



Assessment of Socioeconomic Status, Empowerment Level and Food Intake Pattern of Ethnic Women

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ABSTRACT

Objective: To assess socioeconomic status, empowerment level, and habitual food intake pattern among ethnic women living in the north-west part of Bangladesh. **Design:** An observational study. **Settings:** Ethnic women of two selected districts (Dinajpur and Joypurhat). **Subjects:** 106 females at their reproductive age (15-49 years) were selected in the study. **Methodology:** Information on socio-demographic characteristics, women's empowerment indicators in agricultural index, food frequency patterns were collected during interviewing the women. A food frequency questionnaire (FFQ) was used to assess the habitual intake of dietary patterns. **Results:** Results revealed that almost all the ethnic women were over 19 years old in which the mothers were the dominant groups (62.2%). The secondary schooling rate (27.3%) was higher among the mothers although their illiteracy rate (36.7%) was widespread for all ethnic women. Income strata between two districts showed that their mean monthly incomes (4418 ± 397.49 TK. and 5347.72 ± 743.21 TK. for Dinajpur and Joypurhat district respectively) were below the national income level and households from both districts spent their major proportion of income (mean; 1592.95 ± 98.13 TK.) for purchasing the food items. The rate of women empowerment was very low for all five domains, and particularly 33% of women had less decision power over the use of income domain. Further, the food frequency questionnaire (FFQ) showed that the entire studied women consumed rice daily, and almost all of the studied women (94%) did not consume wheat flour. Around 90% of women consumed dark green leafy vegetables between 1-2 days per week and half of the women consumed vitamin-A rich fruits and vegetables on average two days per week. **Conclusion:** The current observational study provides a piece of important information of ethnic women of the north-west part of Bangladesh, who were socioeconomically poor, less empowered and consumed inadequate nutrient-dense foods.

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1. Introduction

Bangladesh is the land to many ethnic or indigenous people. Approximately, 2 million tribal is living in Bangladesh consisting of mainly hilly and plain tribal. The tribal from hilly areas mainly reside in the south-east parts, whereas the plain tribes belong to north-west parts of Rajshahi and Rangpur divisions (FTPP, 2017). The indigenous peoples of the plains regions were estimated to number about 1,036,060. Among them, the Santal are the most numerous, constituting almost 92 percent of the indigenous population of the plain tribal (ADB, 2011).

The Indigenous communities of Bangladesh have distinctive ways of living in which most of the communities draw their income from regular agriculture. However, the socio-economic status of most indigenous communities in the plains is known generally to be even worse than that of indigenous communities in the hilly. According to Roy (2012), poverty status and overall socio-economic situation of north-west tribal peoples are acutely disadvantaged compared with the rest of the country. Generally, they face discrimination, and many suffer from ill-health, bad nutritional conditions, and less empowerment. Besides, many

tribal are being dispossessed of their lands and only receiving nominal compensation. Moreover, many instances of land grabbing are accompanied by false cases against the dispossessed, as well as physical intimidation and harassment, but few affected people are able to obtain reimbursement. Samad (2006) reported that almost 92 percent of ethnic communities of the north-west region of Bangladesh, did not have recognizable access to education and income although they have a very long history of engaging in farming.

Mullah *et al.*, 2007 reported that tribal groups have their own traditions and customs, agriculture productions and food patterns, social structure and other interesting social practices in which women play a central role in their mainstream. Bellotti (2014) reported that women could play important roles in the sectors of social, economic and food-agriculture development collectively referred to as 'trans-disciplinary' sectors. Besides, they play a central role in family nutrition, carry unborn children, breastfeed newborns, prepare family meals, grow nutrient-dense foods (especially vegetables, fruit, and small livestock) and generate cash incomes. According to the Women's Empowerment in Agriculture Index (WEAI),

only 24% of Bangladeshi women were the least empowered compared to other countries in Asia and Africa. In particular, the Rangpur and Rajshahi divisions represented only 22% and 29% of empowered women respectively (Malapit *et al.*, 2014). The reasons for these low rates of empowered women could be due to their multifarious social problems ranging from moderate to severe poverty, less access to social and economic empowerment, and a considerable degree of malnutrition. The situations are even notable for ethnic or tribal women since they are the most vulnerable groups among the others (Shanon *et al.*, 2008).

To date, information regarding northern ethnic or tribal women's empowerment in the field of trans-disciplinary approach is still unclear or absent. It is hypothesized that less social and economic access and weak leaderships to ethnic women in the multidimensional sectors make them nutritionally at-risk groups due to their inadequate access to food and agriculture. As a consequence, because of less diversified foods, women of reproductive age are more susceptible to maternal malnutrition or micronutrient deficiency (Becquey, Capon, & Martin-Prével, 2009). It is hypothesized that research on the socio-economic situations, empowerment levels, and their habitual food intake or dietary pattern for may provide important information of ethnic women may support the underlying gaps among the transdisciplinary sectors steps behind for the ethnic or tribal women. Therefore, the current observational study assessed the socioeconomic profiles, empowerment level and food intake pattern of ethnic women living in two northwest districts of Bangladesh.

2. Methodology

2.1. Study location

The study was conducted at five selective villages located in two districts (Dinajpur and Joyourhat) of Bangladesh. The villages are as follows: Betdighi, Aladipur (Fhulbari sub-district) and Khanpur (Birampur sub-district) in Dinajpur district and Bhadsa and Mohammadabad in Joypurhat district. Generally, the villages are far away from the town and all the modern facilities such as electricity, health facility, transportation are limited to the ethnic peoples. Typical and seasonal agricultural works are the most common livelihood among them. Annual food shortage is common during the pre-harvest period when job opportunities are scarce.

2.2. Study design and samples size

The study was an observational study. One hundred and six females (106) at their reproductive ages (15-49) were

selected purposively. The sample size was calculated according to the description as already mentioned in our previous study (Mozumder *et al.*, 2017).

2.3. Data collection

The data were collected from July 2015 to March 2016. For data collection, a structured questionnaire was developed, standardized, and pretested with the help of professionals through a day-long workshop to elicit information from the study subjects. The efficiency and discrepancy in the methodology and questionnaire were evaluated by conducting a pilot study and corrected thereafter. Information including demographic, socioeconomic, women's empowerment level, and food frequency were collected from the ethnic women.

2.4. Statistical Analysis

The field data was first compiled with MS Excel 2016 and then statistically analyzed using IBM SPSS version 20. All the values were demonstrated with mean with standard deviations (mean \pm SD).

3. Results and Discussion

3.1 Socio-Economic Information

The descriptive statistics about the socio-economic characteristics of the studied ethnic women by their physiological status are presented in Table 3.1. According to the physiological status of women, the distribution of women in both districts (46.2% in Dinajpur and 53.8% in Joypurhat) followed a similar pattern except for pregnant women who were absent in the Dinajpur district. Interestingly, almost all of the ethnic women were over 19 years old (95.3%) in which the mothers/caregivers were the dominant groups (62.2%) followed by the non-pregnant non-lactating women (NPNL); 19.8%.

Regarding the education level among ethnic women, the rate of primary (16%) and secondary (39.6%) schooling showed the highest levels although their illiterate levels were substantially higher (36.7%) and above the rates reported by Bangladesh Demographic and Health Survey (BDHS, 2014) in which 24.9% of women were illiterate together with 18% of women were up to the primary level and 31.5% of women were taught up to the secondary level. Furthermore, Samad (2006) stated that education is the main obstacle for the advancement of tribal women, especially for Santals. He also postulated that Santals women are enthusiastic to be educated for improving their socio-economic condition; however, financial inability is the main obstacle for education and as a consequence, most of the students cannot do well in the examination and the majority of them come out with third division at S.S.C and H.S.C levels. Therefore, the low literacy

Table 3.1. Socio-economic characteristics of ethnic women by physiological status.

Characteristics	NPNL women	Lactating mother	Pregnant women	Mother/ caregiver	Total (n = 106)
No. of women					
Dinajpur	10 (9.4)	6 (5.6)	0 (0.0)	33 (31.1)	49 (46.2)
Joypurhat	14 (13.2)	8 (7.5)	2 (1.8)	33 (31.13)	57 (53.8)
Age					
< 19 years	3 (2.83)	2 (1.88)	0 (0.0)	0 (0.0)	5 (4.7)
> 19 years	21(19.8)	12 (11.32)	2 (1.8)	66 (62.2)	101 (95.3)
Education					
Illiterate	12 (11.3)	3 (2.8)	0 (0.0)	24 (22.6)	39 (36.7)
Primary	6 (5.6)	1 (0.9)	1 (0.9)	9 (8.4)	17 (16.0)
Secondary	4 (3.7)	7 (6.6)	1 (0.9)	29 (27.3)	42 (39.6)
Higher secondary	1 (0.9)	2 (1.8)	0 (0.0)	1 (0.9)	3 (3.8)
Others	1 (0.9)	1 (0.9)	0 (0.0)	3 (2.8)	5 (4.7)
Occupation					
Housewife	14 (13.2)	14 (13.2)	1 (0.9)	58 (54.7)	87 (82.0)
Day laborer	4 (3.7)	0 (0.0)	0 (0.0)	7 (6.6)	11 (10.3)
Farm worker	1 (0.9)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.06)
Non-farm worker and others	5 (4.7)	0 (0.0)	1 (0.9)	1 (0.9)	7 (7.4)

rate found among ethnic women in the current study also might be due to poverty, ignorance of rights and status of women, lack of information and also awareness.

As shown in Table 3.1, the occupational status of ethnic women mainly attributed to housewives (82.0%) followed by day laborer (10.3%). Samad (2006) in his research also found that the entire ethnic people in the Northern areas, mainly the Santal community are dependent solely on agriculture and related works and only a negligible portion of them cultivated their own land. Others are involved in non-farm activities such as non-agricultural labor, small trade, and services.

The mean monthly income from different sources for ethnic households between the two districts was compared in Table 3.2. The mean total monthly income among the ethnic families was higher in Joypurhat district, (TK. 5347.72 \pm 743.21) compared to the mean monthly income from Dinajpur district, (TK. 4418.33 \pm 397.49). However, the mean monthly income levels at both districts were below the estimated national income level (TK.11479) and rural income level (TK. 9648) as reported by the Households Income and Expenditure Survey (HIES, 2010). Further, different income strata between two districts that demonstrated in Figure 3.1, explained that approximately 38% of ethnic households from Joypurhat had their highest income strata ranged from TK. 3000 to TK. 4999, whereas around 30% of ethnic families living at Dinajpur district had higher income levels ranging from TK. 1500-2999 TK. In response to ethnic households' low income, we may hypothesize that several factors could be responsible for the income differences between two districts such as livestock sales, day labor farming opportunities and small scale business or microcredits facilities (Table 3.2). Also, Mullah *et al.*, 2007 found that the probable reasons for low-income profiles are that tribal community mainly depends on agriculture and related works in which the majority of the households did not possess any cultivable land. In addition to these, occupation of higher skills and vocational training are almost absent among the tribal peoples, especially for ethnic women.

Similar to income sources between two districts, the mean monthly family expenditures derived from different sources were also represented in Table 3.3. The mean monthly expenditures of ethnic families living at Dinajpur districts were comparatively higher (TK. 4203.13 \pm 284.52) than the Joypurhat districts (TK. 4097.58 \pm 396.51) in which both districts spent their highest income for purchasing food

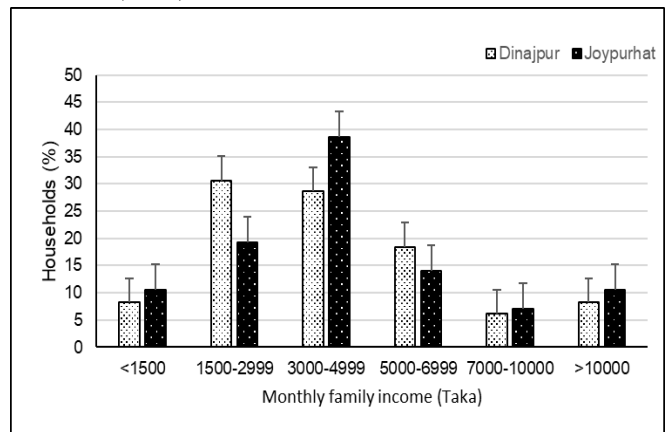


Figure 3.1. Distribution of all households in percent by monthly income strata.

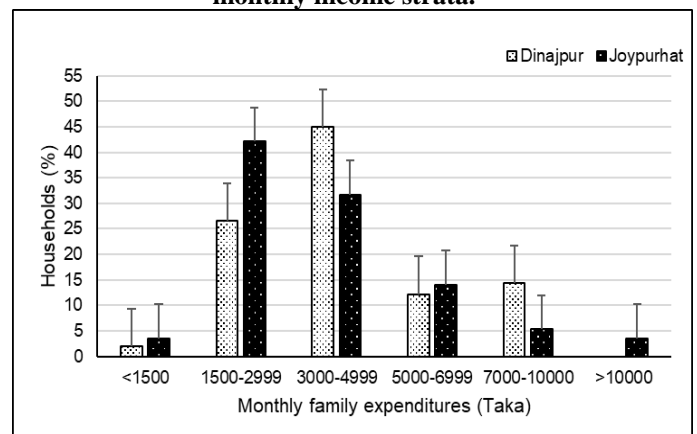


Figure 3.2: Distribution of all households in percent by monthly expenditures strata.

However, the households from Joypurhat district spent more income (TK. 1762.24 \pm 132.12) to purchase food items than those from the Dinajpur district which was TK. 1396.02 \pm 142.76 (Table 3.3 and Figures 3.3). Further, the distribution of monthly family expenditure as shown in Figure 3.2 illustrated that 45% of households in the Dinajpur district spent TK. 3000 to TK. 4999 compared to 42% of households living in the Joypurhat district who spent TK. 1500 to TK. 2999. Interestingly, there were no households of Dinajpur district who had monthly family expenditure greater than Tk.10000 except 3.5% households from Joypurhat district.

Table 3.2. Monthly income sources of ethnic households between two districts

Income source	Mean amount of income (Taka)		
	Dinajpur (n =49)	Joypurhat (n =57)	Total (n =106)
Field crop sales	873.69 \pm 196.78	829.61 \pm 271.82	849.96 \pm 171.40
Homestead vegetable sales	0.00 \pm 0.00	0.00 \pm 0.00	0.00 \pm 0.00
Livestock sales	548.28 \pm 125.19	877.61 \pm 193.49	725.38 \pm 119.60
Poultry sales	92.24 \pm 36.74	170.43 \pm 80.80	134.29 \pm 46.60
Day labour, farming	594.70 \pm 97.46	942.57 \pm 150.97	781.76 \pm 93.97
Day labour, fishing	20.40 \pm 20.40	17.54 \pm 17.54	18.86 \pm 13.27
Day labour, unskilled	81.63 \pm 71.93	75.43 \pm 70.27	78.30 \pm 50.10
Domestic work	0.00 \pm 0.00	17.54 \pm 17.54	9.43 \pm 9.43
Day labour, others	1000 \pm 258.87	707.01 \pm 190.64	842.45 \pm 157.44
Microfinance loan	841.10 \pm 263.99	1847.94 \pm 199.42	1006.44 \pm 162.34
Non-farm work	66.32 \pm 47.67	171.92 \pm 91.33	689.59 \pm 53.85
Small business	0.00 \pm 0.00	35.08 \pm 35.08	264.90 \pm 18.86
Others	300.00 \pm 139.62	370.00 \pm 275.85	337.36 \pm 161.100
Total	4418.33 \pm 397.49	5347.72 \pm 743.21	4918.10 \pm 440.28

Table 3.3: Monthly expenditures sources of ethnic households between two districts

Expenditure source	Mean amount of income (Taka)		
	Dinajpur (n =49)	Joypurhat (n =57)	Total (n =106)
Food	1396.02 ± 142.76	1762.24 ± 132.12	1592.95 ± 98.13
Poultry/livestock feed	72.60 ± 28.13	73.44 ± 14.45	73.05 ± 14.98
Agricultural services	1131.92 ± 171.59	839.80 ± 199.25	974.84 ± 133.45
Cooking fuel	139.28 ± 14.23	78.94 ± 11.02	106.83 ± 9.28
Utilities	33.46 ± 10.85	35.43 ± 13.74	34.52 ± 8.89
Microfinance/savings deposit	145.10 ± 72.23	191.56 ± 54.65	170.08 ± 44.32
Transportation	156.12 ± 28.73	178.28 ± 39.35	168.03 ± 50.10
Health care	377.75 ± 88.13	320.01 ± 86.95	346.70 ± 61.78
Clothing	519.62 ± 103.60	310.70 ± 49.80	407.27 ± 55.52
Leisure	132.04 ± 21.38	91.64 ± 18.36	110.32 ± 14.04
Hygiene and cleaning	141.15 ± 12.02	90.50 ± 7.52	113.92 ± 7.27
Others	48.57 ± 14.22	129.82 ± 71.63	92.26 ± 39.11
Total	4203.13 ± 284.52	4097.58 ± 396.51	4146.37 ± 249.44

The current study also evaluated the total land assets owned by ethnic households as an important economic indicator (Figure 3.4). The results depicted that most of the ethnic women's families possessed lands less than 5 decimals, consisting of 45.8% of households from Dinajpur district and 54.4% of households from Joypurhat district. These low amounts of land assets owned by ethnic households at both districts are one of the factors that contribute to poverty and low levels of living standards. Moreover, such a low amount of land assets owned by ethnic peoples are might be due to land grabbing. Roy (2012) already reported that many instances of land grabbing are accompanied by false cases against the dispossessed, as well as physical intimidation and harassment.

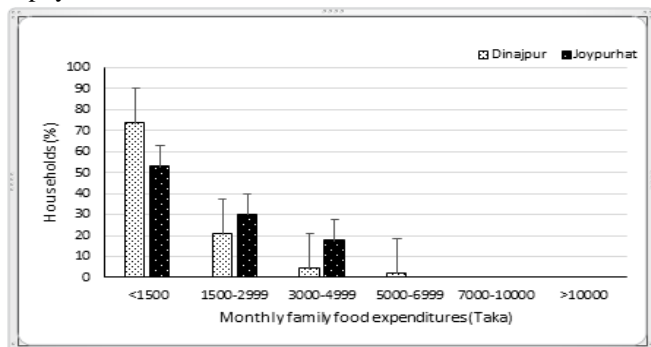


Figure 3.3. Distribution of all households in percent by monthly family food expenditures.

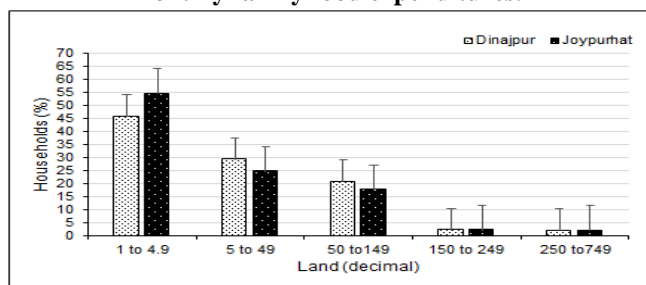


Figure 3.4. Distribution of all households in percent by land assets in decimal.

3.2. Women Empowerment

The women's empowerment levels among tribal women based on five domain approaches (5DE) were presented in Table 3.4. Generally, the 5DE approaches used 10 indicators as described in "Women Empowerment in Agricultural Index-WEAI" (Malapit *et al.*, 2014). Following WEAI principles, the present study also derived 10 indicators best suited for ethnic women in agriculture settings. Thus, the data as presented in Table 3.4 showed that only 24% of women gave the decision for agriculture production. In response to access the productive resources, a quarter of (25%) women had access to household savings, whereas only 7% gave a decision for purchasing food items. Moreover, 11% of women played their roles when there was a question to take credits.

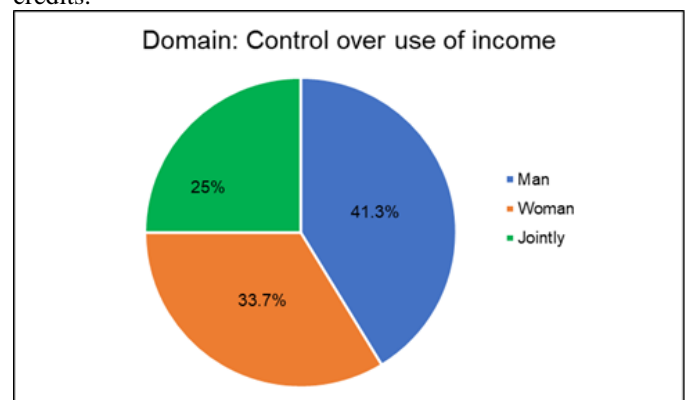


Figure 3.5. Percent distribution of income domain by gender.

Regarding the third domain that represented the control over the use of own income, 33% of women had the freedom to spend their income earned from own firm. The community leadership is the most important domain for rural women in which 61% of women sought training from rural organizations such as NGOs followed by 18% of women who had the opportunity to participate in community/group meetings such as focus group discussion (FGDs). Further, the domain for time allocation in leisure/ heavy workload, 60%

Table 3.4. Distribution of women empowered by five domain approach.

Five Domains Approach (5DE)	Indicator	No. of women (%)	Sample size
1. Decision making on agriculture production	Decision to grow vegetables	8 (24)	n = 33
2. Access to productive resources	Access household saving	25 (25)	n = 100
	Purchasing food items	7 (7)	n = 106
	Decide to take credit	10 (11)	n = 93
3. Control over use of income	Spent Income from own farm	31 (33)	n = 92
4. Community leadership	Community meeting participation	18 (18)	n = 100
	Seeking Training from institute	36 (61)	n = 59
	Consulting court	3 (4)	n = 71
5. Time allocation (leisure/ workload)	Child feeding/care	58 (60)	n = 96
	Seeking health care for child	28 (28)	n = 101

Table 3.5. Distribution of the total women (%) by consumption frequencies of food items.

No	Food Items	Consumption frequency(times/week)			
		0-<1 days	1-<3 days	3-<7 days	7 days
1	Rice	-	-	-	106 (100)
2	Wheat flour	100 (94.3)	5 (4.7)	-	1 (0.9)
3	Potato/Tubers	2 (1.9)	1 (0.9)	43 (40.6)	60 (56.6)
4	Dark green leafy vegetables	8 (7.5)	91 (85.8)	7 (6.6)	-
5	Vit-A rich fruits and vegetables	58 (54.7)	46 (43.4)	1 (0.9)	1 (0.9)
6	Others fruits and vegetables	13 (12.3)	66 (62.3)	21 (19.8)	6 (5.7)
7	Organ Meat	106 (100)	-	-	-
8	Flesh meat, fish or sea foods	69 (65.1)	31 (29.2)	6 (5.7)	-
9	Egg	72 (67.9)	30 (28.3)	1 (0.9)	3 (2.8)
10	Legumes and nuts	4 (3.8)	69 (65.1)	31 (29.2)	2 (1.9)

of women spent time on child feeding/care when she was free from the household tasks. The Women Empowerment in Agricultural Index (WEAI) approach identified that in rural and poor settings like Bangladesh, the control over the use of income domain is the key constraint for less empowered women. Moreover, the overall WEAI score for Bangladesh is 0.66 and about 25 percent of women have achieved adequate empowerment compared to unempowered women (75%) with a mean 5DE score of 0.53 (IFPRI, 2012). In the current study, the percentage of empowered women in the domain of access to income compared to their male counterparts was presented in Figures 3.5. A gap existed between males and females over the control of income in which women represented 33% compared to their male counterparts which were 41.3%. The reason might be due to women are additionally constrained in their control over the use of income. The factors contributing to women's disempowerment are autonomy in production and ownership of assets. Further, the WEAI report stated that 28 percent of women had less decision-making power over the purchase, sale, or transfer of assets (IFPRI, 2012).

3.3. Food Intake pattern

Food frequency questionnaire (FFQ) is a limited checklist of foods and beverages with a frequency response for subjects to report how often each item was consumed over a specified period. Thus, FFQ is one of the effective ways to calculate dietary intake and preferable methods to identify the variability of nutrient adequacy by daily food consumption (Jackson, Walker, Younger, & Bennett, 2011). As the results are shown in Table 3.6, all the studied women consumed rice daily, and 94% of them not ever consumed wheat flour in a week. The reasons might be due to the low availability, accessibility and low purchasing power of wheat flour or a food preference against wheat. Two third of the women (56.6%) consumed potato daily as a substitute for vegetables. About 90% of women consumed dark green leafy vegetables for 1-2 days per week. Around half (43.4%) of the women consumed vitamin-A rich fruits and vegetables on average two days per week.

Regarding the consumption of all animal source food including organ meat and eggs, the whole scenario was very poor; and almost no consumption of organ meat according to all physiological types of women. In contrast, only one-third of women consumed eggs and other animal sources (flesh meat) 1-2 times per week. However, fewer women consumed small fish. Legumes especially lentils, Bengal grams, and split peas were the second most consumed items after dark green leafy vegetables; accounting for 65% of women consumed between 1-2 days in a week and one-third of them consumed more frequently; likely 3-6 days per week.

4. Conclusion

The current observational study provides a piece of important information about the socioeconomic profiles, empowerment level and food intake pattern of ethnic women living in two north-west districts of Bangladesh. Socio-economically, ethnic women from both districts were reflective in terms of their low income, expenditures, and marginal land possessions. Moreover, their disempowerment levels showed a wide range of gaps compared to male counterparts especially in the case of the control over income. Furthermore, the habitual intake pattern of ethnic women also explained that they faced low access to nutrient-dense foods which might influence them to become at risk for malnutrition and health problems. Therefore, they are socially less empowered and far away from the mainstream of social and economic integrations.

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6. Authors' contribution

Fahmida Binth Aziz (FBA) prepared the whole manuscript and performed data analysis. Yousuf Jaheen (YJ) and Md. Khairul Islam (MKI) was part of the research project and collected the raw data. Shajahan Ali (SA) also performed the data analysis. N. H. M. Rubel Mozumder (NHMRM) conducted the whole survey and supervised the research works.

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