

Behavioural and Anthropometric Profile of Reproductive Age Women Admitted with Cardiovascular Diseases in the Capital City of Bangladesh

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ABSTRACT

Background and Objectives: Studies have shown that the risk profile of cardiovascular diseases for women of reproductive age is not the same as that of postmenopausal women. The risk profile of women of reproductive age group in our country has not been well studied. The present study was intended to investigate the risk profile and risk behaviour of reproductive age women for cardiovascular diseases.

Materials and Methods: This cross-sectional study, intended to assess the risk factors of cardiovascular diseases among reproductive age women (ranging from 15 - 49 years), was conducted on women with cardiovascular diseases admitted at two selected Cardiac Specialized Hospitals of Dhaka city. A total of 223 women with predefined eligibility criteria were included in the study. The study investigated the details of the socio-demographic, behavioural, anthropometric and biochemical characteristics of the sampled population.

Result: More than two-fifth of the respondents belonged to age group 35-45 years. A few (1.3%) respondents were currently smoker. But over 8% were used to consuming smokeless tobacco (betel-nut with zorda, gul etc.) and 12.6% were occasional consumer. The mean duration of smokeless tobacco consumption was 14.1 ± 10.6 years and the mean frequency of consumption of smokeless tobacco was 3.6 ± 2.3 per day. More than one-third of the respondents (35.9%) were overweight and 15.7% were obese. The mean BMI of the respondents was 23.8 ± 4.8 kg/m². The mean waist and hip circumferences were 98.9 ± 17 and 99.9 ± 12.2 cm respectively. Majority (89.7%) of the women's waist:hip ratio was at risk. The recommended fruit and vegetables intake (at least 5 servings a day) by the respondents was not found at all. Over half (50.2%) of the respondents were used to regular intake of extra table salt in their meals, 19.3% were occasional user. Nearly one-fifth of the respondents (17.9%) used to have fast food and the mean number of intake was 1.5 ± 1 per day in a usual week. Over one-quarter (27.4%) of the respondents reported maintaining recommended physical exercise (minimum 30 min of physical exercise for at least 5 days a week). About 40% were hypertensive. Nearly two-thirds (62.3%) had the family history of chronic diseases; of them approximately 55% reported hypertension, 51.4% heart disease and diabetes mellitus.

Conclusion: The women in general took inadequate fruits and vegetables. One-third of women were accustomed to fast food, street food, fatty-food etc. Every 1 in 16 women was used to consuming smokeless tobacco. Only one-third took recommended physical exercise. The rapidly increasing trend of obesity might be due to sedentary life-style with increased consumption of fatty-food and less intake of fruits and vegetables. Further investigation with large sample is recommended to validate the findings of the present study.

Key words: Cardiovascular risk; Women; Reproductive age.

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INTRODUCTION

Cardiovascular disease (CVD) has become a leading cause of mortality and morbidity in developing countries and it is expected to rise further over the next few decades.¹⁻⁴ Its prevention in Asia has become an important issue for world health, because half of the world's population lives in Asia.⁵ Of the 45.0 million adult deaths reported worldwide in 2002, three-quarters (32 million) were due to non-communicable diseases.⁶ For age adjusted Coronary Heart Disease (CHD) mortality, it is of interest that East Asian countries have lower mortality than other Asian countries, except Thailand. As observed in the seven countries Study, East Asian countries still have lower CHD mortality than what is seen in Mediterranean countries.^{7,8}

Similar to the well-established traditional risk factors for stroke and CHD in western countries hypertension, smoking, serum total cholesterol and diabetes mellitus (DM) are the main risk factors for stroke and CHD in Asia^{5,8} although the prevalence of CHD is generally lower than that in Western countries, except in Singapore. Reproductive factors in women may play a role in CVD risk through hormone levels, which vary over a woman's lifetime. Pre-menopausal women have lower risk of CVD morbidity and mortality compared with men and post-menopausal women, indicating a possible protective effect of endogenous oestrogen and progesterone.⁹ The prevalence of obesity is increasing in our country, and this may also increase the prevalence of DM, glucose intolerance, and the metabolic syndrome. Management of these traditional risk factors for CVD is important for the prevention of CVD.¹⁰ For women in Bangladesh; the consequences of reproductive factors on CVD risks have not been well quantified.

That purpose the present study was intended to assess the risk factors of cardiovascular diseases among reproductive agedwomen, admitted in

cardiac hospitals of Dhaka city with cardiovascular diseases. The objectives were to study the socio-demographic, behavioural, anthropometric and biochemical characteristics of the study population.

MATERIALS AND METHODS:

This cross-sectional study was conducted on 223 women of reproductive age (of 15-49 years) admitted consecutively with cardiovascular diseases at two selected Cardiac Specialized Hospitals of Dhaka city over a period of 4 months from November 2013 to February 2014. The selected hospitals were Ibrahim Cardiac Hospital, Shahbag, Dhaka, Bangladesh and NICVD (National Institute of Cardiovascular Diseases) Hospital at Sher-e-Bangla Nagar, Dhaka. The study investigated the details of the socio-demographic, behavioural, anthropometric and biochemical characteristics of the sampled population. The statistical analyses were performed using computer software SPSS (Statistical Package for Social Sciences) and the test statistics used to analyse the data were descriptive statistics (frequency with corresponding percentage, mean and standard deviation).

RESULTS

Age distribution shows that over 40% of the respondents were in the age group of 35-45 years followed by 28.3 % for ≥ 45 years, 21.1% for 25-35 years and only 8.5% for 15-25 years with mean age of the respondents being 39.7 ± 8.6 years (Table I). About 1.3% percent of the respondents were currently smoker. Over 8% reported as regular consumer of smokeless tobacco (betel-nut with zorda, gul etc.) and 12.6% were occasional consumer. The mean duration of smokeless tobacco consumption was 14.1 ± 10.6 years and the mean frequency of consumption of smokeless tobacco was 3.6 ± 2.3 per day. None of the respondents reported consuming

alcohol (Table II). Only one-third of the respondents (33.6%) reported taking regular physical exercise and among them 27.4% maintained the recommended regime of physical exercise (at least 30 min/day for at least 5 days in a week) (Table III).

TABLE I. Distribution of age of study population (n =223)

Age (years)*	Frequency	Percentage
15-25	19	8.5
25-35	47	21.1
35-45	94	42.2
≥45	63	28.3

*Mean age = (39.7±8.6) years; range = (15 - 25) years[#]

TABLE II. Distribution of risk-taking behaviour of study population (n =223)

Risk-taking behaviour	Frequency	Percentage	Mean±SD
Smoking habit			
Current smoker	3	1.3	
Non-smoker	220	98.7	
Duration of smoking (years)			4±1
Consume smokeless tobacco			
Regular	18	8.1	
Occasional	28	12.6	
Never	177	79.4	
Duration of smokeless tobacco (yrs)			14.1±10.6
Frequency of betel-nut with zorda or gul/day			3.6±2.3

TABLE III. Distribution of exercise related information among study population (n =223)

Exercise related information	Frequency	Percentage
Physical exercise history		
Yes	75	33.6
No	148	66.4
Recommended Exercise		
Yes	61	27.4
No	162	72.6

The recommended intake of fruits (at least 5 servings a day) was virtually nil. However, the majority of the respondents (83.9%) used to have at least 1 serving of fruits/day in a usual week with mean intake being 3±2 servings. The recommended intake of vegetables (at least 5 servings a day in a usual week) was also completely absent. But majority (97.8%) used to have at least 1 servings of vegetables/day. Over half (50.2%) of the respondents used to take of extra table salt in their meals, 19.3% were occasional user of extra salt and rest 30.5% never took any extra salt with meal. Nearly one-fifth of the respondents (17.9%) used to have fast food and the mean intake was 1.5±1 per day. More than one-third of the respondents (35.0%) used to consuming street food and the average frequency of intake was 2.2±1.6 per day. Nearly one-third of the respondents (30.5%) were accustomed to have fatty food and the mean intake was 1.4±1.2 per day in a usual week (Table IV).

TABLE IV. Distribution of dietary behaviour of study population (n =223)

Dietary behaviour	Frequency	Percentage	Mean±SD
Intake of fruits			
At least 1 *serving/day	187	83.9	
No servings	36	16.1	3±2
At least 5 *servings/day	0	0	
Vegetables intake			
At least 5 servings/day	0	0	
At least 1 serving/day	218	97.8	5.6±1.7
No servings	5	2.2	
Extra table salt intake			
Regular	112	50.2	
Occasional	43	19.3	
Never	68	30.5	
Fast food intake			
Street food intake	40	17.9	
Fatty food intake	78	35.0	
Fatty food intake	68	30.5	

*1 servings= 80 gm

About 40% was found to have hypertension. The mean systolic and diastolic blood pressure was 117.6 ± 21.9 mmHg and 77.3 ± 12.5 mmHg respectively. According to the ECG findings, over one-quarter (28.7%) had myocardial infarction and 25.6% ischemia. Out of 28 patients 9(32.1%) had hypercholesterolemia (Table V).

TABLE V. Distribution of patient characteristics of study population (n=223)

Clinical and laboratory findings	Frequency	Percentage	Mean±SD
Mean systolic pressure	---	---	117.6±21.9
Mean Diastolic pressure	---	---	77.3±12.5
ECG remarks (n = 223)			
MI	64	28.7	
Ischemia	57	25.6	
Others	102	45.7	
Raised cholesterol (≥200 mg/dl) (n=28)	9	32.1	178 ± 54

More than one-third of the respondents (35.9%) were overweight and 15.7% were obese. The mean BMI of the respondents was 23.8 ± 4.8 kg/m². The mean waist and hip circumferences were 98.9 ± 17 and 99.9 ± 12.2 cm respectively. Majority (89.7%) of the women's waist:hip ratio was at risk (Table VI).

TABLE VI. Distribution of anthropometric indices of the study population (n=223)

Anthropometric indices	Frequency	Percentage	Mean ± SD
BMI* category (kg/m²)			
Underweight (<18.5)	23	10.3	
Normal (18.5 to 23)	85	38.1	23.79 ± 4.8
Overweight (23 to 27.5)	80	35.9	
Obese (>27.5)	35	15.7	
Waist circumference (cm)	---	---	98.9 ± 17
Hip circumference (cm)	---	---	99.9 ± 12.2
Waist hip ratio			
Normal	23	10.3	0.98 ± 0.1
At risk	0	89.7	

*BMI-Asian cut off values were used

Approximately 63% had family history of chronic diseases; of them about 55% reported hypertension, 51.4% reported heart disease and diabetes mellitus. Family history of other chronic diseases included asthma (20.5%), chronic respiratory diseases (13.7%), cancer (11.0%) and others (4.8%) (Table VII).

TABLE VII. Distribution of family history of chronic diseases study population.

Family history of chronic diseases*	Frequency	Percentage
Family history of chronic diseases (n = 223)		
Yes	139	62.3
No	84	37.7
Types of Chronic Diseases (n = 139)		
Hypertension	80	54.8
Heart Diseases	75	51.4
DM	75	51.4
Asthma	30	20.5
Chronic respiratory diseases	20	13.7
Cancer	16	11.0
Others	7	4.8

*multiple responses

DISCUSSION

Cardiovascular disease, largely heart disease and stroke, accounts for almost half of all NCD-related deaths and is now the leading cause of death in low and middle-income countries. Nearly 58% of CVD deaths in these countries are in those aged < 60 compared with just 20% in high income countries.^{11,12} The present study was aimed at studying the distribution of CVD risk profile among women of reproductive age group (15-49 years) in Dhaka city. The outcome of this study will, therefore, help to formulate the preventive strategies against the growing epidemic of CVD in our country.

Probing into risk-taking behaviour revealed that 1.3% of the respondents were smokers with

mean duration of the smoking being 4 ± 1 years. This finding is quite similar with the findings of recently done NCD risk survey 2010 in Bangladesh.¹³ Although, the prevalence of smoking among female in our country is appreciably low, exposure to smokeless tobacco is unacceptably high (20.7%). The mean duration of consumption of smokeless tobacco (14.1 ± 10.6 years) was also staggeringly high. These findings are in line with the findings of NCD Risk Survey 2010 in Bangladesh and GATS Survey 2009, where the overall proportion of the smokeless tobacco user was 43.3% (men 26.4% and women 28%).¹³ Smokeless tobacco traditionally has not been incriminated for its harmful health effect in Bangladesh. Presently it is considered to have an equal potential to impair health and can lead to develop chronic diseases.

None of the respondents used to take recommended intake of fruits and vegetables which is a matter of great concern. However, the majority of the respondents used to have at least 1 serving of fruits and vegetables per day in a usual week. These findings are comparable with national NCD Risk Survey 2010 data where the mean intake (in combination of fruit and vegetable) was 2 servings per day and only 4.5% of the population consumed 5 or more servings of either fruits or vegetables per day.¹³ The reasons of taking inadequate fruits and vegetables might be that the respondents were not aware of the importance taking enough fruits and vegetables in the prevention of non-communicable diseases. More than half of the respondents were used to using extra table salt which is similar to the WHO country report about extra table salt intake.¹⁴

The present study revealed that over one-quarter (27.4%) complied with recommended physical exercise (minimum 30 min of physical exercise for at least 5 days a week). A study in UK (Parliamentary Office of Science and Technology, London, UK, 2001) reported a higher

frequency of women (37%) to practice recommended physical exercise¹⁷ than that practised by our women. The proportion of overweight and obese among the respondents was 35.9% and 15.7% respectively.

A study conducted in Bangladesh to analyse the trend of overweight/obesity between 1996-2006 found that it increased from 2.7% in 1996 to 8.9% in 2006.¹⁵ The overweight/obesity data of the present study is much higher than the findings of national NCD risk survey of recent time, where the proportion of overweight and obesity were 14.3% and 3.6% (together constituted 17.6%).¹⁶ This might be partly due to increasing trend of overweight and obesity and partly due to small sample size and inclusion of sample from Metropolitan hospitals which are not representative of national population. About 26.4% of the respondents were hypertensive with mean SBP and DBP being $118(\pm 22.0)$ and $77(\pm 12.5)$ mmHg. The mean SBP and DBP are consistent with other studies done in our country but showed comparatively high prevalence of hypertension.^{13,17}

CONCLUSION

The present study concluded that though women of reproductive age were rarely habituated to smoking, a sizable proportion (every 1 in 16) them was used to consuming smokeless tobacco. The women in general took inadequate fruits and vegetables. The tendency of taking extra table salt was staggeringly high and taking fast food, street food, fatty-food etc. are also commendable.

Only one in three women took recommended physical exercise. The rapidly increasing trend of overweight and obesity might be due to sedentary life-style with increased consumption fatty-food and less intake of fruits and vegetables.

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