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Socio-Economic Status, Dietary Pattern and Nutritional Status of the Female Workers of Fulchara Tea Garden in Moulvibazar District, Bangladesh

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Abstract

Background: Fulchara tea garden is one of the 163 tea gardens in Bangladesh located in Sreemangal Upazila of Moulvibazar District, Sylhet. The tea laborers have a community of their own apart from the mainstream. People working in different tea gardens all over in Bangladesh have been leading a miserable life because of their low wage and they have to spend lion's share of their total income only to manage foods where all the other needs remain unmet; but there are many other things like dietary habit, nutritional status, reproductive healthcare, hygiene and sanitation practices etc need more investigations. Moreover, their living condition in respect of the mentioned indicators is far below than the standard level.

Objectives: To observe the socioeconomic characteristics, nutritional status, dietary habits, healthcare seeking behavior and hygiene and sanitation practices of female workers in Fulchara tea garden at Sreemangal, Moulvibazar.

Method: A descriptive study with cross-sectional design which was conducted among 96 purposively selected female workers, who experienced at least one pregnancy, of Fulchara tea garden at Sreemangal, Moulavibazar, Bangladesh. Data was analyzed by SPSS 18.

Result: Study found 68.8% of the female tea garden workers were illiterate, 87.5% had monthly income between BDT 1501-2000. Pulses are the main foods to meet the protein requirement with most of the cases there was no intake (83.3%) of meat in last one week. By BMI, 64.6% women were found underweight. Only 55.2% female workers use sanitary latrine and 54% wash their hands by soap after defecation. During pregnancy, 77.1% women had to do heavy works and 85.4% had delivery at their homes.

Conclusion: The socio-economic status, dietary pattern, nutritional status and sanitation coverage is poor among the female workers of Fulchara tea garden at Sreemangal, Moulvibazar.

Keywords: Female tea garden workers; dietary pattern; nutritional status.

Introduction

Sylhet is the mother of tea industry as the first commercial tea plantation was established in 1857 in Malnichera of Sylhet. Tea garden workers are nearly 14% of the total ethnic minorities and 0.22% of the total population in Bangladesh. According to Bangladesh Tea Board, there are 89,812 registered and 19,592 casual laborers working in 163 tea gardens. Among them 44.1% are men, 43.8% are women and rest 12.1% are adolescents. Workers of tea gardens, in total, are deprived of housing, food, clothing, health, education, etc. which are basic human rights. High rate of illiteracy, ignorance, social exclusion, economic hardship, etc. bound them to maintain traditional life without minimum opportunities [1]. The findings of some studies show the sub-human life of tea workers both in terms of working environment, living conditions and health and sanitation security [2-6]. Food and nutrition related knowledge and practice is very poor as majority of them including women and children do not take required food [7].

In Sylhet division of Bangladesh, 20% households are below the line of acceptable but low food consumption and 32% households receive cash support from various social safety net programs. In this division, only 46% households have improved sanitary latrine although 97% households have availability of soap. If the nutritional status (by BMI) of 19-49 year women is considered in this division, prevalence of mild, moderate, and severe under nutrition is 15%, 8% and 3% respectively [8].

Poor and inadequate is common in various tea gardens and laborers are to accommodate themselves in a small dilapidated house, sometimes with their pet animals [5,9,10]. Though in Bangladesh 62.7% people use sanitary latrine (Bangladesh Economic Survey, 2011) but the situation is not satisfactory, even it is worse in tea gardens [7]. Workers living in tea gardens are not facilitated with sanitary toilet rather majority of them are used to use open place for excretion of feces, even they are very unaware of or often ignore their rights regarding sanitation [10]. Even feces are generally disposed to nearby water bodies or throwing in the jungle [9]. Open defecation causing various excreta related diseases and not practiced with washing hand after defecation [11].

The tea garden management is responsible for providing all kinds of medical facilities to the tea garden workers (Tea Plantation Labor Rules, 1977), but the workers' awareness on general health and healthy lifestyle is superficial, knowledge on common illnesses and their prevention is poor and treatment-seeking behavior not conducive to the maintenance of health.

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Child and early marriage, unscientific food practice and inadequate personal hygiene are very common among tea garden workers which are acting negatively on their life. Unhealthy working environment and occupational health hazards remain unchanged and limited facilities bind them to cope with situation without any question (The Daily Sun, 13 January, 2013).

Objectives of the study

To observe the socio-economic condition, dietary pattern, nutritional status, healthcare seeking behavior, hygiene and sanitation practices of female workers of Fulchara tea garden in Moulvibazar district, Bangladesh.

Methods and materials

Study design

The study was an observational study with cross-sectional design conducted among 96 female workers in Fulchara tea garden at Sreemangal, Moulvibazar.

Factors studied

Subjects were interviewed to investigate education level, marital age, reason behind job involvement, average monthly personal and family income, expenditure at different sectors, dietary pattern, reproductive and general healthcare seeking behavior, type of toilets and hand washing after using toilets. To assess nutritional status, body weight and height was measured to calculate the BMI.

Study area

The study population was selected from Fulchara at Sreemangal upazila of Moulvibazar district, Bangladesh.

Sample size and inclusion criteria

A total of 96 female tea garden workers who had gone through at least one pregnancy and delivery were selected by purposive sampling.

Data collection technique

A semi-structured questionnaire consisting both close and open ended questions was developed, standardized and used for data collection from the sampled population through direct interview. Data was collected from March 2015 to May 2015. The anthropometric measurements were carried out by bathroom scale and height scale.

Data Analysis

The obtained data was checked, cleaned, validated and analyzed by Statistical Package for Social Sciences (SPSS) version 18.

Ethical issue

Ethical guidelines of Declaration of Helsinki IV (2001) were followed throughout the study. Informed written consent was taken from every subject. The subject's personal information was kept confidential.

Results

The results have been classified into socio-demographic characteristics, income level, pattern of expenditure, dietary pattern, nutritional status, morbidity and healthcare seeking behavior, reproductive healthcare seeking behavior, and hygiene and sanitation practices which have been represented by following tables and figure (Table 1-7) (chart 1).

Indicators	Response category	Findings (N=96)
Age (year)	Less than or equal 20	3.2% (3)
	21-30	20.8% (20)
	31-40	34.4% (33)
	41-50	20.8% (20)
	Above 50	20.8% (20)
Religion	Muslim	8.3% (8)
	Hindu	79.2% (76)
	Christian	12.5% (12)
Education level	Illiterate	68.8% (66)
	Primary level	18.7% (18)
	Secondary level	12.5% (12)
Age (year) at marriage	13-15	35.4% (34)
	16-18	54.2% (52)
	Above 18	10.4% (10)
Family Size	Less than or equal 4	25% (24)
	5-8	68.8% (66)
	9-12	4.1% (4)
	Above 12	2.1% (2)

Table 1: Socio-demographic characteristics:shows most of the respondents (34.4%) are of 31-40 years of age, but the percentage of respondents above 50 (20.8%) is also high. Besides, it gives a clear picture about their early marriage showing that most of the female tea garden workers (89.6%) get married before the safe threshold of marriage. Illiteracy among the women tea garden workers is unexpectedly high (68.8%).

Indicators	Response category	Findings (N=96)
Monthly personal income (taka)	1501-2000	87.5% (84)
	2001-2500	10.4% (10)
	2501-3000	2.1% (2)
Monthly family income (taka)	2001-3000	12.5% (12)
	3001-4000	39.6% (38)
	4001-5000	27.1% (26)
	5001-7000	10.4% (10)
	Above 7000	10.4% (10)

Table 2: Income level: illustrates: 87.5% (84) female tea garden workers earn below or equal 2000 taka and 39.6% (38) have monthly family income in between 3001-4000 taka. But, 71% (68) respondents claimed that they have limited control over their income and it is expended by their husbands. It was found 4.2% (4) respondents claimed that they got involved in job as they were forced or tortured by their husbands and 95.8% (92) women involved in job for providing financial supports to their families.

Food items	Weekly consumption frequency (N=96)			
	No intake	1-2 days	3-5 days	6-7 days
Rice	0.0% (0)	0.0% (0)	4.2% (4)	95.8% (92)
Wheat (Ruti)	50% (48)	12.5% (12)	16.7% (16)	20.8% (20)
Meat	83.3% (80)	16.7% (16)	0.0% (0)	0.0% (0)
Fish	6.0% (6)	84.0% (80)	4.0% (4)	6.0% (6)
Egg	31.2% (32)	66.7% (64)	2.1% (2)	0.0% (0)
Pulse	2.1% (2)	16.7% (16)	47.9% (46)	33.3% (32)
Milk	83.4% (80)	0.0% (0)	8.3% (8)	8.3% (8)
Vegetables	0.0% (0)	16.7% (16)	62.5% (60)	20.8% (20)

Table 3: Dietary pattern: To observe the dietary pattern, only main dishes were considered. Although many respondents told that they eat fruits at least once a week. Table-3 shows that only the intake of rice is regular, but the intake of fish, pulse and vegetables is moderate. The intake of meat, milk and egg is very irregular. Another important finding is 58.3% (56) respondents claimed that they intake musty foods at regular basis.

Indicator	Category	Findings (N=96)
BMI	<18.5 (Underweight)	64.6% (62)
	18.5-24.99 (Normal)	35.4% (34)
	25.0-29.9 (Overweight)	0.0% (0)
	Above 30.0 (Obesity)	0.0% (0)

Table 4: Nutritional status by BMI: Nutritional status as indicated through BMI shows that 64.6% female tea garden workers are underweight. No respondent was found with overweight and obesity.

Indicators	Response category	Findings (N=96)	
Incidence of diseases in last three months	Yes	68.8% (66)	
	No	31.2% (30)	
Types of diseases	Fever	31% (20)	N=66
	Diarrhea	30% (20)	
	Cold/Cough	18% (12)	
	Dysentery	12% (8)	
	Others	9% (6)	
Treatment places	Public hospital	39.6% (26)	N=66
	Company hospital	25% (17)	
	Local pharmacy	35.4% (23)	
Types of medicine taken	Homeopath	25% (24)	
	Allopath	60.4% (58)	
	Herbal	14.6% (14)	
Intake of ORS during diarrhea	Yes	89.6% (86)	
	No	10.4% (10)	
Received anti-helminthes tablet in last six months	Yes	27.1% (26)	
	No	72.9% (70)	

Table 5: Morbidity and healthcare seeking behavior: shows 68.8% (66) respondents had any incidence of diseases in last three months, though they were minor like fever, diarrhea or cold. Of those who had any incidence of diseases, 39.6% (26) received treatment from public hospital. Homeopath and herbal treatment is also received by many respondents during illness.

Indicators	Response category	Findings (N=96)
Types of activities had to do during pregnancy	Heavy activity	77.1% (74)
	Medium activity	12.5% (12)
	Normal activity	10.4% (10)
Place of delivery	Home	85.4% (82)
	Hospital	14.6% (14)

Table 6: Reproductive health seeking behavior: shows 77.1% female had to do heavy works during pregnancy and 85.4% respondents had their delivery at home.

Indicators	Response category	Findings (N=96)
Place of defecation	Open place	37.5% (36)
	Trench latrine	8.3% (8)
	Sanitary latrine	55.2% (52)
Mode of hand washing	With water only	11% (10)
	Water plus soap	35% (34)
	Water plus ash/soil	54% (52)

Table 7: Hygiene and sanitation practice: shows the hygiene and sanitation practice among female tea garden workers is not satisfactory. Only 55.2% use sanitary latrine and 35% use soap to wash their hands after defecation. The rest others use either open place, or trench latrine or a mere hole for defecation.

Discussion

According to Bangladesh Economic Survey-2015, per capita income in Bangladesh was USD 1314 which is far higher than the individual's annual income of the studied population. Although there was a significant drop of poverty rate (from 31% poverty rate in 2014 to 24.8% in 2015 and extreme poverty rate declined to 12.9%), the findings show that this economic development was not reflected lucidly in the living condition of the studied population.

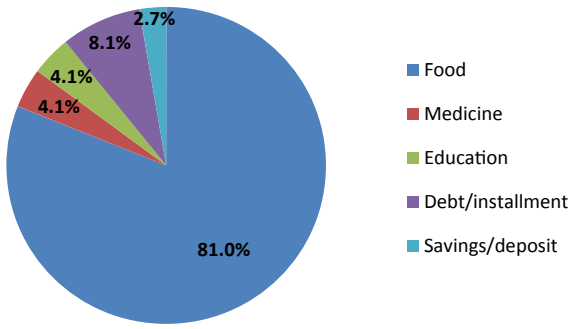

Chart 1: Pattern of expenditure:shows most of the family income (81.0%) is used to buy foods. Expenditure on monthly installment for debt (8.1%) is nearly double than the expenditure on medicine (4.1%) and education (4.1%) individually. On the other hand, 44% (42) respondents were found with no family savings at the end of the month. There are many other sectors of expenditure like clothing and family logistic costs which are sometimes either very small amount or not require in every month. Of the respondents, 10% were found with spending no money on medicine, 27.1% do not spend any money on education and 44% of them do not deposit any money for future.

To assess the dietary pattern, only main dishes were considered and it was collected by food frequency questionnaire to extract the dietary history of last one week. The only food they consume regularly is rice (95.8% respondent intake rice 6-7 days a week), which is not only because rice is the staple food for the people of Bangladesh, but also there is special incentive and subsidy on rice inside the tea garden areas which is provided by the tea garden authority. In addition, 68.8% respondents have the family size with 5-8 members. That might be a reason for their less intake of meat and diversified foods as well as less expenses on education (4.1% of family income), medication (4.1% of family income) etc because lion's share of family income (39.6% had family income between BDT 3,001-4,000) was spent to meet the dietary demand of the family members. But intake of other food items like ruti, pulse, milk, meat, fish and vegetables were not at satisfactory level.

A classic study in Bangladesh showed that the simple practice of washing hands with soap after defecation was sufficient to reduce the secondary attack rates if dysentery within the participating families by 85 percent [2]. Another relevant study showed that hand washing with soap and water after contact with fecal material can reduce diarrheal diseases by 35% to more. Using a clean pit latrine and disposing children's feces in a pit can reduce diarrheal incidence by 36% or more [11]. The study showed low use of sanitary latrine (55.2%) and soap for hand washing (35%) among the respondents.

Care during pregnancy and institutional delivery is important determinants for the nutrition of both mother and child. In Bangladesh, 62% deliveries take place at home, 13% at public hospitals, and 25% at private hospitals [12]. According to this study, most of the respondents (77.1%) had to do heavy work during pregnancy and (85.4%) had their delivery at home.

Tea is one of the most important items that give us huge amount of foreign currency every year. Females are the main workers in these tea gardens. All of these females come from the families living below the poverty line and this trend goes on to their future generations as vicious cycle. Despite having constitutional obligation and legal provisions, they remain as the example of the capitalist discrimination and thus are bound to live a miserable life. The most responsible reason that comes forward from the study is illiteracy because literate people are

always aware of their rights [1]. Most of the respondents of our study have wage too low to fulfill the minimum requirements of livelihood. Among them only 31.2% have either primary or secondary education.

According to FAO reports, there are about 460 million people out of the world population who are suffering from malnutrition and 300 million in South Asia, where they constitute one third of the total [13]. The nutritional status can be determined by both food and non-food factors (personal hygiene, drinking water, waste disposal and actual life state). Access to safe and nutritious food by everyone is one of the basic human rights as proclaimed by the world leaders in Rome during world food summit 1996 [14]. To achieve this goal, household food security must be ensured which depends on the ability of the household to secure enough food to ensure an adequate intake for all the members at all times. Besides, accessibility of food depends on household food availability either from household production or from purchase from market or from both.

The malnutrition situation of Bangladesh is an indication of poor dietary intake pattern which in turn revealed perpetual food insecurity at household level. The situation is obviously aggravated by frequent attacks of diarrhea and other infectious diseases. This study revealed that 68.8% of the respondents were attacked by diseases (mostly diarrhea and fever) prior to three months of the survey.

Nutrition is a composite entity which is linked with socio-economic condition, dietary pattern, hygiene and sanitation, health care practices of the people. It was found that these indicators are not at satisfactory level for the studied population. And, because of the prevalence of both the food and non-food factors causing malnutrition, 64.6% of women tea garden workers were found underweight.

Conclusion

The study showed that the high rate of illiteracy, low wage, early marriage, poor dietary intake, high rate of communicable diseases and poor nutritional status are very likely related to each other and one leads to another. Accordingly, the vicious cycle goes on.

Though such studies require information on multiple variables, as nutrition is a multidimensional subject which is related to adequate food intake, food and pure water supply, proper care and health practices, sanitation and hygiene, and socio- economic conditions of the people, we tried to cover every aspects related to the nutrition field, but the number of respondents were low and we included female tea garden workers only in the current study. Further studies can be conducted to address the underlying issues affecting the socioeconomic status, nutrition and sanitation situation in the broad context of deprived tea garden workers.

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