

The Impact of Socioeconomic Status on the Occurrence of Hypertension

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ABSTRACT

Introduction: Coronary and cardiovascular diseases are a leading cause of mortality worldwide, with hypertension or high blood pressure being a primary risk factor. Despite being a symptomless and incurable ailment, hypertension is often diagnosed in its severe stage with severe symptoms. Socioeconomic factors are considered to be one of the causes of hypertension, although various studies have yielded conflicting results about the exact relationship between socioeconomic status and hypertension. This study aimed to investigate the relationship between hypertension and socioeconomic status within our country.

Aim of the study: The aim of the study was to observe the effects of hypertension and socioeconomic status.

Methods: This was a cross-sectional observational study conducted in the Department of Cardiology, Sheikh Hasina Medical College, Habiganj, Bangladesh during the time period of June 2019 to May 2021 with 160 patients showing stage II and above. The patients were made aware of the study, and properly informed consent was taken from the patients about using their personal data for the study. Ethical approval was collected from the respected authority.

Result: The study included more female than male participants, with a ratio of 3 to 5. Three-fourths of the participants were married, while the rest were unmarried. The youngest participant was 35 years old, and the oldest was 73 years old. Participants aged 35-39 years constituted only 10% of the total sample, whereas 37.5% were older than 60 years. Most of the participants (70%) were from rural areas, while the remaining 30% were from urban localities. Nearly half of the participants (48.75%) had no formal education, and only a small proportion (6.25%) had attained higher education.

Conclusion: According to the findings of this study, hypertension was more prevalent among females than males. The prevalence of hypertension was found to be lower in individuals with higher levels of education and higher incomes. Hypertension was more prevalent in rural areas than in urban areas, and various socioeconomic factors were believed to impact the mental health and stress levels of participants.

INTRODUCTION

The leading cause of death in practically all developed nations is cardiovascular disease. The scant information available even in developing nations points to the possibility of a comparable outbreak there if the current tendencies continue. Although treating patients who have cardiovascular disease symptoms is a crucial aspect of fighting these illnesses, medication by itself cannot do much because sudden death is frequently the first sign of heart-related illnesses. Even when a treatment is available, it is frequently

employed as a palliative measure rather than to cure the underlying cause of the illness. Deaths from coronary and cardiovascular diseases reached their pinnacle in the 1960s, but ever then, many industrialized nations have praised how scientific advances have resulted in a decline in the rates of cardiovascular mortality. Regardless of this, there were 7.3 million deaths from coronary heart disease worldwide in just 2001.¹ In developing and poor nations, death rates were significantly higher. The risk factors in industrialized and developing



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nations may differ, which could account for this. Hypertension, or high blood pressure, is one of the key risk factors that is widely present around the world. The amount of force that someone's blood applies to their blood vessel walls is known as their blood pressure.² One of the most prevalent chronic diseases with no cure is it. Because it can only be treated with medication, hypertension patients must follow specific dietary and lifestyle guidelines for the rest of their lives. Another significant finding is that because hypertension frequently lacks specific symptoms, it frequently goes undetected in many patients. So, without regular medical checkups, many people frequently go without a diagnosis for their hypertension. Nearly half of the adult population has high blood pressure, even in wealthy nations like the USA.² There are three stages of hypertension: stage I hypertension (80-89/130-139 mm Hg), stage II hypertension (90/140 mm Hg), and hypertensive crisis (120/180 mm Hg). Systolic blood pressure more than 115 mm Hg is said to be the cause of 62% of cerebrovascular disease and 49% of ischemic heart disease, according to the World Health Organization.³ Along with heart disorders, it is known to cause stroke, end-stage renal disease, and chronic kidney disease.^{4 5} Additionally, it comes in third place among DALY (Disability Adjusted LifeStyles) causes.⁶ Numerous factors, which might vary widely based on age, sex, and location, can contribute to hypertension.⁷ Numerous epidemiological research have shown that a variety of environmental factors, including early life experiences, socioeconomic level, age, sex, race, dietary habits, alcohol intake, physical activity, and others, can affect blood pressure.^{8 9} The goal of the current study was to determine the association between patient socioeconomic level and hypertension.

METHODS

This cross-sectional observational study was carried out in the Department of Cardiology, Sheikh Hasina Medical College, Habiganj, Bangladesh during the course of 2 year, from June 2019 to May 2021 In order to conduct this study, 250 patients were initially questioned. After

meeting the inclusion and exclusion requirements, 160 patients were chosen from among those who had been hospitalized with high blood pressure and those who had frequent checkups and were demonstrating stage II and above hypertension. Informed consent was obtained from the patients about the use of their personal information for the study when they were made aware of the project. From the acknowledged authorities, ethical approval was obtained.

Inclusion criteria:

- Patients diagnosed with high blood pressure (stage II and above)
- Patients who have been hospitalized with high blood pressure
- Patients who have frequent checkups for high blood pressure
- Exclusion criteria:
- Patients who have already received treatment for hypertension
- Patients with a history of stroke or other cardiovascular diseases
- Patients who are unable to provide informed consent for the study

RESULTS

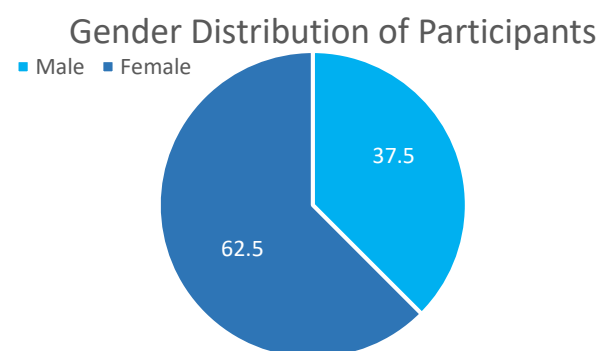


Figure 1: Gender Distribution of the participants (n=160) Among the participants, 62.5% were female and only 37.5% were male. The male:female ratio was 3:5

The study's youngest participant was 35 years old, while its oldest member was 73. The vast majority of participants were older than average. The youngest age group of 35 to 39 years represented 10% of the participants. 13.75% of the participants were in the 40-44- and 50-54-year age groups.

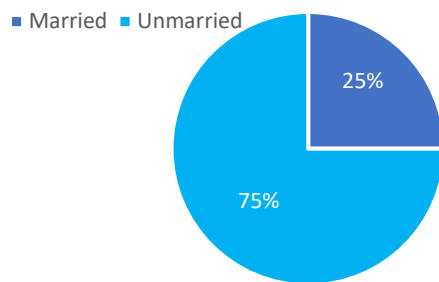


Figure 2: Marital Status of the participants (n=160)
Among the cases 75% were married and 25% were unmarried.

Table 1: Age Distribution of the participants (n=160)

Age	%	n
35-39	10	16
40-44	13.75	22
45-49	15	24
50-54	13.75	22
55-59	10	16
60-64	18.75	30
≥65	18.75	30

The age group of 45 to 49 years had the second-highest number of participants, making about 15% of the total. 60–64-year-olds made up 18.75% of participants, and people 65 years and over made up 18.75% of participants.

Table 2: Education level of the participants (n=160)

Education	%	n
No Education	48.75	78
Primary Education	30	48
Secondary Education	15	24
Higher Education	6.25	10

The majority of the participants had not completed a basic education. Only 30% of the participants had completed elementary school, and 48.75% were illiterate. Only 6.25% of the participants had a degree or higher education, and only 15% had completed secondary school.

Table 3: Locality of the participants (n=160)

Locality	%	n
Rural	70	112
Urban	30	48

70% of the participants were from rural areas, and only 30% were from urban localities.

Table 4: Income Level of the participants (n=160)

Financial Status	%	n
Lowest Income Level	13.75	22
Low Income Level	16.25	26
Middle Income Level	17.5	28
High Income Level	22.5	36
Highest Income Level	30	48

Among the participants, the highest income level was observed in a majority of the participants, as 30% belonged to this group. 22.5% were from high-income families, 17.5% were from middle-income households, 16.25 were from low-income levels, and 13.75% were from the lowest income levels.

DISCUSSION

One of the main risk factors for cardiovascular illnesses is hypertension, also known as high blood pressure. Patients with hypertension must take medications for the rest of their lives because there is no known treatment for the condition. As a factor influencing patients' ability to live with a disability, it comes in third place. Due to the lack of specific symptoms associated with hypertension, one of its harmful characteristics is that many individuals go their entire lives without receiving a diagnosis.² The only way to deal with this is through routine medical exams, which are not accessible to everyone in both developed and poor countries. Even in the US, hypertension affects about half of the adult population.² Numerous factors, including urbanization, unhealthful eating patterns, age, sex, and others, might contribute to hypertension. The effects of socioeconomic status on people with hypertension have been the subject of numerous studies, although the findings from various studies have been inconsistent.¹⁰ The current study was undertaken to determine the relationship between hypertension and socioeconomic position in our nation. This may be due to differences in nationality, race, locale, and environmental factors. We only recruited participants in the current study who had blood pressure readings of 90 to 140 mm

Hg or higher. In the current survey, women made up 62.5% and men just 37.5%. This study¹¹, was remarkably similar to a previous one conducted in Bangladesh, and even globally, women are far more likely than men to have hypertension¹⁰⁻¹³. This contrasts with some other data, where menopause was a factor and hypertension prevalence was significantly higher in obese males than in women.¹⁴⁻¹⁵ The current study also took into account marital status. Only 20 participants were single, making up 3/4 of the study's participants. This greater frequency of hypertension in married participants may be due to the mental strain of providing for a family as well as other family issues. The world over, mental stress is acknowledged as a cause of hypertension.^{16,17} Another important risk factor for hypertension was getting older. The majority of our study's participants were older than average in age. A total of 18.75% of the participants were between the ages of 60 and 64, while another 18.75% were over the age of 64. Only 8 of the participants were between the ages of 35 and 39, making up a very small percentage of the youngest age group. This is consistent with earlier research' findings that showed the incidence of hypertension rose with age.¹¹⁻¹⁸⁻¹⁹ Even while young adults can develop hypertension, a far higher prevalence has been seen in the elderly, particularly those over the age of 60.¹⁸ The majority of the elderly patients in our study were in the hypertensive stage of hypertension. Another determining aspect in the current investigation was education level. Literacy rates among the 160 participants were extremely low, and nearly half (48.75%) had not completed a basic education. The prevalence of hypertension decreased as education level increased. This study was comparable to those that found a direct connection between low literacy rates and high blood pressure.¹⁰⁻²⁰ When compared to the fundamental understanding of health and welfare that someone with a high level of education would have, this may be because those with low levels of education lack awareness and information of high blood pressure. The disparity in food preferences between various groups with various degrees of education may also be a contributing factor. Only 30% of the participants were from urban regions, with the bulk hailing from rural areas. The majority of the

illiterate population originated in rural areas, which is related to the population's degree of education. Other studies with comparable findings provided more evidence for this.²⁰ The participants in the current study were divided into five groups according to their degree of income and the study's focus was also on the patients' financial situation. Similar to comparable research conducted in other nations, the prevalence of hypertension was directly correlated with the degree of income.²¹⁻²³ This may be yet another component that stress has an impact on, as patients with high incomes need to worry about how to invest and protect their wealth, but many low- and middle-income families merely need to worry about how to spend their income on day-to-day expenses. Everyone can develop hypertension or high blood pressure; however elderly persons require special attention. It is particularly crucial because hypertension is incurable and has a variety of long-term repercussions on the body. Mental stress is one of the main contributors to hypertension, but it can also significantly worsen it and result in an unsatisfying lifestyle. This is especially true in developing nations like our own, where the general public still lacks access to the greatest medical care and any chronic illness can significantly alter one's way of life.

Limitations of The Study

The current study sample size was relatively small, which may reduce the statistical power of the analysis and limit the precision of the estimates.

CONCLUSION

According to the current study, women are more likely than men to have excessive blood pressure. The prevalence of hypertension was directly linked to income and inversely proportional to education. In comparison to metropolitan regions, hypertension was significantly more common in rural areas, and several socioeconomic factors were thought to have an impact on the participants' stress levels and mental health.

RECOMMENDATIONS

A small sample size was used for the investigation. All phases of hypertension might have an impact on the findings since only two stages of hypertension were used in the study. This study involved just one center; to get a more accurate picture, other centers and a wider population are required. Increased public awareness of hypertension and its treatment options is necessary to reduce the prevalence of the condition. Patients' mental health and wellness must be taken care of, and everyone should have access to regular medical exams.

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

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