Original Research Article

A Comparative Study on The Diet Quality of Pregnant Women in Urban and Rural Settings in A South-Western District of Bangladesh

Abstract

Purpose: The current study aimed to assess the diet quality of urban and rural pregnant women in a south-western district (Jashore) in Bangladesh.

Methodology: It was a cross-sectional study which was conducted among pregnant women (Sample size, N= 154). The respondents were selected from urban and rural areas of Jashore district. Data was collected through a pre-tested questionnaire comprising of socio-demographic and economic data, data on different food groups consumption. The data concerning food consumption was used to assess the diet quality of the respondents. For statistical analysis, IBM SPSS Statistics version 21.0 was used in the study.

Results: Among all the respondents, mean Dietary Diversity Score (DDS) was 5.40±0.96. It was also seen that minimum DDS was 3.0 and maximum DDS was 7.0 among all the pregnant women. Significant difference was observed between the mean DDS of urban and rural pregnant women ($P < .05$). The mean DDS of urban pregnant women was 6.46±0.19 and mean DDS of rural pregnant women was 4.61±0.56. Moreover, about 62% urban respondents' diet quality was of high level, 27% urban respondents' diet was of medium quality and about 11% urban respondents were found to have low diet quality. On the other hand, only 18% rural respondents had high diet quality, 57% had medium quality diet and about 25% of rural pregnant women were found to have low diet quality.

Conclusion: It can be concluded from the study that majority of the urban pregnant women of the study area had higher quality diet than their rural counterparts.

INTRODUCTION

Inadequate nutrition during gestational period acts as a risk factor for adverse materno-fetal outcomes [1]. The nutritional requirement is escalated during this period due to maternal tissue growth and fetal growth [2]. High diet quality and sufficient nutrient consumption ensure adequate nutrition during gestation [3]. A high quality diet means diet comprising of different food groups which may ensure consumption of all the required micronutrients. A tedious diet may impede the supply of significant micronutrients which may consequently lead to hidden hunger [4]. Therefore, having a more diversified diet is a must for a pregnant woman.

Micronutrient intake and dietary behavior may differ by demographic characteristics, psychosocial characteristics, race, ethnicity etc.[5,6]. The dietary pattern is measured at two levels: household level and individual level. Nutrient adequacy of individual diet has been found to be reflected by Individual Dietary Diversity (IDD) [7]. Various studies have been found to validate the use of IDDS in this regard [8-10]. IDDS may function as an indicator of nutrient adequacy that is diet quality [11-12]. By combining several food groups, Women Dietary Diversity Score (WDDS) ranging from 0 to 9 is derived to measure the diet quality of women [7]. Pregnant women diet quality is of great importance since gestational weight gain and

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pregnancy outcome are associated with diet quality [13-14]. The present study was designed to figure out the association between residence area and diet quality of pregnant women.

Methodology

Study area, study design and study period: The cross-sectional study was directed in a south-western district called Jashore in Bangladesh. Since Jashore is an emerging urban area it was found to be fit for a comparative study between urban and rural area. The duration of the study was four months, starting in November 2019 and ended in February 2020.

Sampling Method and Sample Size: Simple random sampling method was used to select 154 pregnant women from Jashore district. About 77 women were selected for the study from each setting. Respondents were selected from four areas named: Chaugacha, Sadar, Sharsha and Jhikargacha. Only the second and third trimester pregnant women were included in the study aged between 15 to 35 years.

Data Collection: A questionnaire was carefully designed for the study followed by a pilot survey in a similar area to finalize usefulness of the questionnaire. Women Dietary diversity was measured by using the dietary diversity questionnaire designed by FAO but the questionnaire was modified and translated in local languages for more usefulness in the field. Several food groups were combined to construct nine foods to assess the diet quality of the respondents.

Data Analysis: All types of statistical analysis were completed by a statistical software, IBM SPSS Statistics version 21.0. Various statistical tools were used such as descriptive statistics, chi-square test, independent samples t-test etc.

RESULTS

Sociodemographic and economic characteristics of the respondents

Table 1 illustrates various socio-demographic and economic characteristics of the respondents by their residence area type. Most of the respondents were Muslim both in urban and rural area. About 77% of urban Pregnant women (PW) were housewife and almost 99% of the rural PW were housewife. About 21% of the urban PW were wage earner, whereas, only 1% rural PW were found as wage earner. Significant association was found between occupation of the PW and their residence area type ($P<.05$). In case of husbands' occupation, almost all of the urban husbands were involved in some kind of business or they were wage earner. On the other hand, in the rural area, most of the husbands were driver or farmer. Only about 12% of rural husbands were involved in business. Significant association was also found between occupation of the husbands and their residence area type ($P<.05$). About 33% urban PW obtained HSC, 47% obtained Honors degree and 21% obtained MS degree. No respondents were below HSC level among the urban respondents but about 65% of the rural respondents were SSC passed or below SSC. Only about 1% rural respondents obtained Honors degree and only about 3% obtained MS degree. The association

Table 1: Sociodemographic and economic characteristics of the respondents by type of residence area

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Socio-demographic and economic characteristics	Area Type		P- value
	Urban (%)	Rural (%)	
Religion			
Islam	96.1	98.7	**.31**
Hindu	3.9	1.3	
Occupation of PW			
housewife	76.6	98.7	**< .05**
business	2.6%	0.0	
wage earner	20.8	1.3	
Occupation of husband			
business	20.8	11.7	**< .05**
wage earner	79.2	2.6	
Others (driver, agriculture)	0.0	86.7	
Educational status of PW			
Less than or equal to SSC	0.0	64.9	**< .05**
HSC	32.5	31.2	
Honors	46.8	1.3	
Masters	20.8	2.6	
Educational status of husband			
Less than or equal to HSC	0.0	90.9	**< .05**
Honors	32.5	7.8	
Masters	67.5	1.3	
Age of PW (in years)			
15-19	0.0	10.4	**< .05**
20-25	37.7	71.4	
26-30	44.2	15.6	
31-35	18.2	2.6	
Age at marriage (in years)			
≤ 19	3.9	58.4	**< .05**
20-25	75.3	40.3	
26-35	20.8	1.3	
Monthly household income (in BDT)			
5000- 15000	0.0	93.5	**< .05**
15001-25000	40.3	6.5	
>25000	59.7	0.0	

N.B: PW= Pregnant women, SSC= Secondary School Certificate, HSC= Higher Secondary School Certificate, BDT= Bangladeshi Taka, P-value was obtained from chi-square test

between the educational status of the PW, educational status of the husbands and area type were found statistically significant (P<.05). No adolescent pregnant women were found among the urban respondents, whereas, 10% rural PW were adolescent. Among the urban respondents, only 4% mother was found to be married at younger age (≤ 19 years of age). On the other hand, 58% of rural respondents got married at adolescent stage. The association between area type and age at marriage was found to be statistically significant (P<.05). About 94% of rural households' income was between five thousand and fifteen thousand Taka, whereas, no urban household was found with monthly household income below fifteen thousand Taka. About 40% urban households' income was above fifteen thousand to twenty-five thousand Taka and 60% of urban households' monthly income was above twenty-five thousand Taka. On the other hand, among

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rural households, no household was found with monthly income above twenty-five thousand Taka.

Diet quality of pregnant women by area

Diet quality of the respondents were calculated by combining the scores assigned to each of the nine food groups, which may range from 0 to 9. Among all the respondents, mean DDS was 5.40±0.96. It was also seen that minimum DDS was 3.0 and maximum DDS was 7.0 among all the pregnant women. Figure 1 shows that the mean DDS of urban pregnant women was 6.46±0.19 and mean DDS of rural pregnant women was 4.61±0.56. The mean DDS of two groups was compared by independent samples t-test and significant difference was observed between the mean DDS of urban and rural pregnant women ($P < .05$).

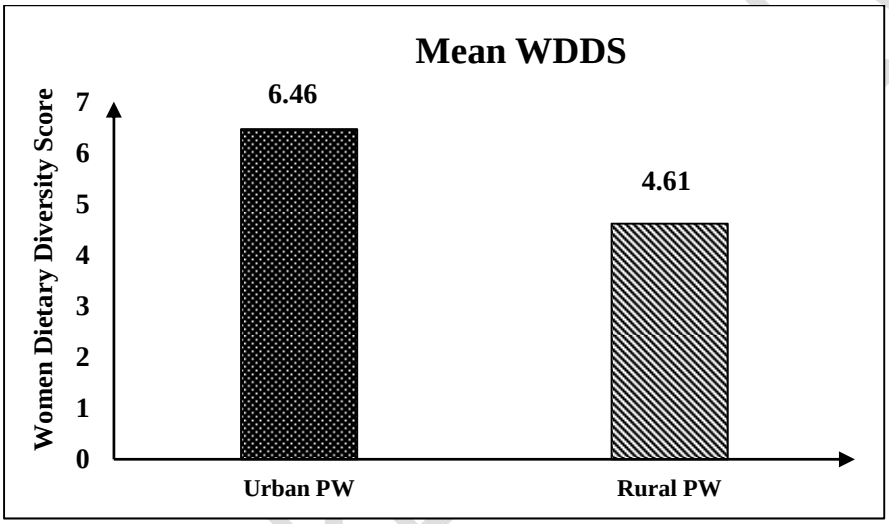

Figure 1: Mean WDDS comparison between urban and rural PW (P<.05)

Figure 2 depicts the diet quality of the respondents. High dietary diversity (high DD) in the figure indicates that the respondents had six or more food groups among the nine foods which were used in the questionnaire to measure the dietary pattern of the respondents, medium dietary diversity (medium DD) indicates diet comprising of four to five food groups and low dietary diversity (low DD) indicates diet comprising of three or less than three food groups. It can be seen from the figure below that 62% of the urban PW had high DD and only about 18% rural PW had high DD. Only 27% urban PW had medium DD but this percentage was quite high among the rural counterparts, about 57%. Low DD was also found higher among the rural PW (25%) than their urban counterparts (11%).

DISCUSSION

In this study, only about 4% urban respondents got married at the age of below 19 years, on the other hand, about 58% of rural respondents got married by this age, whereas, a national survey of Bangladesh [15] showed that only 16% women got married at this stage. Low diet quality may

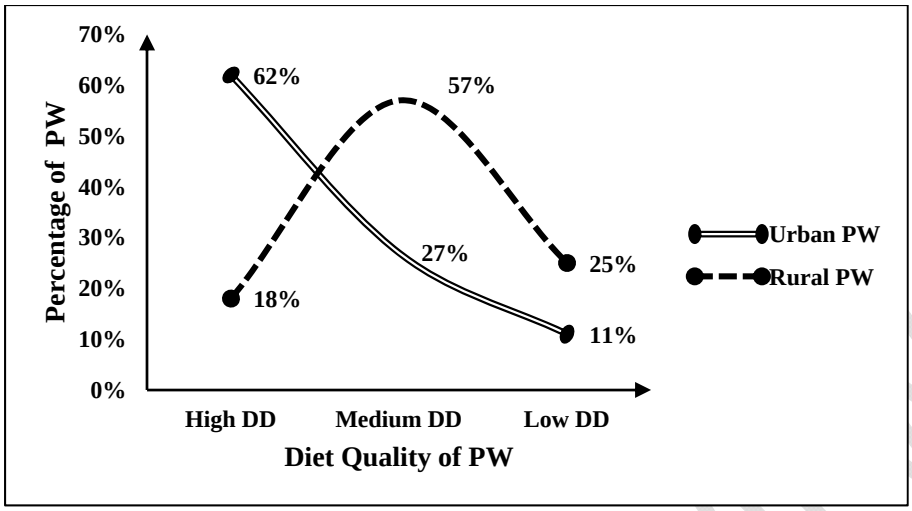

Figure 2: Diet quality of urban and rural pregnant women

Paves the way to micronutrient deficits since it reflects the probable lower intake of micronutrients. In the current study, DDS was used to determine the diet quality of the respondents. A study directed on the mothers' DDS in Bangladesh [16] reported that mean DDS of the respondents was 4.02, but in our study, the mean DDS was 5.40 concerning all the respondents. The score was found higher among the urban PW (6.46) than that of rural (4.61). The minimum DDS found in our study was 3 and maximum DDS was 7. Tiwari *et al* (2013) found that minimum score was 1 and maximum score was 9.

According to the current study, it ca be concluded that urban PW had had higher diet quality than rural PW and most of the rural PW had medium diet quality. This difference in diet quality among the two settings might be due to higher access of variety of foods in the market and also increased purchasing capacity of the urban residents. However, further research on the factors responsible for higher diet quality of pregnant women is encouraged by the authors.

Conflict of interest

The authors declare no conflict of interest.

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