Dietary Behavior of Pregnant and Lactating Women of Bandarban Hill District, Bangladesh

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ABSTRACT

Background: The Chittagong Hill Tracts (CHT) is the least developed in all aspects of life and livelihoods in comparison with other parts of Bangladesh. People of this area suffer from extreme poverty due to different natural and man-made disasters resulting in increasing vulnerability, food insecurity and malnutrition, particularly for women, youth and children. In CHT, Bandarban district has a high proportion of people living in extreme poverty, combined with high rates of stunting, under-nutrition and food insecurity along with maternal under-nutrition, low birth weight, preterm birth, maternal anemia. The dietary behavior of the people living here is a major factor of these nutritional disasters. Thus, this study was conducted to assess the dietary behavior of selected pregnant/ lactating women from different sub-districts of Bandarban hill district.

Method: A cross sectional study was conducted from September 2018 to December 2018 at Lama & Rowangchori sub-districts of Bandarban hill district with participation of 126 pregnant women and lactating mothers. For the study, those were selected who were in their early pregnancy or lactation stage by simple random sampling.

Findings: The study findings show that 34% respondents consume 3 or less food groups, 29% respondents consume 4 food groups, 25% respondents consume 5 food groups, 7% respondents consume 6 food groups and 5% respondents consume 7 or more food groups. The study also found significant relationship among the dietary diversity with the respondent's income, household size and the level of education of the respondents

Conclusion: As dietary behavior is a major factor to trigger good nutritional status, thus it can be concluded that awareness and nutrition education programme implementation in the Bandarban hill district area can help to achieve favorable dietary behavior of the pregnant and lactating women as well as good nutritional status.

Keywords: Pregnant and lactating women; Dietary diversity; Food frequency

INTRODUCTION

Poverty, malnutrition and food insecurity are widespread concerns in Bangladesh, particularly in rural areas. According to Shiree report, there are more than 200,000 households nationally that are extremely poor with limited assets and low income earning capacity. These households are often food-insecure and have limited dietary diversity [1]. Malnutrition is prevalent, and children born in this group tend to be malnourished throughout their childhood and into adulthood; creating an environment for malnutrition and continued poverty for their offspring thus ensuring a cycle of malnutrition and poverty. Pregnant women, often on the advice of their mothers-in-law, may reduce their food intake when pregnant in an attempt to have a small baby with the belief that this will lead to a safe birth [1].

In addition, young children are often initially fed thin rice gruel and not introduced to more nutritious foods until after one year of age [1]. These practices and beliefs lead to limited dietary diversity and low frequency of consumption of protein-rich, animal-source foods by pregnant and lactating women (PLW) and young children. The Chittagong Hill Tracts (CHT) is recognized as the least developed in almost all aspects of life and livelihoods compared to other areas of Bangladesh. The people of CHT suffer from extreme poverty due to a variety of interlinked factors, including man-made and natural disaster [2]. These altogether resulted in increasing

vulnerability, food insecurity and malnutrition, particularly for women, youth and children. This has pushed the people changing their environmentally friendly traditional agricultural practices for survival which has led the loss of forest areas and subsequently increased environmental degradation, increasing soil erosion, landslides and loss of productive resources and assets [2].

Different GOs and NGOs are working in this area for the improvement of agriculture, production, nutrition status etc. of the deprived people. Bandarban district has a high proportion of people living in extreme poverty, combined with high rates of stunting, under-nutrition and food insecurity. Maternal under-nutrition increases the risk of intrauterine growth retardation, low birth weight, and preterm birth, carrying over its negative effects into the next generation [2]. This study was conducted to assess the dietary behavior of selected pregnant/lactating women from different sub-districts of Bandarban hill district of Bangladesh.

RESEARCH METHODOLOGY

Study design and period

It was a cross sectional study conducted from September 2018 to December 2018. The study area was Lama & Rowangchori sub-district of Bandarban hill district.

Study sample

A total of 126 mothers were selected for the study purpose. The sample size was calculated by using appropriate statistical formula ($n= z^2pq/d^2$). The sample size was calculated in 95% confidence interval and with 5% level of significance. The assumed proportion of the target population was 91%. The mothers were selected by simple random sampling and those were selected who were in their early pregnancy stage or early lactation period.

Data collection procedure, data processing and quality assurance

Quantitative study method was followed for this study and the data quality was ensured through multiple procedures of review and cross-checking. Data entry was done concurrently with data collection. Any discrepancies identified were checked visually by comparing the electronic entry to the entry on the original questionnaire and if required, necessary corrections were made.

Data analysis

Food consumption patterns of the households were determined by collecting information on the number of days the household consumed a series of food items during the week prior to data collection. Based on the nutritional importance of the food groups, they were assigned weights. Food consumed at household level during last 24-hours (day and night) was categorized into 12 food groups of which a combination of food groups was needed to be consumed on a daily basis to have nutritionally balanced diet. For each food group, the frequency or the number of days an item of food group was consumed is tabulated by 0 (not eaten) or 1 (eaten). The Household Diversity Score (HDDS) was determined based on the score (between 0 and 15) achieved by the household for last 24-hours (day and night) [3].

Ethical considerations

Before conducting the study, ethical clearance was obtained from Faculty of Allied Health Sciences Research Ethics Committee of Daffodil International University and verbal Informed consent was taken from study participants before data collection. Anonymity and confidentiality were maintained strictly.

RESULTS AND FINDINGS

Socio-economic characteristics of the respondents

The findings from this study shows that 53% respondents were pregnant women and the rest were lactating mothers. More than half (51%) of the respondents were belongs to Bengali community and the rest were from ethnic community. 20% respondents were aged below 20 years, 11% respondent's age were within 21 to 30 years and the rest 69% respondents were aged over 30 years. 31% respondent's household monthly income was less than BDT 5000 which was considered as extreme poor, 51% respondent's household monthly income was in between BDT 5,000 to BDT 10,000 which was considered as poor, 18% respondent's household's monthly income was in between BDT 10,000 to BDT 15,000 which was considered medium level income. 4% respondent's household had less than 4 members, 77% had 4 to 6 persons and the rest 19% household consisted more than 6 members. The educational status of the respondents showed that 31% respondents were illiterate, 33% respondents had completed their primary education, 18% passed SSC and the rest (Table 1).

Dietary diversity of the respondents

Household income has large impact on the dietary diversity. Income of the household has positive and significant impact on the dietary diversity of a family. To calculate the dietary diversity, food items were allocated into 9 food groups [4]. Those are grouped below:

1) Cereals (rice, wheat, potatoes, sweet potatoes, maize etc.)

2) Pulses, legumes, nuts and seeds

3) Vegetables

4) Fruits

5) Fish, meat and eggs

6) Dairy and dairy products

7) Oils and fats

8) Sugar

9) Spices and condiments.

The consumption from different food groups was assesses based on these 9 food groups. Result shows that, consumption of 5 or more food groups is higher in household with medium income compared to low-income households. Family size also has an impact on the dietary diversity of the women. Distribution of respondent's dietary diversity shows that distribution of respondent's dietary diversity. Result shows that 34% respondents consume 3 or less food groups, 29% respondents consume 4 food groups, 25% respondents consume 5 food groups, 7% respondents consume 6 food groups and 5% respondents consume 7 or more food groups (Figure 1).

Table 1: Socio-demographic status of the selected respondents.

Socio-demographic status	Frequency (n)	Percentage (%)
Respondent category		
Pregnant	67	53.0
Lactating	59	47.0
Total	126	100.0
Respondent's community		
Bengali	64	51.0
Ethnic (Non-Bengali)	62	49.0
Total	126	100.0
Age category		
<20 years	25	20.0
20-30 years	87	69.0
>30 years	14	11.0
Total	126	100.0
Household monthly income		
Extreme poor (<BDT 5,000)	39	31.0
Poor (BDT 5,000-BDT 10,000)	64	51.0
Medium (>BDT 10,000 & <BDT 15,000)	23	18.0
Total	126	100.0
Household size		
<4	5	4.0
4 to 6	97	77.0
>6	24	19.0
Total	126	100.0
Respondent's educational status		
Illiterate	39	31.0
Primary	42	33.0
SSC	23	18.0
More than SSC	23	18.0
Total	126	100.0
Respondent's husband's education		
Illiterate	30	24.0
Primary	50	40.0
SSC	26	21.0
More than SSC	19	15.0
Total	126	100.0

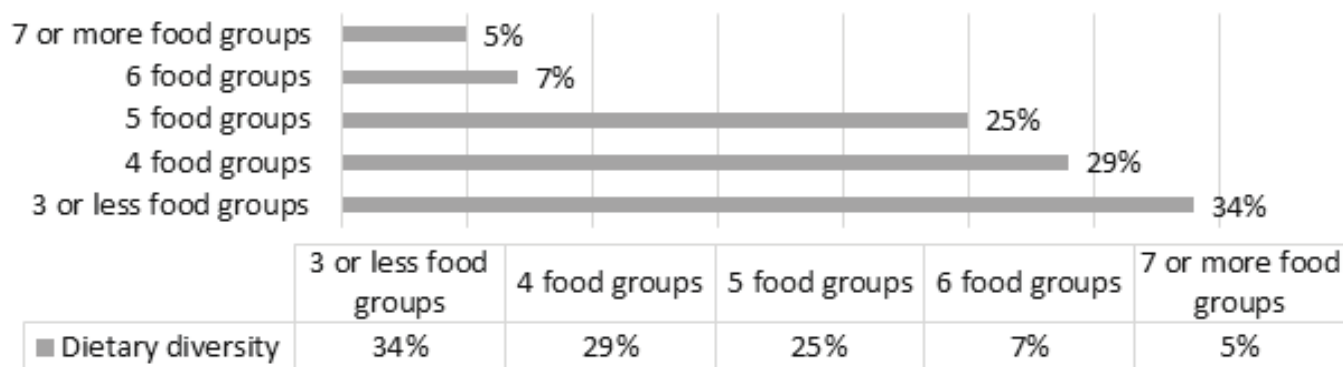|	3 or less food groups	4 food groups	5 food groups	6 food groups	7 or more food groups
Dietary diversity	34%	29%	25%	7%	5%

Figure 1: Dietary diversity.

Food frequency of the respondents

Food frequency pattern of previous 7 days shows favorable results. Almost all the participants consumed fish, vegetables and dal every day. Consumption of fruits, small fish, meat and large/marine fishes are also very high among the selected respondents. On the other side, the consumption of milk and dry fish is very low in both Bengali and ethnic community. All the respondents from ethnic community found to consume "Nappi" (A locally available fermented fish paste) every day with each meal (Figure 2).

DISCUSSION

This cross-sectional study was conducted with the pregnant and lactating women of Bandarban hill districts. To our knowledge, this is the first time; an investigation was done to identify the dietary behavior of the pregnant and lactating women in any hill district of Bangladesh. Healthy dietary behavior is the key to achieve better nutritional status. It is also important to gain stability of health. Sensitivity towards culture along with affordability of

diversified food items should also be available for pregnant and lactating women to consume for a healthy and well-nourished future generation [5]. The present study indicates that a significant number of PLWs are eating less diversified diet. Which is very much similar to the nation data of FSNSP 2015 report which showed that nationally two third (66%) of women consumed inadequately diversified diets. According to the report, it was also found that, the women of wealthier family consumed adequate diet compared to the poor family [6]. These findings from FSNSP-2015 report are also very much similar to this study [7-13].

The present study shows that there is significant relationship among the dietary diversity with the respondent's income, household size and the level of education of the respondents (Table 2). The findings show that, respondents who have better household monthly income had good dietary diversity compared to the less earning families. Similarly, it was also found that, the households with less family members had consumed more diversified diet. Literacy has also significant influence towards the dietary diversity
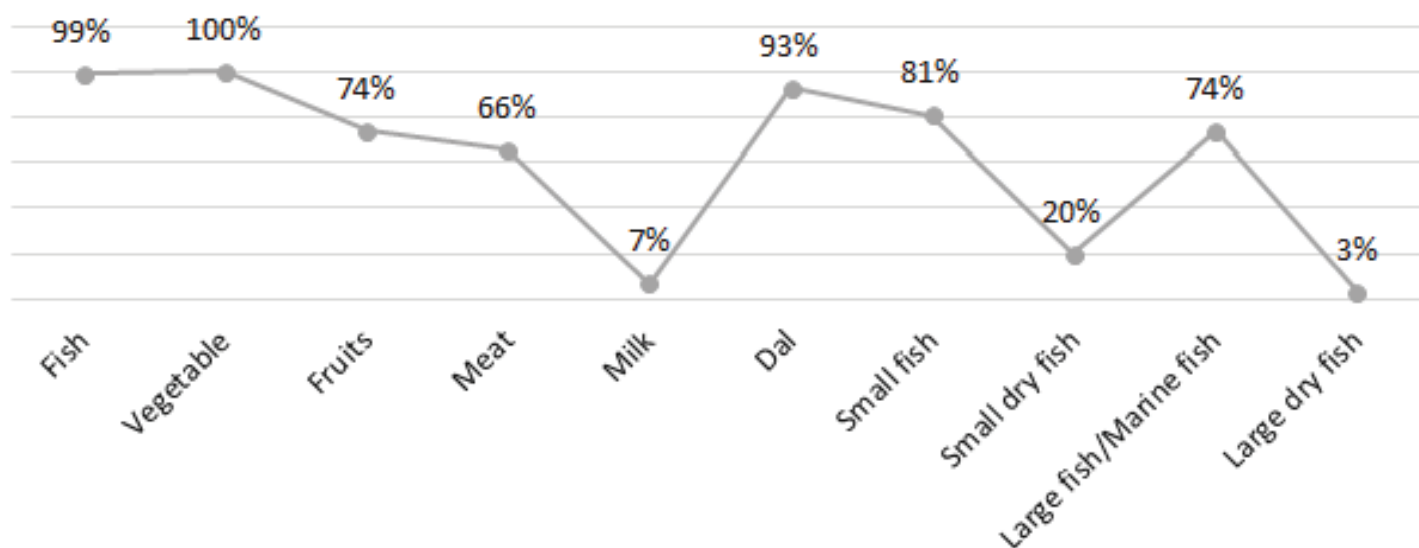

Figure 2: Frequency of types of food for last 7 days.

Table 2: Association of dietary diversity with the socio-economic status of the respondents.

Socio-economic variables	Dietary diversity					P value
	7 or more food groups	6 food groups	5 food groups	4 food groups	3 or less food groups	
Monthly household income						
Extreme poor (< BDT 5,000)	0	1	1	14	23	
Poor (BDT 5,000 -BDT 10,000)	2	3	18	22	19	0.023
Medium (>BDT 10,000 & <BDT 15,000)	4	5	13	1	0	
Household size						
<4	3	1	1	0	0	
4 to 6	1	7	28	31	30	0.011
>6	2	1	3	6	12	
Respondent's level of education						
Illiterate	1	1	3	15	19	
Primary	1	1	5	16	19	0.031
SSC	2	2	12	4	3	
More than SSC	2	5	12	2	1	

of the respondents. The finding also shows that the more educated respondents have better dietary diversity [6].

Limitation of the study

Small number of sample size and failure to assess the nutrient consumption.

CONCLUSION

In this study, it was attempted to assess the dietary behavior of the pregnant and lactating women resided in Bandarban hill district. The findings of the study indicated the dietary diversity of the respondents was greatly influenced by the household monthly income that indicates that higher income triggers the intake of diversified diet. Thus it can be concluded by saying that implementing awareness and nutrition education programme in the Bandarban hill district area can help to modify the dietary behavior of the pregnant and lactating women as well as the community.

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