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Extended Abstract
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Cardiology-2020: How would you prevent coronary heart disease? - Shigenori Ito - Division of Cardiology and Medical Fitness, Shin-Shin Toyota, Sankuro Hospital, Toyota, Japan

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Introduction

Heart disease is now the most common cause of death worldwide; it is on the rise and has become a true pandemic that respects no borders. Unlike developing countries, Bangladesh is also experiencing an epidemiological transition from infectious, communicable diseases to chronic, non-communicable diseases (NCDs) like cardiovascular diseases, diabetes, cancer, chronic respiratory diseases, and injury [1]. According to WHO the most important behavioral risk factors of HDs are unhealthy diet, physical inactivity. These risk factors are responsible for about 80% of HD and cerebrovascular disease (WHO, 2011) [1]. The inverse relation between physical activity and HD remains controversial. However, whether the association between physical activity and HD is independent of other cardiovascular risk factors is debatable [2]. HD is now on the increase in Bangladesh, possibly due to the changing lifestyle, increasing body weight and working pattern [3-5]. Overweight and obesity are well-known risk factors for HD in the general population. Although overweight and obesity are associated with an increased risk of cardiovascular disease (CVD), higher levels of physical activity are associated with a decreased risk of CVD [4]. Bangladeshi people, like other south Asians, have high susceptibility to ischemic heart disease (IHD) but population-based data are lacking in Bangladesh. A prevalence of 3.4% was recorded in rural population with traditional lifestyle and thin body mass index [13].

Physical activity in patients with HD is likely to reflect longstanding patterns of exercise as well as change in physical activity since the diagnosis of HD. In this study, about two-thirds of subjects did not attend cardiac rehabilitation, which was independently associated with both lower physical activity and a greater risk of decreasing exercise after HD diagnosis. Leisure time physical activity has been more clearly

related to lower HD mortality than activity at work. The majority (67%) of stability study participants was not working, and a higher proportion of subjects reported moderate or greater physical activity during ‘leisure time’ than ‘at work’. However, not all exercise was ‘at work’ or ‘during leisure’, probably reflecting exercise during usual activities of daily life. It is possible women reported greater physical exercise than men, because on average they spend more time on household chores [5]. Both physical inactivity and obesity are modifiable risk factors that play significant roles in the development of HD and are thus major public health issues. Obesity is recognized as a major public health issue owing to its dramatically rising prevalence and deleterious impact on many chronic diseases including HD. In addition, some studies demonstrate that physical activity may be more important than body mass index (BMI) (calculated as weight in kilograms divided by height in meters squared) in the context of HD prevention, and others showa greater risk associated with BMI [6]. Obesity has reached global epidemic proportions in both adults and children and is associated with numerous comorbidities, including hypertension (HTN), type II diabetes mellitus, dyslipidemia, obstructive sleep apnea and sleepdisordered breathing, certain cancers, and major cardiovascular (CV) diseases. Because of its maladaptive effects on various CV risk factors and its adverse effects on CV structure and function, obesity has a major impact on CV diseases, such as heart failure (HF), HD, sudden cardiac death, and atrial fibrillation, and is associated with reduced overall survival [7,8].

Materials and Methods

This work is partly presented at 27th International Conference on Clinical & Experimental Cardiology Research September 21-22, 2018 Vancouver, British Columbia, Canada.

Study type

Descriptive cross sectional study.

Sampling technique

Inclusion/ Exclusion criteria: The widest possible range of studies that met the inclusion criteria was included; as it has been argued that excluding studies on the grounds of 'poor quality' introduces the most important source of bias into qualitative reviews. So, I collect data from those participants who have heart disease. They are not included in my research work who have no heart disease.

Place of study

Cardiac Hospital in Khulna city, Bangladesh.

Study period

September'17 to February'18.

Study population

The data were collected a total number of 240 patients with aged upto 30 years and older with a diagnosis of first incident acute HD in reputed cardiac hospitals in Khulna city.

Sources of data

There are two sources of data collection. Primary source includes the field where the incidence occurs. Through face-to-face interaction, data were collected. Here primary sources are respondents. Secondary source is such a data, which is supplied by some institution. For conducting the study, secondary data were collected from different sources, which are as following- Relevant books and journal, relevant thesis, Relevant articles from website.

Data collection

Data were collected by face to face Interview method, by using questionnaires and for each questionnaire needed at least ≈15 min. I collected data on nutritional status, history of physical activity, family history of HD disease and life style. Next, the data on anthropometry includes height and weight. Height was measured to the nearest 0.1 cm with a standard anthropometer and weight to the nearest 0.1 kg with a portable weighing machine and light clothing with no shoes. The WHO has defined categories of BMI based on evidence of increased risk of chronic disease and mortality (Table 1). (WHO 2000). The body mass index (BMI), to estimate overall obesity, overweight, normal and malnourished was calculated by dividing body-weight in kilograms by height in metres squared (kg/m2). A body mass index ≥ 30 kg/m2 was considered overweight.

Data on the age, and physical activity of each individual were also collected. Physical activity was classified into three levels. Low/ sedentary activity referred to people involved in office work, research, teaching, business and land ownership; medium activity was attributed to dual jobs and land owners involved in agriculture work; and high activity referred to farmers actively involved in the field and in agriculture labours.

Laboratory measurements

Total cholesterol levels were estimated using standard protocols.

Data processing and Statistical analysis

The data was exported into Statistical Package for Social Sciences (IBM SPSS Statistics) version 20 for further analysis along with the biochemical measurements. Descriptive statistics were computed on the data and the mean and standard deviation were used to describe continuous data while frequencies were used to describe categorical data.

Results and Discussion

This chapter indicates data analysis and discussion of different age group of HD patients based on gender's BMI, physical activity and life style (patient's occupation), family history of HD, in Khulna city of Bangladesh.

Figure 1 show respondent's age group based on gender. From this results it is clear that between 50-59 years old female and between 60-69 years old male were mostly affected by HD (Table 2).

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From our field survey this above table and below figure Show that, the amount of respondents' affected by overweight is large. So it is shown that Obesity and overweight is associated with increased risk of HD. The relationship links excess body weight with HD both indirectly as an independent risk factor for the established biomedical risk factors and directly as an independent risk factor for HD [8]. Obesity is significantly associated with increased risk of future HD [9,10] (Figure 2).

Below figure 3 we illustrates that, among 240 respondents, 62.20% male and 65.40 % female respondents gain HD from family where 37.80 % male and 34.60 % female respondents did not gain this disease from family. In this curve, we can say that the family history is often responsible to affect HD (Figure 3) (Table 3)

BMI (kg/m2)	Classification
< 18.5	Underweight
18.5–24.9	Healthy weight range
≥25	Overweight
25.0–29.9	Pre-obese
≥30	Obese
Sources: WHO 2000; NHDC 2003.	

Table 1: Classification of BMI for people aged 18 and over

PIA (physical activity level)is an important contributor to heart disease. Cardiovascular benefits of regular physical activity include reduced blood pressure, weight control, reduced waist circumference all of which help to reduce the risk of developing heart disease [11].

Table 3 and Figure 4 illustrates Respondent's occupation based on gender. Here, 20.20 % male were sedentary, 73.40 % were moderate and 6.40 % were heavy worker where 71.20 % female were sedentary and 28.80 % were moderate worker. In this curve it is found that the women who are involved in low physical activity are possible affect by HD. On the contrary the rate of HD affected male were 73.40 % who were involved in normal physical activity level.

Table 4 provides the socio-demographic characteristics of males and females. The majority (40.4%) of females worked 8 hours/day compared to 33.5 % of their male counterparts. And 18.6 % male maintain regularity on walk where female maintain regularity 11.5 %.

About 45.2% of males consume fast food everyday compared to 32.7% of females. In addition, only 3.8% of females consume fast food once a week compared to 3.7% of their male counterparts. About 35.1% of males have to take fast food 3 times a week while 36.5% of females have to take fast food 3 times a week (Table 5).

Nutritional Status/BMI (kg/m2)	Gender				Total No.
	Total no.	Male %	Total no.	Female %	
Obese (BMI >30)	51	27	13	25	64
Overweight	106	56.4	24	46.2	130
(BMI ≥ 25 or 25- 29.99)					
Normal / Healthy weight range	31	16.5	11	21.2	42
(BMI 18.5 - 24.99)					
Malnourished / Underweight (BMI <18.5)	-	-	4	7.7	4
Total	188	100	52	100	240
Source: Field Survey (2017-2018).					

Table 2: Prevalence of obesity and overweight between male and female participants

Respondent's occupation	Gender				Total No.
	Total no.	Male %	Total no.	Female %	
Low / Sedentary work (Housewife, Retired)	38	20.2	37	71.2	75

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Moderate / Medium work (office work, research, teaching, business and land ownership dual jobs and land owners involved in agriculture work)	138	73.4	15	28.8	
					153
Heavy work (Day labor, farmers actively involved in the field and in agriculture labours)	12	6.4	-	-	12
Total	188	100	52	100	240
Source: Field Survey (2017-2018).					

Conclusion

HD prevention in Asia is an important issue for the world health because half of the world's population is living in Asia [12-17]. For analysis of HD, from our research demonstrates that overweight, obesity, previous family history of cardiac diseases, and sedentary life style are the influential risk factors of heart disease. The aim of this study is to give an update of the present knowledge in cardiovascular consequences of obesity, overweight, physical activity for all kinds of people in this world. So, we have concluded that increasing body weight, physical inactivity, unhealthy eating habits, and poor lifestyle has an effect with Heart disease.

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