

Study of Association between Nutrient Intake and Demographic - Socioeconomic Status of Fisherwomen of Coastal Region, West Bengal

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Abstract: *It was attempted to evaluate the association between nutrient intake and demographic - socioeconomic status of fisherwomen of coastal region, namely Fraserganj (a rural area of Namkhana, South 24 Parganas, West Bengal). A total 100 respondents were selected randomly, who participated in the present study. All the data were gathered through questionnaire - based survey among participants. The demographic and socioeconomic data viz. age group, education, religion, family type, profession and family income (INR/annum) as well as nutrient intake such as carbohydrate, protein, fat and vitamins & minerals data were recorded. In this study, the maximum respondents were of the middle - age group. Maximum respondents were illiterates followed by Madhyamik level of education. Most of the women were Hindu and minimum frequency was Muslim. In the case of family type, the majority of respondents were from joint family. For professions, maximum women were worked on fish drying while minimum were engaged in fish selling. Majority of women declared the family income of >1.5 Lakh INR (74.0%). In conclusion, the demographic profiles such as age and family type were strongly associated with nutrient intake viz. carbohydrate, protein, and fat, which observed nutrient intake value close to RDA and the malnutrition among these fisherwomen should be taken care. Furthermore, higher sample size and proper training on nutrient intake should be needed among fisherwomen.*

Keywords: Coastal Zone, Fisherwomen, Demo - socio status, Nutrient intake, Recommended Dietary Allowances

1. Introduction

The term diet refers to foods and beverages that a person eats and drinks. In other words, diet is formed with the types of foods and beverages as per the choice of a person and these may be vegetarian diet and/or non - vegetarian diet. [1] Moreover, dietary patterns are defined as the quantities, ratios, varieties, or combination of different foods, beverages, and nutrients in the diet, and the frequency with which people are commonly used as palatable foods. Several demographic profiles, socio - economic status, and sometimes individual factors may influence dietary patterns to human. As per researchers, not individual food choices, but the balance of foods chosen over time can benefit or harm health. [2]

In traditional context, inadequate nutrition has been well - established for adverse health outcomes primarily related to a specific nutrient or food. From past studies, it was focused to quantify the dietary acquaintances, which has shifted from specific nutrients or foods to dietary patterns, and these can be more closely related to overall health impact and progression to disease than eating or drinking of particular foods or nutrients. [3] To have insight into overall diet it is necessary to analysis not only the foods, food groups, and nutrients, but also their combination and variety; and the frequency and quantity with which they are habitually consumed. [4]

Malnutrition is associated with poor health and poverty but being overweight increases your chance of developing a number of chronic conditions, including type 2 diabetes, heart disease, and even some types of cancer. [5] Many studies found that nutrient intake are inadequate in the rural women of India

and there is a close relationship with demographic and socioeconomic status. [5 - 8] Some studies were found to know the nutrient intake among fisherwomen and fisherwomen in India and other parts of the globe. [8, 9]

This study attempted to evaluate the association between nutrient intake and demographic - socioeconomic status of fisherwomen of coastal region, West Bengal.

2. Materials and Methods

In this study, a total 100 fisherwomen were randomly recruited who involved different fishing related activities at coastal zone namely Fraserganj (a rural area of Namkhana, South 24 Parganas, West Bengal). The data were gathered through questionnaire - based survey among participant to know the association between nutrient intake and demographic - socioeconomic status. The demographic and socioeconomic data viz. age group, education, religion, family type, profession and family income (INR/annum) as well as nutrient intake such as carbohydrate, protein, fat and vitamins & minerals values were recorded.

The data of categorical variables were statistically analysed by using Paleontological Statistics (PAST, version 3.26) tool. [10] Moreover, the categorical variables were explained as frequency (%) distribution separately for demographic - socioeconomic status and nutrient intake. Pearson's correlation coefficient was analysed to determine association between nutrient intake and demographic - socioeconomic status of specific fisherwomen. The statistically significant level at $P < 0.05$ was considered.

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3. Results

Table 1 evaluates the demographic and socioeconomic status distribution (%) among fisherwomen of West Bengal. Regarding age groups distribution (%), majority of respondents were age group of 26 - 35 years (49.0%) followed by 36 - 45 years (28.0%) and ≤25 years (23.0%). Maximum respondents were illiterates (39.0%) followed by Madhyamik

level (33.0%) of education. The majority of respondents were Hindu (87.0%) and minimum frequency was Muslim (13.0%). In the case of family type, the majority of respondents were from joint family (80.0%). For professions, maximum women were worked on fish drying (48.0%) while minimum were engaged in fish selling (8.0%). Majority of women declared the family income of >1.5 Lakh INR (74.0%).

Table 1: Demographic and socioeconomic status distribution (%) among fishery women (n = 100)

Variables	N	Frequency (%)	Variables	N	Frequency (%)
Age groups (Year)			Professions		
≤25	23	23.0	Catching fish	17	17.0
26 - 35	49	49.0	Drying fish	48	48.0
36 - 45	28	28.0	Fishing net making	11	11.0
Education			Selling fish	8	8.0
Illiterates	39	39.0	Sorting fish	16	16.0
Below Madhyamik	33	33.0	Family income (INR/annum)		
Madhyamik	20	20.0	<1.5 Lakh	26	26.0
Higher secondary	8	8.0	>1.5 Lakh	74	74.0
Religion					
Hindu	87	87.0			
Muslim	13	13.0			
Family type					
Nuclear	20	20.0			
Joint	80	80.0			

Table 2 evaluates the nutrient intake status distribution (%) among fishery women of West Bengal. Regarding carbohydrate intake distribution (%), majority of women were observed 101 - 150 gm/day (58.0%) followed by 151 - 200 gm/day (27.0%) and lower value of about 15.0% (≤100 gm/day). The protein and fat intake values were lower as ≤100 and ≤40gm/day (54.0% and 78.0%) among maximum women. Regarding Vitamins & Minerals intake, maximum women were found to be 51 - 70 gm/day (39.0%) followed by ≤50 gm/day (38.0%).

Table 2: Dietary pattern distribution (%) among fishery women (n = 100)

Variables	N	Frequency (%)
Carbohydrate intake (gm/day)		
≤100	15	15.0
101 - 150	58	58.0
151 - 200	27	27.0
Protein intake (gm/day)		
≤100	54	54.0
101 - 150	21	21.0
151 - 200	23	23.0
>200	2	2.0
Fat intake (gm/day)		
≤40	78	78.0
41 - 50	22	22.0
Vitamins & Minerals intake (gm/day)		
≤50	38	38.0
51 - 70	39	39.0
71 - 100	23	23.0

The results of Pearson’s correlation matrix (Table 3) between demographic - socioeconomic status and nutrient intake among participants revealed that age was significantly (P<0.001 and P<0.01) negatively correlated with education (- 0.415), religion (- 0.386) and carbohydrate intake (- 0.197). The parameter education was significantly (P<0.01) negatively correlated with religion (- 0.229). The parameter family type was significantly (P<0.01) negatively correlated with fat intake (- 0.217). The parameter carbohydrate intake was significantly (P<0.001 and P<0.01) positively correlated with protein intake (0.618), fat intake (0.268) and vitamins & minerals intake (0.506). The parameter protein intake was significantly (P<0.001 and P<0.01) positively correlated with fat intake (0.286) and vitamins & minerals intake (0.591). The parameter fat intake was significantly (P<0.001) positively correlated with vitamins & minerals intake (0.356).

Table 3: Pearson's correlation matrix analysis between demographic - socioeconomic status and nutrient intake among fishery women

	Age	Education	Family income	Religion	Family type	Profession	Carbohydrate intake	Protein intake	Fat intake	Vitamins & Minerals intake
Age	1									
Education	- 0.415*	1								
Family income	- 0.070	- 0.105	1							
Religion	- 0.386*	- 0.229**	0.104	1						
Family type	- 0.099	- 0.105	- 0.167	0.193	1					
Profession	0.056	0.110	- 0.110	- 0.052	- 0.067	1				
Carbohydrate intake	- 0.197**	0.141	- 0.010	0.107	- 0.093	0.156	1			
Protein intake	- 0.178	0.139	0.085	0.060	- 0.051	0.053	0.618*	1		
Fat intake	- 0.088	0.155	- 0.004	0.010	- 0.217**	0.046	0.268**	0.286**	1	
Vitamins & Minerals intake	- 0.048	0.072	0.043	- 0.002	- 0.065	0.074	0.506*	0.591*	0.356*	1

*P<0.01; **P<0.01

4. Discussions

In our study, the maximum fisherwomen were of middle - aged group in this particular study area of West Bengal. Earlier studies reported that maximum fisherwomen were of middle - age followed by young age group. [11, 12, 13] Our study evaluates that maximum fisherwomen were illiterates followed by Madhyamik level of education, which shows similarity with other studies. [12, 13] The majority of fisherwomen were Hindu and minimum frequency was Muslim, which shows similarity by other study. [12] Pandey and Mishra reported that the participants of fish culture were only Hindu in the district Faizabad (U. P). [14]

In the case of family type, the majority of fisherwomen were from joint family. In agreement with our study, Shankar (2010) reported that maximum fisherfolk had joint family and minimum had had nuclear family. [15] For professions, maximum fisherwomen were worked on fish drying while minimum were engaged in fish selling. Bhargavi et al. documented three different occupation levels such as primary (fish marketing), secondary (salting and curing) and tertiary (fish pickling). [12] Majority of fisherwomen declared the family income of >1.5 Lakh INR (74.0%). The present study observed similar to the earlier works related to the family income of fisherwomen community in Andhra Pradesh. [12]

In the present study, maximum carbohydrate intake was observed 101 - 150 gm/day in the studied women while the protein and fat intake values were lower as ≤ 100 and ≤ 40 gm/day in these women. Regarding Vitamins & Minerals intake, maximum women were found to be 51 - 70 gm/day. Geetha et al. [5] reported that mean intake of carbohydrate (297 gm/day), protein (44.2 gm/day) and fat (28.7 gm/day) in the women of rural area of Chickballapur district of Karnataka State, India where the values did not show much higher as per Recommended Dietary Allowances (RDA) with the values of 100, 36.3 and 25 gm/day except carbohydrate. In the present findings, similarity was observed. [15]

A similar finding was observed on the correlation matrix analysis, which observed a significant positive correlation between nutrient intake with an earlier study by Geetha et al. [5] But age was significantly negatively correlated with and carbohydrate intake. The parameter family type was significantly negatively correlated with fat intake. The

demographic profiles had observed close association with nutrients viz. carbohydrate and fat intake.

5. Conclusions

It is concluded that demographic profiles such as age and family type was strongly associated with nutrient intake viz. carbohydrate, protein, and fat. Moreover, there was also observed nutrient intake value close to RDA and the malnutrition among these fisherwomen should be taken care. It is suggested that higher sample size and further training on nutrient intake should be needed among fisherwomen.

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Conflict Of Interest

The author declares no conflict of interest.

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