

Prevalence of Household Food Insecurity among Households in Selected Areas in Bangladesh

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Abstract Household food insecurity is where no-one in the household has physical, social and economic access to sufficient, safe and nutritious food that meets dietary needs and food preferences for an active and healthy life at all times. A cross-sectional study was conducted in Dhaka, Mymensing, Khulna and Sylhet division of Bangladesh. Total 100 households were selected by multistage sampling. Data were collected using structured and pretested questionnaire through interviewing household heads. Data were analyzed using SPSS version 23 statistical package. Descriptive statistics and chi square were performed to achieve study objectives. It was found that about 19% households were food insecure. Of those households, 6% were mildly food insecure, 11% and 2% households were moderately and severely food insecure, respectively. Findings suggest that attention is needed on stabilization of food markets, and job opportunities should be created to improve household food insecurity in these study areas.

Keywords: household food insecurity, prevalence, food security, Bangladesh, Household Food Insecurity Access Scale (HFIAS), household

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1. Introduction

Adequate food in terms of quantity and quality for all people at all time is vital to a nation's growth. Consuming less food in long terms leads to hunger and starvation [1]. Indicators of food security include availability of food, economic and physical access to food, adequate food utilization and sustainably having access to adequate food [2]. Food insecurity exists when all people, at all times, secure access to sufficient amounts of safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life [3]. During food insecurity, people are not consuming enough food for an active and healthy life. This is due to the unavailability of food, inadequate purchasing power or inappropriate utilization at household level [4]. Household food insecurity can be chronic and transitory in its type. Chronic food insecurity is often the result of extended periods of poverty, lack of assets and inadequate access to productive resources. Transitory household food insecurity is primarily caused by short term shocks and fluctuations in food availability and food access, including year-to-year variations in domestic food production, food prices and household income [5]. Household food insecurity is one of major public health problems in both developing and developed nations [4]. Based on Food and Agricultural Organization

(FAO) report, 805 million (11.3%) global populations were unable to meet their dietary energy supplies in 2012-2014. In developing countries, 791 million people live in hunger, which means 13.5% of the overall population remains underfed [6]. Achieving food security for all people at all times remains a huge challenge for several developing countries.

2. Methods

2.1. Study Setting

The study was conducted in Dhaka, Mymensing, Sylhet and Khulna District in Bangladesh

2.2. Study Design, Period, and Sample Size

A community-based cross sectional study was conducted from January 01 to March 30, 2018. Total 100 households were selected by multistage sampling.

2.3. Sampling Technique

This study was conducted in Dhaka, Mymensing, Sylhet and Khulna District for more than six months before the survey. Multistage sampling technique was used; for the primary sampling units, four districts were

randomly selected from the total of 8 districts. Household number was equally distributed to each of the selected districts. Finally, systematic random sampling technique was employed to select households to be visited for data collection.

Data collection method used for this study

Data were collected using pretested and structured questionnaire. Household Food Insecurity Access Scale (HFIAS) developed by FANTA and validated for urban and rural was used [7]. Moreover, 12 food groups suggested by FANTA using a 24-h recall method were used to assess Household Dietary Diversity Score (HDDS) [7,8,9]. Questionnaire was initially prepared in English and translated to Bengali and finally back translated to English to check consistency and accuracy by language experts.

Data quality assurance

Enumerators and supervisors were trained for 2 days, 1 week prior to date of data collection on: study objectives, key highlights in methods to assess household food insecurity, data collection and interviewing approach, and data recording. Pretesting was done with 20 households. Data collection was strictly supervised in daily basis. Data were then checked for completeness and consistency before data entry and then exported to SPSS version 23 for further data processing and/or analysis.

Data processing and analysis

Households were classified based on responses to the nine severity items in the HFIAS and coded “0” for “No” and “1” for “Yes.” The procedure for scoring was used as follows: “0” was attributed if the event described by the question never occurred, “1” if it occurred during the previous 30 days. With regard to the occurrence, “1” was attributed if the events rarely occur, “2” sometimes and “3” often. Therefore, responses on the nine HFIAS questions were summed using the SPSS 23 program to create household food security score, with a minimum of “0” and a maximum score of “27.” According to the score, the higher the score, the more the household is vulnerable to food insecurity. The lower the score, the lesser the food insecurity a household experienced. Therefore, HFIAS score of 0-1 is categorized as food secure, 2 and above were considered as food insecure. Households scored 2-7, 8-14 and 15-27 were categorized to be mildly, moderately and severely food insecure households, respectively.

3. Results

3.1. Sociodemographic and Socioeconomic Characteristics of Households

A total of 100 household heads participated in this study. The mean age of household head was 46.30 years, and majority of the household heads (88%) were males. Larger segment of participants 82% were married, and about 63 (63%) households have 4-6 family members. Besides, households with ≤ 2 dependent members were 73

(73%), and household heads attended formal education were 83 (83%). In terms of livelihood, among household heads included, 62 (62 %) were self-employed and 49 (49%) had monthly income of 10,001-20,000 Taka. (Table 1).

Table 1. Sociodemographic characteristics of the respondents

Variable N = 100	Category	Frequency	%
Sex of HH head	Male	88	88
	Female	12	12
Age of HH head	20-40	57	57
	41-64	39	39
	65 and above	4	4
Family size	1-3	23	23
	4-6	63	63
	7 and above	14	14
Religion	Muslim	62	62
	Hindu	30	30
	Others	8	8
Marital status of HH head	Married	82	82
	Unmarried	1	1
	Divorced	4	4
	Separated	3	3
	Widowed	10	10
Educational status	No formal education	17	17
	Formal education	83	83
Occupation of HH head	Self-employed/Business	62	62
	GOV/NGO employed	21	21
	Daily wage	17	17
Monthly income	$\leq 10,000$ Taka	19	19
	10,001-20,000	49	49
	$\geq 20,001$	32	32

3.2. Prevalence of Household Food Insecurity in the Study Area

The mean (SD) dietary diversity score of households was 6.13 (± 1.31). 23 (23 %) households were poorly diverse dietary consumers (who consume ≤ 5 food groups), 49 (49%) households belonged to medium dietary diversity category (who consume 6-7 food groups) and 28 % of households are classified as diverse dietary consumers (who consume > 7 food groups). Based on set cutoff points, 6 (6%) households classified as mildly food insecure. Households classified as moderately and severely food insecure were 11 (11%) and 2 (2%), respectively (Figure 1).

The study finding reveals as 19 (19%) households worried about food inaccessibility and 23(23%) households were not able to eat the kinds of food they preferred due to lack of resources. Moreover, about 18 (18%) households reported that they did not consume a variety of food they prefer, 24 (24%) ate unwanted food, 28 (28%) ate small amount meal and 19 (19%) ate few meals per day. The proportion of households who experienced lack of food to eat was 3 (3%) and going to bed without eating were 4 (4%) based on the findings of this study (Table 2).

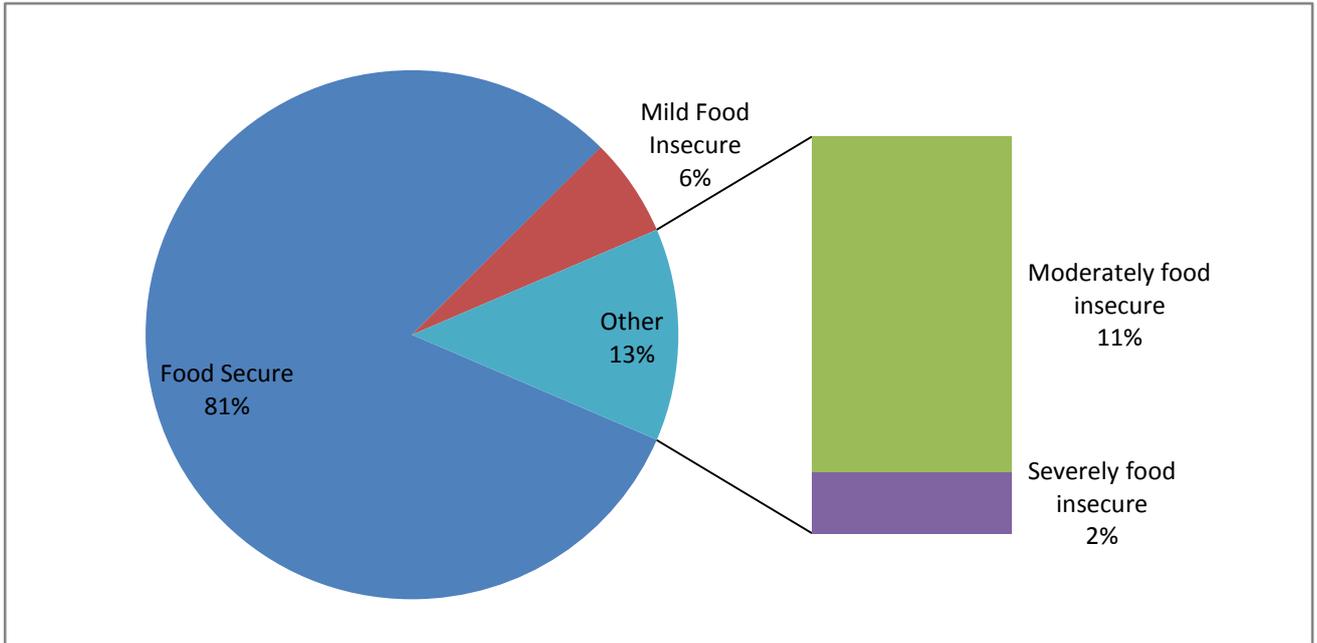


Figure 1. Household food security status

Table 2. Occurrence of HFIAS conditions

Indicator	No- N(%)	Yes- N(%)
Worry about not having enough food?	81 (81%)	19 (19%)
Unable to eat preferred food	77(77%)	23(23%)
Eat just a few kinds of food	82(82%)	18(18%)
Eat food really do not want	76(76%)	24(24%)
Eat smaller amounts in meal	72(72%)	28(28%)
Eat fewer meals in a day	81(81%)	19(19%)
No food of any kind in household	97(97%)	3(3%)
Go to sleep hungry at night	96(96%)	4(4%)
Go a whole day and night without food	100(100%)	0(0%)

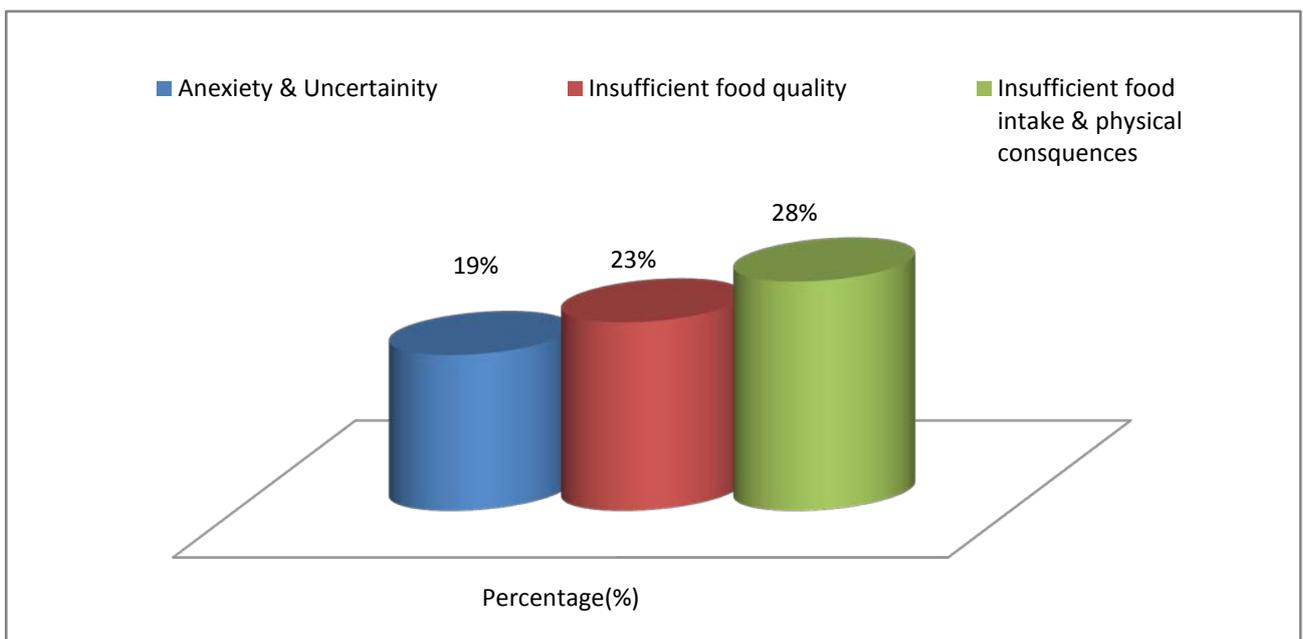


Figure 2. HFIAS domain showing percentage distribution of households

3.3. Domains of Household Food Insecurity

The nine items can further be summarized into three major domains: (I) feelings of uncertainty or anxiety about the household food supplies (represented by item 1), (II) perceptions that household food is of insufficient quality and food type preference (signified by items 2-4), and (III) insufficient food intake and its physical consequences (items 5-9). The computed percentage for anxiety and uncertainty domains was 19 (19%), for the insufficient food quality domain 23 (23%) and insufficient food intake and its physical costs domain was 28 (28%) in the study area (Figure 2).

4. Discussion

This study looked at the level of household food insecurity using validated HFIAS. A total of 19% households were food insecure (6%, 11 % and 2%, mildly, moderately and severely food insecure, respectively). The state of household food insecurity (37.6%) identified in this study was analogous with studies done in Shashemene (36%), Kenya (38%) and national report (35%) [10-13]. However, it was lower than findings reported by studies conducted in South Delhi and Malda district of India (77.2 and 68.38%), Kinshasa (70%), Addis Ababa city (75 and 58.2%), Dire Dawa town (43%), Farta district (70.7%), Manna district (42.9%), Offa district (57%) and Boloso Sore district (65.5%) [14-20]. The possible reason to variation might be the coincidence of the data collection with a harvest season, where food is more available and the prices are relatively low. Thus, lower household food insecurity in this study might be associated with harvesting season of the year where the study was performed. In contrary, the finding observed in this study tends to be higher than the findings of some studies such as Pakistan (19%), Humbo (28.4%) and urban areas of Ethiopia (28.0%) [21,22,23]. The disparity might be due to the agro-ecological differences in settings and socioeconomic variations among study areas.

5. Limitations of the Study

Data collection was done by HFIAS (relies on the recall of events occurred in the last four weeks). Concurrence of study period with harvest season might underestimate the situation of household food insecurity in the setting. Besides, overestimation or underestimation related to monthly income and expenditure of household were the possible limitations of this study.

6. Conclusions

The findings shown as higher extent of households were food insecure in the study area than national rate. Municipality, health and agriculture sector, and other stakeholders need to take action toward improving household food security state in the study area. Actions should focus on: strengthening micro-finance and small business enterprise to increase access to food via

amplified income, design strategies on household food security program [e.g., Productive Safety Net Program (PSNP)]; strengthening family planning methods, stabilization of food markets/prices and income generating activities should be encouraged. Besides, backup of saving practice to ensure resilience for food insecure households is also needed. Further studies are desirable to come across seasonal variations of household food insecurity in urban setting.

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