to the analysis 72.1% of the respondents were exercising daily. While only 27.9% said they were unable to exercise daily. It was found that higher percentage (48%) of people weighing less than 60kg were exercising for more than 150 minutes in a week while less (23%) percentage of people weighing more than 60kg were exercising for more than 150 minutes in a week.

Obesity

According to the Analysis only 31.5% of the respondents were found to be in the healthy range, 50.7% of the respondents were in the overweight category while 14.9% were in the obese category and 3% were in the severely obese category. According to the it was seen that the maximum number of overweight and obese individuals were in the age group of 41-50 years (31)% followed by 21% in the age group of 31 to 40 years. The highest number of healthy individuals were in the age group of 21-30 (14%) followed by 31-40 (10%). According to the

analysis the mean BMI was found to be 26.67 which lies in the obese zone according to the MOHFW and ICMR guidelines as well as the international guidelines.

Discussion

There is no denying the fact that these uniformed personnel are the ones exposed to maximum work related risks that are not common to other professionals. But unfortunately only limited studies have been carried out on the health aspects of police officers in India.

According to the analysis, very high percentage (78.2%) of the respondents had knowledge that taking meals at unscheduled times causes many health problems. 65.3% of the personnel knew that consumption of fast foods like burgers, pizzas etc leads to obesity while 24.8% believed that consumption of such items does not lead to obesity which is quite disturbing. Only 28.7% of the respondents felt that fast food consumption increases in people who do shift duty. The respondents lacked the necessary knowledge. Our study found that 66.3% believed that there is an association between taking aerated drinks like Coca-Cola and Pepsi leading to obesity. This is positive sign for health and wellness among police officials. However, they could be further educated on eating healthy meals, as well as the nutritional value of various food items

Due to their occupational constraints police personnel could not follow fix schedule for having their lunch or dinner. Also, most of them were not provided with canteen facilities in major police stations neither were there separate rooms for lunch or dinner. Additionally, due to their frequent field duties many police personnel had to eat their food mostly in the vehicle in which they travel. Further 92% of the respondents believed that their work timing was responsible for their altered meal timings. These findings are similar to results published by Saha A. et al who reported it as 85.8% [17].

According to the analysis nearly 33.7% of the respondents were missing their meals three times in a week, and 23.9% of the respondents were missing their meals five or more times as against just 19.7% who claimed to have never missed a meal. This is much higher than a study conducted by the Illinois police [18] where just 18% of the police personnel were missing their meals three times in a week, and 13.9% of the respondents were missing their meals five or more times as against 79.7% who claimed to

have never missed a meal. In our study 81% were missing meals. This was also similar to a study done in Carmen Island police force [7] which found that 88 % of the traffic police were missing meals as a consequence of shift duty timings.

A report published by the Bureau of Police Research and Development (BRPD) and Administrative Staff College of India (ASCI) has found that 90% of police officers work for more than eight hours a day and 73% do not get a weekly off even once a month. They are often called into work on their rare holidays for emergency work. This is responsible for altered continuous fatigue and tendency to have irregular meal timings [2].

According to our analysis, 25.7% said they were taking more than five servings of fruits and vegetables on a daily basis while 41.6% of the respondents were taking less than five serving of vegetables and fruits. This is similar to Saha A. et al [17] who reported it as 28.8% and 42.7%. Further, 65.3% of the respondents said they were having two servings of fruit in a day, while 17.8% said they were taking more than two servings. 16.8% of the respondents were taking only a single serving of fruit. Moreover, 52.5% of the respondents said they were having two servings of Pulses in a day, while 19.8% said they were taking more than two servings. 27.7% of the respondents were taking only a single serving of Pulses. The WHO 2015 Guidelines state that a person must have 400 g or at least 5 servings of fruits and vegetables in a day for the diet to be considered adequate. However, a study conducted by the Chicago police found that 88% of the police personnel were taking the recommended levels of fruits in a day. Thus, in our study the intake of fruits and vegetables is falling short of the required amount as per the WHO guidelines [2].

The most preferred activity amongst the police personnel during breaks was found to be snacking on fast food items (77.2%). The least preferred was carrying out any form of physical activity (8.9%). This was also similar to a study by Adruend et al [20] which gives snacking on Samosa and Pakoras as the most preferred activity by 69% of the police personnel causing obesity and other health problems among them. In our study 55% police personnel were addicted to nicotine alcohol abuse. Since it was also found that 12.2% of the personnel preferred to smoke during their breaks.

Some studies found that police officers lead a physically inactive life, have irregular and hotel made diet and take spicy and limited choice of food while on duty, undertake overtime and shift work, suffer from sleeplessness, high rate of alcohol and tobacco

consumption and stresses than the general people. They have been found to have an increased prevalence of cardiovascular risk factors than the general population [21]. Several studies have demonstrated that the lifestyle and working environment of the police is under constant stress with a high rate of binge eating, smoking and alcohol addiction [22,23].

This study found that 71.9% of the personnel were not exercising the recommended time on a weekly basis. The findings are not encouraging as only 31.5% of the respondents were found to be in the healthy range, 50.7% of the respondents were in the overweight category while 14.9% were in the obese category and 3% were in the severely obese category. This is much higher than study done by Abari John [24] according to which nearly 50% of police personnel of Greece were in the healthy range.

It was further seen in our study that the maximum number of overweight and obese individuals were in the age group of 41-50 years (31%) followed by 21% in the age group of 31 to 40 years. The highest number of healthy individuals were in the age group of 21-30 (14 %) followed by 31-40 (10%). This is comparative to study done by Saha et al [17] which found that the maximum number of unhealthy individuals (67%) were in the range of 31-50 years. This age group contained maximum number of personnel in the overweight/ Obese category, which is a major risk factor for many NCD's.

According to our analysis 60% of the respondents said that they did less than 150 minutes of physical activity in a day, 28.1% said that they did more than 150 minutes while 11.9% said they never engaged in any form of physical activity. It was also found that nearly 48% of people weighing less than 60kg were exercising for more than an 150 minutes in a day while only 23% people weighing more than 60kg were exercising for more than 150 minutes in a day. The extent of physical activity was much lower than the study done by the London Metropolitan Police [26] which stated that only 30% of the respondents were not doing the recommended levels of exercise. A study conducted in US found that officers' average fitness levels were below normal in the areas of aerobic fitness, body fat, and abdominal strength. Fitness levels were average in upper body strength and low back flexibility. Overall fitness of law enforcement officers in most areas of the US was less than that of 50 percent of Americans during this time period [8].

Several studies have demonstrated that the lifestyle and working environment of the police is under

constant stress with a high rate of smoking and alcohol addiction [11]. A study has reported that police officers often are overly fatigued because of shift work, insufficient sleep and long and erratic work hours which likely contribute to the elevated levels of morbidity and mortality, lack of physical activity and family disharmony observed among police [16].

Increased work stresses lead to heart attacks, headaches, and high blood pressure in police officers. Some study showed that police officers were suffering from abdominal pain, lack of appetite, and backache [18,25,27]. It has also been reported that some suffer increased rates of cardiovascular and metabolic disorders, divorce rates and suicide than the general population [25,26]. Some studies have also shown that the police officers are also exposed to chronic non-traumatic stress arising from the demands of their work environment. For example, police officers face pressures from supervisors, court, media, and the public that can increase the stress-related problems such as binge eating and insomnia [28].

Another study has found that police officers suffer from different types of psychological stressors. Lack of force, killing someone in the line duty, shooting incident and shift work were most stressful stressors of the police officers. They remain exposed to traumatic stressors, including physical injury, witnessing death or injuries to other officers and civilians in duty hours. The impact of this high rate of exposure on health has long been a significant public health concern [15].

In our study, diabetes was prevalent amongst 15.8% of the respondents which was found to be much higher than the current prevalence of the disease. The most likely cause for the high prevalence of the disease in our study population may be consumption of fast foods, irregular dietary habits, obesity, stressful environment and lack of physical exercise. Policemen require periodic medical examination and counseling to remain healthy.

Elevated blood pressure is a major risk factor for cardiovascular morbidity and mortality. The strenuous duties of police personnel can interact with their personal risk profiles, including elevated blood pressure, to precipitate acute cardiovascular events. Notably, the majority of incident of cardiovascular disease events occur among those who are initially pre hypertensive or only mildly hypertensive and whose average pre morbid blood pressures are in the range in which many physicians would hesitate to prescribe medications (140-146/88-92 [29]. The prevalence of hypertension was found to be 34.7% in police personnel in this study.

This was comparatively more in studies done by Ramkrishan J et al [30] (30.5%), Sohi R et al [24] (9.97%) and Jahanvi G et al [31] (33%). The overall prevalence for hypertension in India is 29.8%.

A study conducted amongst Maharashtra Police in the age groups of 40-50 and found most of the policemen were complaining of musculoskeletal problems (62.7%), gastrointestinal problem (51.8%), and dental problems (41%). Prevalence of hypertension was 42.4%. 48% of policemen were pre obese while 20% obese in this study [25].

In US, a cohort study done on police force showed that this occupational group has high risk for development of non communicable diseases and cardiovascular disease (CVD) events at an earlier age and that they die much earlier compared to other groups [32]. Another study showed that heart rate of the police officers varies after getting some unavoidable or crucial news. Cardiovascular and haematological stresses are very acute in officers engaged in highway patrolling [33].

Conclusions

The police force faces pressures of many kinds during their jobs. Prevalence of high rates of hypertension (34.7%) and Diabetes (15.8%) were found among them. It was found that the daily vegetable, fruits intake in the personnel was less than five servings was seen among 74.3%. According to the analysis 71.9% of the police personnel were not doing the recommended 150 minutes of physical exercise in a week. According to the analysis 68.5% were either over weight/obese. Such findings will have adverse effect on their performance and also cost high medical expenditure on government exchequer.

The unfavorable trends for most major risk factors pose an enormous challenge and call for additional and timely action and policies, especially those of a legislative and regulatory nature and those providing cost-effective chronic care for individuals affected by NCDs.

Recommendations

Orientation during induction training of police personnel regarding reduction in alcohol use, increase in fruit servings along with other lifestyle modification measures may help in prevention and control of hypertension and other NCDS. Policemen also require periodic counseling and medical examination to remain healthy.

Government to budget for private gymnasium memberships for officers and constables or build fitness stations within an area of the police department. The Police Departments may evolve wellness programme offer incentives, such as additional vacation days, for officers who pass a rigorous wellness test and may also to link fitness for next promotion.

There is a need for nationwide multi-centric studies to be conducted on the prevalence of diabetes and its complications amongst the police personnel.

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