

# Food habit and health problems among brick field workers in Cox's Bazar district, Bangladesh

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## Abstract

Brick bricks are an unsafe and dangerous workplace. The type of work exposes employees to hazardous environments and working conditions. The workers here work in an unhygienic and unsafe condition, that affects their dietary consumption and nutritional status. This study is a comprehensive nationally representative study which aimed to assess the food habit and health problems of brick field workers in Cox's Bazar district, Bangladesh. It was a cross-sectional descriptive type of study which was conducted at Cox's Bazar brick field with participation of 126 randomly selected brick field workers who were working in the selected brick field for more than a year. For this study, their food habit and health profile data were collected and data was analyzed using SPSS software. Brickfield workers work under high physical and biomechanical pressure for a long time (8-9 hours). Among all the 126 workers, protein consumption was found very poor and most of the workers usually skipped their breakfast. Majority of them were suffering from back pain and many of them had muscle pain, weakness and common cold. Overall Key aspects derived from the study. Example, Overall, 2 in 10 workers consumed protein rich food regularly and two-fifth of them were suffering from back pain due to heavy workload. The workers should be provided food and health service for their better nutrition and health condition so that some decent work can be ensured.



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## Introduction

Bangladesh is an exceptionally populated country with in excess of 170 million individuals. Every year three hundred thousand to four hundred thousand provincial individuals move in urban communities. The current individuals just as new travelers need housing facilities. As of now, the yearly required sanctuary fluctuates from 300,000 to 550,000 units. Bangladesh should build roughly 4,000,000 new houses yearly to oblige the developing populace. Quick urbanization in the nation has made a roaring development industry and prodded the creation of 8.6 billion bricks every year, with interest for the bricks increasing at a yearly pace of about 5.28 percent (UNDP, 2011). Just as other agricultural nations, Bangladesh is developing quick, and there is an endless requirement for modest development materials. Brick is perhaps the main structure materials or unit of development. Brick making in Bangladesh is an area related with framework advancement, contributing around one percent to the nation's (GDP) and creating work for around 1,000,000 individuals. Bricks are made, sold and circled from a brick kiln. Brick fields are for the most part arranged both in metropolitan and rustic regions of Bangladesh (ILO, 2014). Brick making turns out a preferred revenue over agribusiness or different positions accessible in provincial Bangladesh, however it is hazardous and frequently obliterating to laborers' wellbeing. There are around eight thousand enrolled and unregistered brick kilns in Bangladesh (ILO, 2014). Worldwide Labour Organization (ILO) and the WHO have characterized word related wellbeing as 'the promotion and maintenance of the highest physical, mental and social well-being of employees in all occupations (Koh & Jeyaratnam, 2001). An enormous number of laborers, including people and even youngsters work in the brick kiln on a transitory agreement and low wages. Laborers working in the brick kilns experienced musculoskeletal issues because of off-kilter working stances (Trevelyan & Haslam, 2001; Chung & Kee, 2000) and furthermore experience the ill effects of arranged medical issues because of treatment of hefty burdens without taking sufficient rest breaks (Mukhopadhyay, 2008). Different danger factors are included, including biochemical and natural conditions, for example, actual remaining burden, negative body act, vibration, psychosocial factors such as time, pressure and tedious or dull assignments (Ariens et al., 2000; Bongers et al., 2002; Cromie et al., 2002; Salerno et al., 2002). The brick kilns are quite risky and hazardous workplace. Because of working in such unhygienic and hazardous condition, the nutritional and health status of the workers are being influenced genuinely. Hence, this study was focused to analyze the food habit and health problems of the brick kiln workers.

## Materials and methods

A total of 126 brick field workers were randomly selected for the study from two brick kiln of Cox's Bazar district, Bangladesh. Sample size was calculated using appropriate statistical formula ( $z^2pq/d^2$ ). Sample size was calculated at the 95% confidence interval and at the 5% significance level. The estimated number of the people surveyed was 91%. The data was collected by using a semi-structured questionnaire and conducting face-to-face interview. Data entry and analysis were done using SPSS software. Socio-economic data on residence, age, education level and daily wage were collected. During analyzing the food intake pattern, the foods were categorized into three categories (cereals, meat/fish/egg and vegetables/fruits) considering their dietary behavior. Smoking history of the workers were also taken. Before commencing the study, ethical clearance was obtained from the Ethics Review Committee of Faculty of Allied Health Sciences of Daffodil International University and verbal Informed consent was taken from the study participants before data collection. Anonymity and confidentiality were maintained strictly.

## Results

The findings from this study shows that Among 126 respondents, 66.78% (84) were from rural area and 33.22% (42) were from urban area. 81.54% were male and rest (18.46%) were female. Majority (57.97%) of the respondents were in their early adulthood. More than three fifth (65.96%) of the respondents were illiterate. There was a diversity in the daily wages of the workers whereas more than half (51.84%) of the respondents were receiving BDT 350 as wage per day. About one-third of the total respondents were receiving wage below than that (Table 1). Though nearly all the respondents usually take lunch and dinner but more than 80% (83.14%) of the respondents usually take their breakfast irregularly (Table 2). During assessing their food intake pattern, foods were classified into three categories which are cereals (Energy yielding foods), egg/meat/fish (Body building foods) and vegetables/fruits (Body protecting foods). The findings shows that the consumption of body building foods (egg/meat/fish) in every meal is very low and their diet mostly comprises cereals (Energy yielding foods) (Table 3). Among all the study participants, 81.29% (102) respondents had existing smoking habits. Among those 102 respondents, more than 60% (63) respondents usually smoked 10 to 15 sticks a day and 22.10% (23) smoked 16 to 20 sticks a day (Table 4). 78.26% (99) respondents were suffering from any health problems at the time of data collection. The study findings represented that more than one-fifth of the respondents back pain and respiratory diseases. Also, many respondents had muscle pain, weakness, cold and fever (Table 5).

**Table 1: Socio-demographic characteristics of the brick field workers**

Characteristics	Frequency (N)	Percentage (%)
<b>Residence</b>		
Rural	84	66.78
Urban	42	33.22
<b>Sex</b>		
Male	103	81.54
Female	23	18.46
<b>Age group</b>		
Adolescence (15-19)	6	5.07
Early adulthood (20-35)	73	57.97
Midlife (35-50)	33	26.08
Mature adulthood (>50)	14	10.88
<b>Education level</b>		
No education	83	65.96
Up to primary level	34	27.26
More than primary level	9	6.78
<b>Wages (Daily)</b>		
<BDT 300	7	5.76
BDT 300	35	27.65
BDT 350	65	51.84
BDT 400	19	14.75

**Data source: Field study**

**Table 2: Meal taking pattern of the brick field workers**

Meal	Regularly		Irregularly	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
Breakfast	21	16.86	105	83.14
Lunch	124	98.78	2	1.22
Dinner	125	99.12	1	0.88

**Data source: Field study**

**Table 3: Food intake pattern of the brick field workers in breakfast, lunch and dinner**

Food type	Breakfast (N=21)		Lunch (N=124)		Dinner (N=125)	
	Regularly N (%)	Irregularly N (%)	Regularly N (%)	Irregularly N (%)	Regularly N (%)	Irregularly N (%)
Cereals (Rice, bread etc.)	20 (97.26)	1 (2.74)	122 (98.51)	2 (1.49)	112 (89.78)	13 (10.22)
Egg/meat/fish	4 (18.87)	17 (81.13)	26 (21.16)	98 (78.84)	22 (17.59)	103 (82.41)
Vegetables/fruits	19 (92.26)	2 (7.74)	105 (84.68)	19 (15.32)	114 (90.81)	11 (9.19)

Data source: Field study

**Table 4: Smoking behavior and health problems of the brick field workers**

Smoking behavior	Frequency (N)	Percentage (%)
<b>Smoking habit</b>		
Smoker	102	81.29
Non-smoker	24	18.71
<b>Amounts of stick smoked by a smoker per day (N=102)</b>		
Less than 10	8	7.89
10 to 15	63	61.52
16 to 20	23	22.10
More than 20	9	8.49

Data source: Field study

**Table 5: Health problems of the brick field workers**

<b>Suffering from any health problem during data collection period (N=126)</b>		
Yes	99	78.62
No	27	21.38
<b>Existing health problems of the brick field workers (Multiple response) (N=99)</b>		
Back pain	22	21.86
Respiratory disease	21	20.62
Muscle pain	19	18.53
Weakness	17	16.91
Cold	14	14.16
Fever	13	13.09
Diarrhea	8	7.81
Weakness	6	6.12

Data source: Field study

## Discussion

This cross-sectional study was conducted with the brick field workers of Cox's Bazar district of Bangladesh. To our knowledge, this is the very first time, an investigation was done to identify the food habit and health problems among brick field workers in Bangladesh. It is seen in the study findings that the male respondents are ruled in the overview as the type of work in brick fields requires male (Patil *et al.*, 2017). Most of the respondents were had a place with the age bunch 20 to 35 years (57.97%) which is very like the study findings of the Inbaraj *et al.* (2013). Meal taking pattern of the workers shows irregularity in taking breakfast among most of the workers. Majority of the respondents depends on the cereals as their major food type. The consumption of protein rich foods is comparatively very low in every meal and the vegetables/fruits intake is very low during breakfast which is very similar to the study of Morikawa *et al.* (2008). This dietary pattern resulted poor nutritional outcome of the workers as indicated in the national data of Bangladesh (JGSPH & NNS, 2015). Age, working climate,

low quality fuel in wasteful and obsolete innovation, excessive dust, smoking are solid indicators of respiratory disease (Forey *et al.*, 2011). As the brick field area is too dusty and majority of the respondents had smoking habits, it is quite obvious to have respiratory disease which is reflecting clearly from the study findings (Table 4). About 20% of the workers had suffering from back pain and muscle pain. Brick making incorporates a few stages and different sorts of exercises and requires an assortment of abilities. The legs and hands are the fundamental part of the body of the workers which are probably going to have motion challenges. Delayed sitting in hunching down act, blending of mud, conveying in a streetcar and pushing the streetcar are the primary driver of have such sort of headway troubles such as muscle pain, back pain etc. which are very similar to the investigation don by Vikrant *et al.* (2016).

### **Conclusion**

This study was attempted to assess the food habits and health problems of brick field workers at selected brick fields in Cox's Bazar, Bangladesh. The findings from this study indicated that the food habit of the brick field workers is below standard and as they work in a harsh situation, they are very vulnerable to different health problems. They also suffer from different musculoskeletal disorders as well as other disease which is very much similar to the study findings of Trevelyan & Haslam (2001). This indicates the need of proper food and health facility for the workers to ensure a good health status of them and their strong participation towards the national economy. Thus, it can be concluded by saying that the workers should be enrolled into the government safety net programme to ensure their accessibility to appropriate food and health facility for maintaining proper nutritional status and health outcome.

### **Limitation of the study**

The limitation of this study was the cross-sectional nature of data that may obscure the causal relationship of the various factors and would require qualitative data. The sample size is calculated as 126 and the study was conducted in two brick kilns of Cox's Bazar district. However, more samples from different districts and brick kilns could posturize the findings more accurately. So, more study among the similar population with larger sample size can be recommended to generalize the findings.

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### **Conflict of interest**

*The authors have declared that there is no conflict of interest in this study.*

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