Observation of Dietary Habits among Diagnosed Ischemic Heart Disease Patients

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ABSTRACT

Introduction: *Ischemic heart disease (IHD) remains a major health concern globally and is particularly prevalent in low- and middle-income countries, including Bangladesh. Dietary habits play a crucial role in the prevention and management of IHD. This study aimed to observe the dietary habits among diagnosed ischemic heart disease patients in Bangladesh.*

Methods: *This cross-sectional descriptive study was conducted at the Department of Cardiology, Rangpur Medical College, Rangpur, Bangladesh, involving 258 IHD patients. Data was collected using a pre-tested structured questionnaire, and participants were classified into three groups based on their dietary habits. Informed consent and ethical approval were obtained.*

Result: *The majority of respondents (65.9%) were aged 55 years and above, with a mean age of 58.12 years. Regarding education, 49.2% had completed their SSC or equivalent, and 28.7% had completed their HSC or equivalent. Most participants (65.1%) had a monthly income of less than 20,000 taka. Among the total, 22.48% were smokers, and 77.52% did not smoke. Only 7.36% followed a vegetable-prone diet (Group-1), 28.68% adhered to a middle-class food diet (Group-2), and the majority, 63.95%, consumed a fatty food diet (Group-3). While 39.53% did not consume vegetables daily, 31.01% had adequate servings, and 29.46% had inadequate servings. Only 25.97% had a daily fruit intake, all with inadequate amounts, and 74.03% did not consume fruits regularly. None of the respondents had an adequate fruit intake. Finally, 68.60% of respondents reported consuming extra salt, while 31.40% did not.*

Conclusion: *The study highlights the need for targeted interventions to promote healthier dietary habits among IHD patients in Bangladesh. By implementing evidence-based strategies and fostering multi-sectoral collaboration, it is possible to improve IHD prevention and management in this population.*

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INTRODUCTION

Cardiovascular diseases (CVDs) are a leading cause of morbidity and mortality worldwide, accounting for approximately one-third of deaths.[1] Among the various types of cardiovascular ailments, ischemic heart disease (IHD) stands out as the most prevalent and constitutes a significant public health concern.[2] The burden of IHD is not evenly distributed across the world, with variations in prevalence and risk factors observed between countries and regions. This global health issue has been acknowledged as a critical threat to sustainable development in the 21st century.[3] Ischemic heart disease (IHD), also known as coronary artery disease (CAD), is a leading cause of morbidity and mortality worldwide, contributing significantly to the global burden of disease.[4] In Bangladesh, the prevalence of IHD has risen dramatically in recent years due to an increasing trend in unhealthy lifestyle choices, urbanization, and an aging population.[5]

According to a study conducted by the World Health Organization (WHO) in 2018, approximately 26.7% of the total deaths in Bangladesh were attributed to cardiovascular diseases (CVDs), with IHD being the primary cause.[6] Dietary habits play a crucial role in the development and progression of IHD.[7] A diet high in saturated fats, trans fats, salt, and refined carbohydrates is associated with an increased risk of developing IHD, while a diet rich in fruits, vegetables, whole grains, and healthy fats has been shown to provide protective effects.[8] Given the strong link between diet and IHD, it is imperative to study the dietary habits of individuals diagnosed with IHD to inform public health interventions aimed at mitigating the impact of this disease in Bangladesh. Bangladesh has experienced a nutrition transition characterized by a shift from traditional diets rich in whole grains, fruits, and vegetables to a more Westernized diet high in processed foods, unhealthy fats, and added sugars.[9] This change in dietary habits has contributed to the rising prevalence of IHD and other non-communicable diseases in the country.[10] Moreover, food insecurity and malnutrition remain significant public health challenges in Bangladesh, further exacerbating the risk of IHD and other chronic diseases.[11] Despite the increasing burden of IHD in Bangladesh, there is a paucity of research investigating the dietary habits of diagnosed IHD patients in this population. Previous studies have focused primarily on the association between individual dietary components and IHD risk, with limited attention given to the overall dietary patterns of IHD patients.[12,13] Understanding the dietary habits of diagnosed IHD patients is critical for designing effective dietary interventions and promoting better cardiovascular health outcomes in Bangladesh. Therefore, the primary objective of this study is to observe and analyze the dietary habits of diagnosed IHD patients in Bangladesh, with a particular focus on food consumption patterns, nutrient intakes, and adherence to dietary recommendations. The findings of this study will provide valuable insights into the dietary behaviors of IHD patients in Bangladesh, enabling healthcare professionals and policymakers to develop targeted interventions and strategies to improve the dietary habits and overall health of this high-risk population. In summary, the rising prevalence of IHD in Bangladesh necessitates a thorough investigation into the dietary habits of diagnosed IHD patients to inform public health interventions aimed at mitigating the impact of this disease. This study will contribute to the existing body of knowledge by providing a comprehensive analysis of the dietary habits of IHD patients in Bangladesh, with potential implications for dietary interventions and public health policy development.

METHODS

This cross-sectional descriptive study was conducted at the Department of Cardiology, Rangpur Medical College and Hospital, Rangpur, Bangladesh. The study duration was 3 years, from January 2019 to December 2021. During this period, a total of 258 cases of patients diagnosed with ischemic heart disease (IHD) who were attending the study place were included in the study following inclusion and exclusion criteria. Patients with other chronic diseases and acute conditions were excluded from the study. The sample size was determined to be 258 due to time limitations, using a convenient type of non-probability sampling technique. Data was collected using a pre-tested structured questionnaire. The final version of the questionnaire was used for data collection, which mainly consisted of structured questions. Inclusion criteria were patients who were willing to participate in the study and had been diagnosed with IHD. The dietary habits of the participants were divided into 3 groups, Group-1 having focus on vegetable prone foods, Group-2 having a mixture of vegetable and junk food, or Middle-class food, and Group-3 consisting of mostly junk food and fatty food. A serving of vegetable and fruit was determined by the amount of a standard tea-cup. Informed consent was obtained from each participant prior to data collection, and ethical approval of the study was also obtained from the ethical review committee of the study hospital.

RESULTS

Table 1: Age Distribution of the participants (n=258)

Age Group	Frequency	Percent
25-34	4	1.55%
35-44	27	10.47%
45-54	57	22.09%
55 and above	170	65.89%

In terms of age, the majority of respondents (65.9%) were 55 years and above, followed by 22.1% in the 45-54 age group, 10.5% in the 35-44 age group, and only 1.6% in the 25-34 age group. The mean age of the participants was 58.12 years, with a standard deviation of 10.98 years.
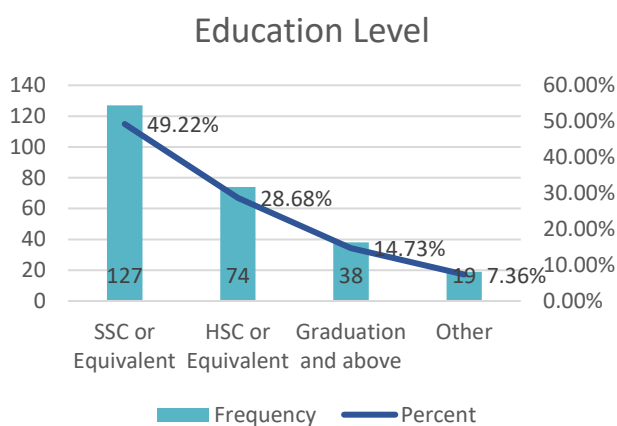

Figure 1: *Distribution of the respondents by education (n =258)*

When examining the education level of the respondents, 49.2% had completed their SSC or equivalent, 28.7% had completed their HSC or equivalent, 14.7% had a graduation degree or higher and 7.4% fell into the 'other' category.

Table 2: *Distribution of the respondents by family member (n =258)*

Family members	Frequency	Percent
<3	35	13.57%
4-6	184	71.32%
7-9	30	11.63%
10 and above	9	3.49%

13.57% had less than three family members, 71.32% had between four and six family members,

11.63% had between seven and nine family members and 3.49% had ten or more family members.

Table 3: *Distribution of the respondents by monthly income (n =258)*

Monthly income	Frequency	Percent
<20000	168	65.12%
20000-39000	56	21.71%
40000-59000	23	8.91%
60000 and above	11	4.26%

The monthly income distribution of the respondents showed that 65.1% had an income of less than 20,000 taka, 21.7% had an income between 20,000 and 39,000 taka, 8.9% had an income between 40,000 and 59,000 taka and 4.3% had an income of 60,000 taka or above. The mean monthly income of the respondents was 21,105.30 taka, with a standard deviation of 3,927.50 taka.
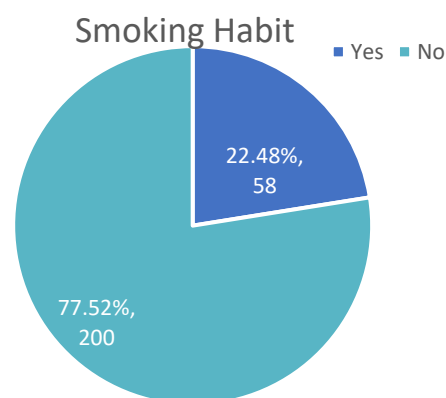

Figure 2: *Distribution of the respondents by smoking habit (n =258)*

Among the total participants, only 22.48% were smokers, while 77.52% of the participants did not have a habit of smoking.

Table 4: *Distribution of the respondents by dietary pattern (n =258)*

Dietary pattern	Frequency	Percent
Group-1 (Vegetable prone food)	19	7.36%
Group-2 (Middle class food)	74	28.68%
Group-3 (Fatty food)	165	63.95%

Only 7.36% of the respondents followed a vegetable-prone food diet (Group-1), 28.68% adhered to a middle-class food diet (Group-2) and the majority, 63.95%, consumed a fatty food diet (Group-3).

Table 5: *Distribution of the respondents by daily vegetables intake (n =258)*

Daily vegetables intake	Frequency	Percent
<5 servings	76	29.46%
5 or more servings	80	31.01%
No	102	39.53%

The table shows that while 39.53% did not have a habit of consuming vegetables daily, only 31.01% had an adequate serving of vegetable (5 or more) regularly and 29.46% had inadequate servings of vegetables (<5 serving) per day.

Table 6: *Distribution of the respondents by serving of fruits in a day (n =258)*

Serving of fruits in a day	Frequency	Percent
<5	67	25.97%
5 and above	0	0.00%
No	191	74.03%

Only 25.97% had a habit of daily fruits intake, who all had inadequate amounts of fruits (<5 serving) per day, while 74.03% had no habit of consuming fruits regularly. None of the respondents (0%) had a habit of consuming an adequate amount (5 or more servings) of fruits.
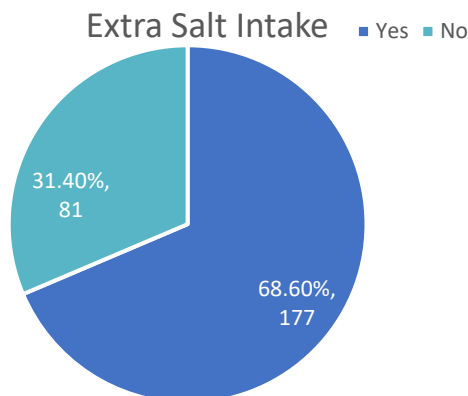

Figure 3: *Distribution of the respondents by extra salt intake (n =258)*

177 respondents, or 68.60% of the total respondents, reported consuming extra salt in their diet. In contrast, only 81 respondents, accounting for 31.40% of the total, did not consume extra salt.

DISCUSSION

The present study aimed to explore the dietary habits among diagnosed ischemic heart disease patients in Bangladesh. The findings of the study revealed several demographic and dietary factors that may contribute to the progression and management of ischemic heart disease (IHD) in this population. In terms of age distribution, the majority of the participants (65.9%) were 55 years and above, which is consistent with the global pattern of IHD primarily affecting older individuals.[14] This highlights the importance of targeting preventive measures and management strategies for IHD in older populations, particularly in developing countries like Bangladesh, where the burden of non-communicable diseases is increasing.[15] Regarding education levels, our study found that 49.2% of respondents had completed their SSC or equivalent, and only 14.7% had a graduation degree or higher. Lower educational attainment has been associated with a higher prevalence of IHD and unhealthy lifestyle behaviors, including poor dietary habits.[16] This suggests that interventions to improve dietary habits among IHD patients in Bangladesh should consider the influence of educational background on health behaviors. The mean monthly income of the respondents was 21,105.30 taka, and 65.1% had an income of less than 20,000 taka. Lower socioeconomic status has been linked to higher IHD risk, partly due to limited access to healthier food options and a higher prevalence of unhealthy dietary habits.[17] Therefore, public health initiatives should take into account income disparities when designing interventions to promote healthier diets among IHD patients in Bangladesh. The distribution of participants across the three food diet groups in this study provides valuable insights into the dietary habits of ischemic heart disease (IHD) patients in Bangladesh. In our sample, only a small proportion (7.36%) of the respondents adhered to a vegetable-prone food diet (Group-1), which is

characterized by a higher intake of vegetables, fruits, whole grains, and other plant-based foods. This group represents the most health-conscious segment of our study population, as a plant-based diet is known to be associated with a reduced risk of IHD and other cardiovascular diseases.[18] The second group, comprising 28.68% of the participants, followed a middle-class food diet (Group-2), which is characterized by a mix of both plant-based and junk food items. This group may represent a transitional stage in dietary habits, where individuals are making some healthier food choices, but still consume processed and high-calorie foods that can contribute to IHD risk.[19] The majority of the participants (63.95%) belonged to Group-3, characterized by a diet consisting predominantly of junk food and fatty food items. This group represents the highest risk for IHD progression and complications, as diets high in unhealthy fats, added sugars, and sodium are strongly associated with an increased risk of cardiovascular diseases.[7] The significant prevalence of unhealthy dietary habits among IHD patients in Bangladesh underscores the need for targeted interventions aimed at promoting healthier food choices and addressing the barriers to adopting a more balanced diet. The study also found that only 31.01% of the participants had an adequate daily intake of vegetables (5 or more servings), and none of the participants consumed an adequate daily amount of fruits (5 or more servings). The low consumption of fruits and vegetables is concerning, as higher intake of these foods has been associated with a reduced risk of IHD.[20] This highlights the importance of promoting fruit and vegetable consumption as part of a comprehensive approach to IHD prevention and management in Bangladesh. Additionally, our findings showed that 68.60% of respondents reported consuming extra salt in their diet. High salt intake is a significant risk factor for hypertension, which in turn contributes to the development and progression of IHD.[21] This indicates the need for interventions aimed at reducing salt consumption among IHD patients in Bangladesh, such as public health campaigns and salt reduction strategies in the food industry. In conclusion, the findings of this study highlight the need for targeted interventions to promote healthy dietary habits among IHD patients in Bangladesh.

Public health strategies should focus on increasing the consumption of fruits and vegetables, reducing the intake of unhealthy fats and salt, and considering the influence of demographic factors, such as age, education, and income, on dietary habits and IHD risk.

Limitations of The Study

The study was conducted in a single hospital with a small sample size. So, the results may not represent the whole community.

CONCLUSION

The present study highlights the pressing need to address unhealthy dietary habits among diagnosed ischemic heart disease (IHD) patients in Bangladesh. The majority of participants were found to consume diets high in junk food and fatty food items, which are strongly associated with an increased risk of cardiovascular diseases. Given the significant burden of IHD in Bangladesh, it is imperative to implement targeted interventions that promote healthier food choices and address the barriers to adopting a more balanced diet. By employing a comprehensive approach involving multi-sectoral collaboration, public health professionals and policymakers can contribute to improved IHD prevention and management in this population.

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