

Socio-demographic correlates of moderate to severe food insecurity in rural, non-slum urban and slum areas of Bangladesh: evidence from a nationally representative survey

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RATIONALE & OBJECTIVE

An understanding of the prevalence and socio-demographic correlates of food insecurity is crucial for achieving nutritional and developmental targets.

The evidence on the determinants of household food insecurity covering nationally representative sample at rural, non-slum urban and slum settings is limited.

The objective of this paper is to estimate the prevalence of food insecurity and identify factors associated with moderate to severe food insecurity in rural, non-slum urban, and slum areas of Bangladesh utilizing data of a nationally representative cross-sectional survey.

METHODS

Study design and areas: Cross-sectional study in all eight administrative divisions of Bangladesh.

Sampling procedure: Multi-stage cluster sampling. Separate sampling procedure for rural, non-slum urban, and slum areas. (250–400 households in each cluster).

Sample size: 17,323 households from 82 clusters. (Rural: 11,790; non-slum urban: 3,368; and slum: 2,165).

Data collection: Face to face interview using structured questionnaire in a tablet computer with customized KoboToolBox application during 2018-19.

Outcome variables: Household food insecurity (secure, mildly-, moderately- and severely- insecure) using the Household Food Insecurity Access Scale (HFIAS) (1).

Explanatory variables: A list of variables based on the literature review and data availability. The variables with a p value ≤0.2 in unadjusted analysis included in the adjusted analysis (2).

Data analysis: Stata (v17.0) software. Estimated weighted prevalence with 95% CI. Multivariable logistic regression was used to estimate the unadjusted and adjusted odds ratios (OR).

Ethical consideration: a) Ethical approval from Institutional Review Board of BRAC JGPSHP, BRAC University, and b) written informed consent and assent (for less than 18 years respondents) before starting the interview.

RESULTS

Prevalence

Nationally 16.9% of households were moderate to severely food insecure and this percentage was 17.0%, 15.0%, and 23.2% in rural, non-slum urban, and slum areas, respectively. Households with no education of household heads had the highest prevalence of moderate to severe food insecurity (50.2%) compared to their counterparts.

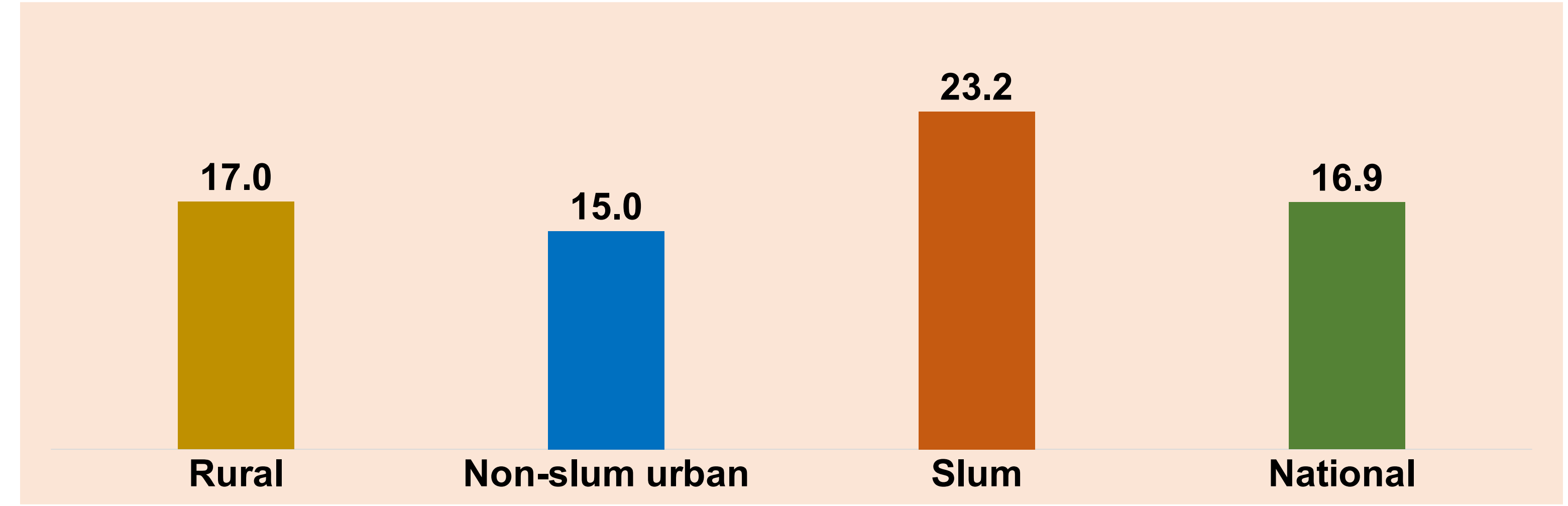


Figure 1: Percent distribution of households by moderate to severe household food insecurity according to HFIAS in Bangladesh (n=17,323), 2018-19

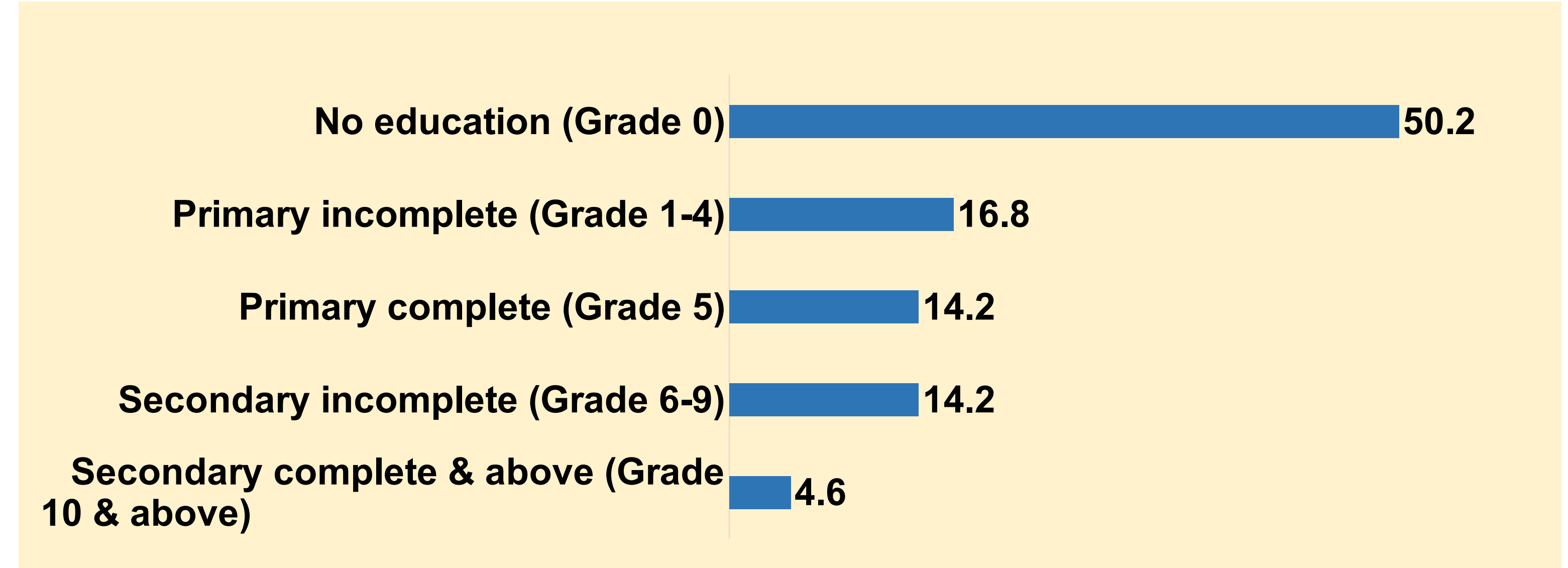


Figure 2: Percent distribution of households by moderate to severe household food insecurity by educational attainment of household heads in Bangladesh (n=17,323), 2018-19

Socio-economic determinants

Poor or no education of household heads, low household income, and not having improved sanitation were associated with food insecurity in all areas (rural, non-slum urban and slum).

Additionally, in rural areas, ≥60 years of age of household head, female headship, no remittance, having 0–9-year-old children, having 10–19-year-old adolescents, having less number of 20–59-year-old women and men, no livestock (cow or buffalo) ownership, and possession of no or <50 decimal agricultural lands were associated with moderate to severe food insecurity.

Explanatory variables	Rural	Non-slum urban	Slum
	Adjusted OR [95% CI]	Adjusted OR [95% CI]	Adjusted OR [95% CI]
Age in years			
20-29	Ref		Ref
30-39	1.01 [0.84, 1.22]		1.01 [0.73, 1.41]
40-49	1.14 [0.93, 1.41]	Not included	1.09 [0.76, 1.59]
50-59	1.08 [0.86, 1.35]		1.12 [0.73, 1.73]
60+	1.28 [1.01, 1.62] *		1.04 [0.67, 1.61]
Educational attainment			
No education (Grade 0)	2.80 [2.15, 3.64] *	3.84 [2.61, 5.63] *	2.55 [1.41, 4.62] *
Primary incomplete (Grade 1-4)	2.66 [2.01, 3.53] *	3.73 [2.39, 5.83] *	2.34 [1.24, 4.4] *
Primary complete (Grade 5)	2.17 [1.64, 2.88] *	2.79 [1.8, 4.31] *	2.24 [1.21, 4.16] *
Secondary incomplete (Grade 6-9)	1.72 [1.3, 2.28] *	1.78 [1.17, 2.69] *	1.32 [0.69, 2.51]
Secondary complete & above (Grade 10 & above)	Ref	Ref	Ref
Household headship			
Male	Ref		Ref
Female	1.23 [1.08, 1.41] *	Not included	0.86 [0.67, 1.1]
Religion			
Islam	1.03 [0.89, 1.19]	1.29 [0.79, 2.09]	Not included
Other than Islam	Ref	Ref	
Household with young children 0-9 years			
0	Ref		Ref
1	0.88 [0.77, 1] *	Not included	0.9 [0.7, 1.16]
≥ 2	1.14 [0.98, 1.32]		1.15 [0.86, 1.55]
Household with adolescents 10-19 years			
0	Ref		Ref
1	1.06 [0.94, 1.21]	Not included	1.18 [0.92, 1.52]
≥ 2	1.26 [1.09, 1.46] *		1.19 [0.89, 1.58]
Household with men 20-59 years			
0	1.27 [1.01, 1.58] *	0.84 [0.56, 1.25]	0.94 [0.63, 1.4]
1	1.05 [0.86, 1.29]	1.02 [0.71, 1.46]	1.15 [0.81, 1.64]
≥ 2	Ref	Ref	Ref
Household with women 20-59 years			
0	1.28 [0.99, 1.64]	0.81 [0.48, 1.36]	1.04 [0.67, 1.6]
1	1.24 [1.04, 1.47] *	1.02 [0.73, 1.43]	1.00 [0.73, 1.35]
≥ 2	Ref	Ref	Ref
Household with older adult 60 and above years			
0	1.06 [0.83, 1.34]		0.97 [0.53, 1.78]
1	1.16 [0.93, 1.44]	Not included	1.51 [0.86, 2.64]
≥ 2	Ref		Ref
Receive remittance			
No	1.32 [1.13, 1.55] *	Not included	Not included
Yes	Ref		
Monthly household income [median: 12,000 BDT]			
<median amount	3.27 [2.9, 3.68] *	4.07 [3.25, 5.17] *	5.06 [4.07, 6.29] *
≥ median amount	Ref	Ref	Ref
Receiving benefits from social safety net program			
Didn't receive benefits	Ref	Not included	Not included
Receive benefits	1.06 [0.95, 1.18]		
Household with improved sanitation			
No	1.77 [1.56, 2.00] *	2.32 [1.78, 3.04] *	1.86 [1.39, 2.49] *
Yes	Ref	Ref	Ref
Livestock ownership (Cow/buffalo)			
No	1.12 [1, 1.26] *		
Yes	Ref		
Livestock ownership (Sheep/goat/pig)			
No	Not included		
Yes			
Livestock ownership (Chickens/duck/geese)		Not applicable	Not applicable
No	1.08 [0.96, 1.2]		
Yes	Ref		
Ownership of agricultural land (decimal)			
0	2.22 [1.89, 2.62] *		
<50	1.28 [1.05, 1.57] *		
≥50	Ref		

IMPLICATIONS

- ☐ Moderate to severe food insecurity remains high in Bangladesh, particularly in slum areas and the factors associated with food insecurity differ by place of residence.
- ☐ Specific sets of socio-demographic factors should be considered to target and reach vulnerable groups while designing programs to improve food insecurity.
- ☐ Overall expansion in the coverage of social safety net programs (e. g., open market sales, price regulation, and market monitoring) with proper targeting can be undertaken as short-term measures to address food insecurity. Moreover, the social protection schemes should be extended to the non-slum urban areas.
- ☐ In the long-run, to address food insecurity efficiently, food system transformation is vital. The system approach allows to consider all relevant aspects related to food security including nutrition security and environmental protection.

References:
 (1) Coates, J., Swindale, A., & Bilinsky, P. (2007). Household Food Insecurity Access Scale (HFIAS) for measurement of food access: Indicator guide: version 3
 (2) Maldonado G, Greenland S. (1993). Simulation study of confounder selection strategies. Am J Epidemiol;138:923–36

