

Hypertension Among Elderly Group of Urban Population

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Abstract

Background: Management of hypertension of elderly population is more challenging and complicated. Moreover, hypertension can predispose to many other health issues and disablements which can make this delicate and vulnerable period of life even more strenuous. This study tried to evaluate the prevalence of hypertension among elderly from an urban setting. **Materials and Methods:** This is a cross-sectional type of study conducted during the period of January to December, 2019 among 105 elderly people (≥ 60 years) in a selected area of Mohammadpur Thana of Dhaka district. Data regarding their sociodemographic background, modifiable risk factors for hypertension and hypertensive profile have been assessed and recorded. Ethical approval from the designated authority and informed written consent from the respondents have been collected prior to the commencement of the data collection. **Results:** This cross-sectional study observed 105 respondents aged over 60 years among which 44 (41.90%) respondents were male and 61 (58.1%) respondents were female. Educational status, occupational status, BMI and exercising were the key variables that were found to have a significant relationship with hypertensive status of the respondents ($p < 0.05$). **Conclusion:** With the increase of the educational attainment, not being occupied, being obese and overweight and not doing exercise regularly found to have higher prevalence of hypertension. To evaluate the role of these factors to cause hypertension further longitudinal studies are recommended on national level.

Keywords: Endoscopy guided biopsy, histopathology.

Introduction

Hypertension is a significant cause of morbidity and mortality linked with cardiovascular diseases, which often remains asymptomatic and due its chronic nature it mandates strict regulation of the blood pressure as well as insistent coherence to the medical interventions to prevent consequences associated with this condition (1). Hypertension associated mortality stated to be at 7.5 million annually, which accounts for 12.8% of the total deaths, which also attributes to 57 million disability adjusted life years (DALYS), which accounts for 3.7% of the total DALYS (2). Nearly 45% of global mortality due to heart disease and 51% of deaths due to stroke are prevalent among hypertensive patients (3). Prevalence of hypertension and its associated complications increase with age (4). Increase in life expectancy attributed by better health care provision is causing the elderly group of population to be very rapidly growing (5). As estimated by World Health Organization, amid of 2015 and 2050, world population aged over 60 years will increase by nearly two folds from 12% to 22% (6). Thus it can be anticipated that, high blood pressure and associated co-morbidities are also going to more prevalent among the aging population, which is going to pose a great healthcare challenge. Additionally, modernization and industrialization precipitated a lifestyle with lack of physical activity, unhealthful eating pattern, tobacco use, that raised the prevalence of non-communicable diseases among the elderlies (7). Aging associated hypertension is hypothesized to be attributed by arterial stiffness caused by structural and functional changes in the vessels (8). However, hypertension and its associated baneful consequences are preventable even in old age with the modification of lifestyle and through timely and adequate interventions (4). The condition often remains undetected even when it has advanced to an

aggressive stage (9). Thus, the routine evaluation of an elderly is critical for the early diagnosis, control of high blood pressure and providing with adequate treatment (10). In this regard the present study has evaluated the hypertensive status of elderlies and observed their contextual variables.

Materials and Methods

With a cross sectional study design this study has been carried out among elderlies aged 60 years or older living in a selected area of Mohammadpur Thana of Dhaka district from January to December 2019. Following availing ethical approval from the concerning authority, study respondents were selected through cluster sampling technique.

Assessment of hypertension: In this study, the blood pressure was defined as high, following the JNV VI classification¹¹ on evaluation of their medical records.

Data collection and analysis: Each participant was approached after taking their informed written consent. Face to face interview was conducted to collect data in a structured questionnaire. Data regarding the sociodemographic background, modifiable risk factors and hypertensive profile, have been assessed and recorded. Statistical analysis has been carried out with the use of IBM Software- Statistical package for Social Science (SPSS) version 25.

Results

As observed from this study, hypertension was prevalent among 51 respondents (48.57%) and 54 (51.53%) respondents were normotensive. Among the sociodemographic attributes, the age group of 70 years and above found to have 56.4% of the hypertensive respondents compared to 43.6% normotensive respondents and the age group of below 70 years had 43.9% of hypertensive respondents compared

to 56.1% of normotensive respondents ($p>0.05$). Male respondents found to be more affected by hypertension (52.3%) than female respondents (45.9%) compared to their normotensive counterparts ($p>0.05$). With the increase of educational level, the prevalence of hypertension found to be significantly increased among the respondents ($p<0.05$). Respondents not being occupied with a job (home-maker or retired) also tend to have hypertension significantly higher than the respondents who were occupied with jobs ($p<0.05$). With the increase of monthly family income, the prevalence of hypertension found to have raised though this association was not significant ($p>0.05$). Respondents from joint family and who had higher number of family members showed to have higher prevalence of hypertension ($p>0.05$). Elderlies living in concrete-built houses showed to have higher prevalence of hypertension than them who were living in semi-concrete houses ($p>0.05$) (Table I).

Respondents who were overweight tend to have higher prevalence of hypertension (42.4%) than the respondents who were with normal weight (32.3%) ($p<0.05$). Respondents who have the record of doing regular exercise showed to have lower prevalence of hypertension (20.0%) than the respondents who didn't used to do exercise on regular basis (57.5%) ($p<0.05$). In this study, among the smokers and nonsmokers the prevalence of hypertension was nearly similar though slightly less among smokers ($p>0.05$). (Table II).

Discussion

Maintaining a healthy lifestyle is a pre-requisite to prevent and control hypertension (12). Routine evaluation for high blood pressure can be proven as a mainstream method to prevent the cardiovascular consequences among elderlies (13). In this study, the prevalence of hypertension among the study participants

was 48.57% which corresponds with another study in our country where they found the prevalence of hypertension among the 60 years and above age group at 53% (14). According to the observation from this study, among the sociodemographic background, hypertension was associated with the educational status and occupational status of the respondents, where with the increase in the educational level and not being occupied with a job found to have higher prevalence of hypertension ($p<0.05$).

Among the modifiable risk factors, respondents who were overweight and obese and not exercising regularly found to have significantly higher proportion of hypertension ($p<0.05$). Shukuri et al. in their study also found that being overweight and obese is a risk factor of hypertension among elderlies (4). Additionally, research studies have repeatedly observed the beneficial impact of doing regular exercise to have control over the blood pressure (15,16). Physical activity has been known to reduce cardiovascular complications and mortality among elderlies (17).

Regular intake of anti-hypertensive medications is also of prior concern to manage hypertension among elderlies and also to reduce cardiovascular consequences among them (18). This study has observed that, all of the hypertensive respondents were taking anti-hypertensive medication among whom 13.7% gave history of irregular intake and they mainly faced financial issue to maintain the regularity of drug intake. Angiotensin receptor blocker/inhibitor were the most commonly taken drug (49.3%) for the management of hypertension according to this study. In the study of Kontsevaya et al. high cost was the reason for non-adherence to the prescribed anti-hypertensive medication for 21.7% of the respondents whereas, majority of the respondents in their study claimed of feeling well as the reason to not take the medicines regularly (19).

Table I: Sociodemographic Attributes of Hypertension Among Elderlies

		Hypertensive (n ₁ =51)	Normotensive (n ₂ = 54)	p value
Age (years)	60-69	29 (43.9%)	37 (56.1%)	0.217
	70 and above	22 (56.4%)	17 (43.6%)	
Gender	Male	23 (52.3%)	21 (47.7%)	0.519
	Female	28 (45.9%)	33 (54.1%)	
Educational status	Illiterate	13 (30.2%)	30 (69.8%)	0.004
	Primary	8 (57.1%)	6 (42.9%)	
	Secondary	8 (42.1%)	11 (57.9%)	
	Higher secondary Graduation and above	4 (80.0%) 18 (75.0%)	1 (20.0%) 6 (25.0%)	
Occupational status	Service holder	6 (75.0%)	2 (25.0%)	0.019
	Businessman	6 (54.5%)	5 (45.5%)	
	Day laborer	1 (8.3%)	11 (91.7%)	
	Home maker Retired	17 (44.7%) 21 (58.3%)	21 (55.3%) 15 (41.7%)	
Marital status	Have spouse	27 (43.5%)	35 (56.5%)	0.216
	Do not have spouse	24 (55.8%)	19 (44.2%)	
Monthly family income (taka)	8000-20000	10 (35.7%)	18 (64.3%)	0.241
	21000-50000	19 (48.7%)	20 (51.3%)	
	51000-80000	13 (52.0%)	12 (48.0%)	
	81000-100000	9 (69.2%)	4 (30.8%)	
Type of family	Joint	27 (50.0%)	27 (50.0%)	0.763
	Nuclear	24 (47.1%)	27 (52.9%)	
Number of family members	1-4	25 (45.5)	30 (54.5%)	0.545
	5-7	19 (48.7%)	20 (51.3%)	
	8-11	7 (63.6%)	4 (36.4%)	
Housing status	Concrete house	44 (52.4%)	40 (47.6%)	0.118
	Semi concrete house	7 (33.3%)	14 (66.7%)	

p value reached from Chi-square analysis (adjusted with Fisher's exact)

Table II: Modifiable risk factors and hypertension

		Hypertensive (n ₁ =51)	Non- hypertensive (n ₂ = 54)	p value
BMI	Underweight	0 (0.0%)	5 (100.0%)	0.000
	Normal	10 (32.3%)	21 (67.7%)	
	Overweight	14 (42.4%)	19 (57.6%)	
	Obese	27 (75.0%)	9 (25.0%)	
Regular exercise	Yes	5 (20.0%)	20 (80.0%)	0.001
	No	46 (57.5%)	34 (42.5%)	
History of smoking	Yes	27 (47.4%)	30 (52.6%)	0.788
	No	24 (50.0%)	24 (50.0%)	

p value reached from Chi-square analysis (adjusted with Fisher's exact)

Among the hypertensive group, duration of hypertension was between 1 to 10 years for 54.9% of the respondents and more than 10 years for 45.1% of the respondents. All of the hypertensive respondents gave history of taking anti-hypertensive medication. Among them, angiotensin receptor blocker/inhibitor were taken by 49.3%, beta blockers were taken by 29.9%, calcium channel blocker was taken by 14.9%, diuretics was taken by 3.0% and alpha blockers was taken by 3.05%. Regular drug intake was claimed by 86.3% of the respondents. Among the respondents who didn't used to intake medicines regularly, financial issue was the main issue among them (57.1%) (Table III).

care cost and challenges in personal, familial and national level. This study found educational status, occupational status, BMI and exercising to be significantly associated with hypertensive status of the respondents. With the increase of the educational attainment, not being occupied, being obese and overweight and not doing exercise regularly found to be related with higher prevalence of hypertension among the elderlies. Further in depth studies are suggested to understand the mechanism that, how these factors increase the hypertension among the old age population, thus health awareness and action planning can be incorporated from younger age to prevent the incidence of hypertension and its associated co-morbidities among the aging population.

Table III: Hypertensive history of the patient (n =51)

		Frequency	Percentage
Duration (years)	1-10	28	54.9%
	>10	23	45.1%
Type of drug	Angiotensin receptor blocker/inhibitor	33	49.3%
	Beta-blocker	20	29.9%
	Calcium-channel blocker	10	14.9%
	Diuretics	2	3.0%
	Alpha-blocker	2	3.05%
Regular intake of drug	Yes	44	86.3%
	No	7	13.7%
Cause of irregularity in drug intake	Don't think drug is necessary	1	14.3%
	Too expensive	1	14.3%
	Blood pressure is now normal	1	14.3%
	Lack of money	4	57.1%

Conclusion

Hypertension is an established risk factor for many health issues, prevention and control of which can reduce the associated disability adjusted life years. Ensuring a sound and healthy old age through proper management of high blood pressure can moderate the health

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