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## Prevalence of Non-communicable Diseases among Police Personnel of Bangladesh

\*Khan MK,<sup>1</sup> Hoque ME,<sup>2</sup> Paul D,<sup>3</sup> Ferdous J,<sup>4</sup> Haque MA<sup>5</sup>

Globally epidemiological transitions of diseases has been taking place where non-communicable diseases (NCDs) causing more deaths and disability than all other diseases combined. Similarly NCDs attributes to the greater mortality and morbidity in Bangladesh too. Higher prevalence of risk factors and lower preventive factors puts Bangladesh in a critical situation regarding NCD epidemic. The physical health, psychological well-being, safety and efficiency at work are important factors for any police agency to consider. Fatigued or tired police officers are a danger to themselves as well as the public they serve. In order to provide better service to the people, governments will need to place a greater emphasis on the occupational health of the police. This study was aimed at measuring the prevalence of NCDs among police personnel of Bangladesh. The descriptive cross sectional study was carried out among 440 members of Bangladesh Police during the period of March' 2015 to November'2015. Seven Districts were randomly selected from seven police ranges in seven administrative Divisions of Bangladesh. From each selected district, Office of the Superintendent of Police (SP), Police Line, Kotwali Thana (Sadar Police Station), District Traffic Office and Police camps were included in the study. Police personnel of different ranks were interviewed randomly from the selected SP offices, police lines, police stations and police camps. A semi-structured questionnaire was used to conduct face to face interview of police personnel regarding presence of NCDs among them. Among the respondents 414 (94.1%) were male and 26 (5.9%) were female. Most of the respondents (420; 95.5%) were subordinate officers and superior officers were only 20 (4.5%). Mean age of the respondents was 32.2 years with a standard deviation (SD) of 9.6 years. More than three fourth of the respondents (343, 78.0%) were unmarried and 97 (22.0%) were married. Regarding monthly income, majority of the respondents (311; 70.7%) had monthly income between BDT 20,000 to 30,000. Mean monthly income was BDT 16,770.9 with a SD of BDT 6,570. In terms of education, 29 (6.6%) respondents were less than SSC, about one fifth (86; 19.5%) passed SSC, about half (212, 48.2%) passed HSC and more than one fourth (113; 25.7%) of the respondents had graduation and above. Prevalence of chronic diseases in the respondents was 13.0%. It was revealed that 57 (13.0%) of all the respondents suffered from chronic diseases while the rest 383 (87.1%) did not. Among the chronic diseases Hypertension was present on the top of the list. Next higher prevalence was observed in case of Diabetes mellitus. Other diseases were PUD, Asthma, IHD, Non-specific chest pain, stroke, hormonal problem and skin disease. A significant number of police personnel (13.0%) in Bangladesh are currently suffering from NCDs and this should be addressed.

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**Key words:** Non-communicable diseases (NCDs), police personnel, Bangladesh

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## Introduction

Globally epidemiological transitions of diseases has been taking place where non-communicable diseases (NCDs) causing more deaths and disability than all other diseases combined. The transition of diseases not only affected the affluent countries it also affects low and middle income countries. Of the 57 million global deaths in 2008, 63 percent were due to NCDs and most importantly 80 percent of NCD deaths occurring in low and middle income countries.<sup>1</sup> In South Asia the burden of disease is shifting fast as well. In 2010, NCDs accounted for 57 percent which was up from 37.9 percent in 1990, and a larger proportion of communicable diseases, maternal and child health illnesses, and nutrition causes combined, which accounted for 43 percent.<sup>2</sup>

The similar situation also exists in Bangladesh. According to the WHO report, nearly 600,000 people die annually due to NCDs in Bangladesh, and over 60 percent of them die before 70 years of age.<sup>3</sup> Demographic and health surveillance of ICDDR, B in Matlab found NCD mortality increased from 8 percent in 1986 to 68 percent in 2006. On the disease burden World Bank reports NCDs account for 61 percent.<sup>3</sup> The impact of NCD related mortality and morbidity is expected to be greater over the next several decades due to ageing population.<sup>3</sup> The major causes of mortality from NCDs are cardiovascular diseases, cancers, respiratory diseases, diabetes and injuries.<sup>2</sup>

Fortunately four common, modifiable, lifestyle or behavioural risk factors are largely responsible for the ill health, suffering and premature deaths associated with NCDs: unhealthy diet, physical inactivity, tobacco use and harmful use of alcohol. Bangladesh NCD risk factor survey 2010 reports there is hardly any adult without a risk factor as 98.7 percent have at least one risk factor. Tobacco

use is rather common in Bangladesh as the survey reports prevalence of smoking among 15 years and older were 23 percent. Smokeless tobacco using is more common (27.2 percent). Among all adults 45 percent were exposed to second hand smoking. Unhealthy diet is another key risk factor although fruit and vegetables are included in people's diet. Sedentary lifestyle in urban population is a major risk factor. Prevalence of low level of physical activity is high (27 percent) and 18 percent of adult population found to be overweight and this is higher in women (22 percent).<sup>4</sup>

Bangladesh Police is committed to enforce law, maintain social order, reduce fear of crime, enhance public safety and ensure internal security with the active support of community.<sup>5</sup> Police occupy an important position within the community as both enforcers of the law and as role models for appropriate behavior. Researches outside the country have shown that they consume tobacco at rates higher than the general population.<sup>6-8</sup> They frequently work under high stress. Job of a policeman belongs to the group of jobs with highest factor of psychological load. As like as general people, risk factors for NCDs are also present in police personnel of Bangladesh. For maintaining their own health and efficiency police personnel should be aware of risks factors for NCDs.

The physical health, psychological well-being, safety and efficiency at work are important factors for any police agency to consider. Fatigued or tired police officers are a danger to themselves as well as the public they serve. In order to provide better service to the people, governments will need to place a greater emphasis on the occupational health of the police and as a part of this, magnitude of NCDs among Bangladesh police needs to be explored. The study was conducted to find

out the prevalence of NCDs among Bangladesh police. The study results will help managers and policy makers to formulate successful strategies and policies for prevention of NCDs in police personnel.

### Methods

The descriptive cross sectional study was carried out among 440 members of Bangladesh Police during the period of March 2015 to November 2015. Seven Districts were randomly selected from seven police ranges in seven administrative Divisions of Bangladesh. From each selected district, Office of the Superintendent of Police (SP), Police Line, Kotwali Thana (Sadar Police Station), District Traffic Office and Police camps were included in the study. Police personnel of different ranks were interviewed randomly from the selected SP offices, police lines, police stations and police camps. A semi-structured questionnaire was used to conduct face to face interview of police personnel regarding presence of non-communicable chronic diseases. Data were collected after getting permission from Police Headquarters. Informed verbal consent was taken from every participant prior to data collection. Ethical clearance was obtained from Ethical Committee of Sylhet M A G Osmani Medical College, Bangladesh. SPSS 20.0 version was used to analyze data.

### Results

Police personnel of different ranks from seven police ranges of Bangladesh were invited to participate in the study. During the study period 440 police personnel were interviewed proportionately from each police range who represent the entire 1,52,000 members of Bangladesh Police.

#### *Socio-demographic characteristics*

Regarding the socio-demographic characteristics it revealed that almost half of the respondents (218, 49.5%) were below 29

years old. More than one fourth (123, 28.0%) were in the age group of 30 to 39 years, 59 (13.4%) were in 40 to 49 years. Less than one tenth (40, 9.1%) of the respondents were above 49 years. Mean age of the respondents was 32.2 years with a standard deviation (SD) of 9.6 years. Most of the police personnel were male (414, 94.1%) and 26 (5.9%) were female. More than three fourth of the respondents (343, 78.0%) were unmarried and 97 (22.0%) were married. Regarding monthly income, majority of the respondents (311, 70.7%) had monthly income between BDT 20,000 to 30,000 and 72 (16.4%) had between BDT 10,001 to 20,000. Less than one tenth (40, 9.1%) of the respondents had monthly income below BDT 10,001 and only 17 (3.8%) respondents had income more than BDT 30,000 in a month. Mean monthly income was BDT 16,770.9 with a SD of BDT 6,570 (Table I).

Table I: Socio-demographic characteristics of the respondents (n=440)

Variable	Category	Frequency	Percentage
Age in years	Below 29	218	49.5
	30 – 39	123	28.0
	40 – 49	59	13.4
	Above 50	40	9.1
Sex	Male	414	94.1
	Female	26	5.9
Marital Status	Married	97	22.0
	Unmarried	343	78.0
Monthly Income (BDT)	Below 10,001	40	9.1
	10,001 – 20,000	311	70.7
	20,001 – 30,000	72	16.4
	Above 30,000	17	3.8

In terms of education, 29 (6.6%) respondents were less than SSC, about one fifth (86, 19.5%) passed SSC, about half (212, 48.2%) passed HSC and more than one fourth (113, 25.7%) of the respondents had graduation and above (Figure 1).

#### *Chronic diseases in the respondents*

Prevalence of chronic diseases in the respondents was 13.0%. It was revealed that

57 (13.0%) of all the respondents suffered from chronic diseases while the rest 383 (87.1%) did not (Figure 2). Among the chronic diseases Hypertension was present on the top of the list. Next higher prevalence was observed in case of Diabetes mellitus. Other diseases were PUD, Asthma, IHD, Non-specific chest pain, stroke, hormonal problem and skin disease (Table II).

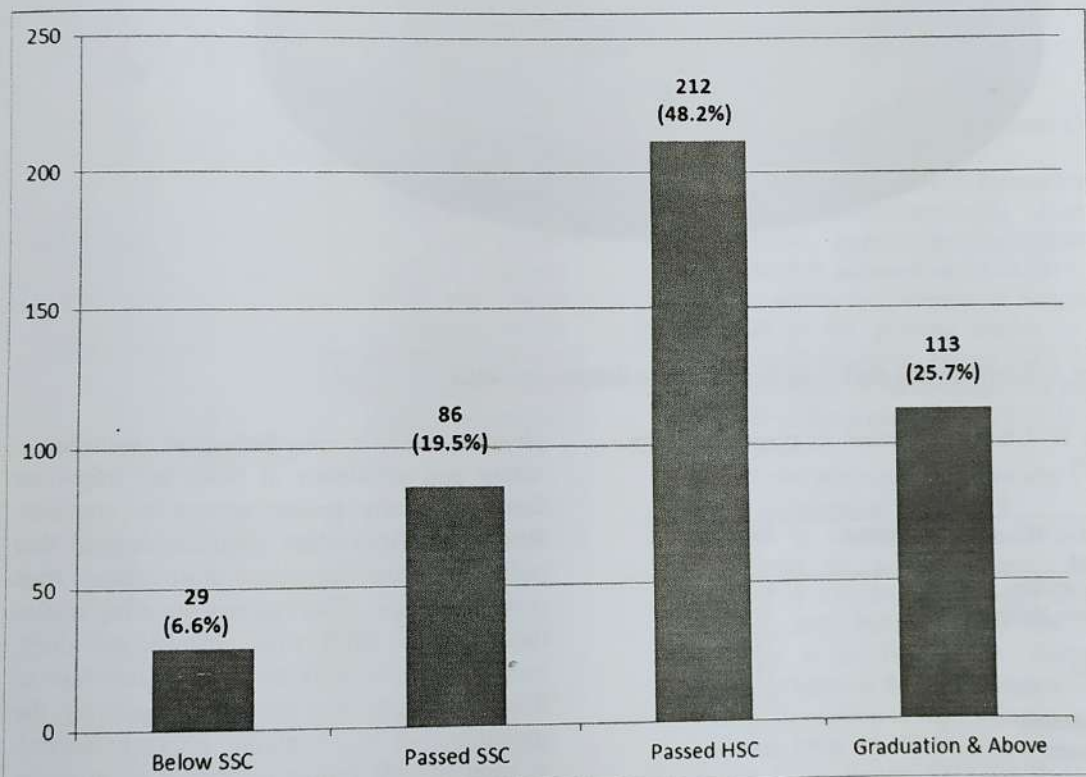


Figure 1. Educational status of the respondents (n=440)



Figure 2. Respondents suffering from chronic disease (n=440)

Table II: Chronic diseases in respondents by (n=57)

Name of the disease	Frequency	Percentage
Hypertension	27	47.4
Diabetes Mellitus	11	19.3
PUD	8	14.0
Asthma	8	14.0
IHD	3	5.3
Non-specific chest pain	2	3.5
Stroke	1	1.8
Hormonal problem	1	1.8
Skin disease	1	1.8

\*Multiple responses

### Discussion

This study is probably the first study with properly designed methodology among Bangladesh Police regarding NCDs. The

physical health, psychological well-being, safety and efficiency at work are important factors for any police agency to consider. Researches from other countries suggest that police personnel consumed more tobacco than general people. Often excess smoking makes them fatigue. Shift work, insufficient sleep, long and erratic work hours also contribute to this. This study was aimed at measuring the prevalence of NCDs among police personnel. A total of 440 Police personnel of different ranks from seven police ranges of Bangladesh participated in the study.

### Socio-demographic characteristics

The study revealed that mean age of the respondents was 32.2 years with a standard deviation (SD) of 9.6 years. Most of the police personnel (414, 94.1%) were male and 26 (5.9%) were female. This figure did not correspond with the national sex ratio of



Bangladesh (0.95male/female)<sup>9</sup>. This may be due to lack of interest from the part of both government and females of our country to be recruited in police agency. More than three fourth of the respondents (343, 78.0%) were unmarried and 97 (22.0%) were married. In terms of education, nearly three fourth (327, 74.3%) of the respondent were HSC and below and more than one fourth (113, 25.7%) of the respondents had graduation degree and above. Majority of the respondents (311, 70.7%) had monthly income between BDT 20,000 to 30,000 and only 17 (3.8%) respondents had income more than BDT 30,000 in a month. Mean monthly income was BDT 16,770.9 with a SD of BDT 6,570.

#### *Chronic diseases in the respondents*

This study results showed 13.0% of the police personnel were suffering from chronic diseases. Among the chronic diseases Hypertension was present on the top of the list. Next higher prevalence was observed in case of Diabetes mellitus. Jahnavi G. et al. (2012) also found hypertension and diabetes as common health problems faced by the police personnel.<sup>10</sup> In this study other diseases were PUD, Asthma, IHD, Non-specific chest pain, stroke, hormonal problem and skin disease.

Health system which has been focusing communicable diseases so far will have to face increasing need for NCD related services. It will be a great challenge for the health system to provide services for the NCDs in the upcoming years. Health promotion and prevention of NCDs is one of the important action agenda in the strategic plan for surveillance and prevention of NCDs in Bangladesh<sup>4</sup>. As the diseases are mostly related with lifestyle, enabling people to adopt the healthy behaviour is the most important way to prevent the NCDs. There is clear need to shift the focus of health system for lifestyle modification of people as well as police personnel to avert the mortality and morbidity due to NCDs.

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