

# Household food and water insecurity are positively associated with high perceived stress during COVID-19 lockdown: Evidence from a low-middle income country

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## Abstract

The COVID-19 pandemic has increased the risk of global public health and has the potential to cause severe food and water insecurity due to economic recession during lockdown for people living in low-middle income countries like Bangladesh where capital resources are scarce. There is growing evidence that household food and water insecurity has been associated with poor psychological outcomes. The objective of this study was to determine the association between household food and water insecurity with mental health and whether these differed among urban-rural households. A cross-sectional online survey was conducted with 545 participants immediately after the COVID-19 lockdown period in Bangladesh (August 1-September 30, 2020). Household food and water security were determined using a 9-item Household Food Insecurity Access Scale (HFIAS) (score range 0-27) and a 12-item Household Water Insecurity Experiences (HWISE) scale (score range 0-36), respectively. The Perceived Stress Scale (PSS) was used to evaluate mental health. Multivariable logistic regression examined the association between household food and water insecurity with perceived stress, adjusting socioeconomic characteristics. An urban-rural stratified analysis was also performed. About 72.84% (397) respondents reported high stress and more than 70% of households suffered from food and water insecurity during the lockdown period. After adjusting covariates, logistic regression model results show that food insecurity was associated with a 1.07-point increase in high perceived stress (OR=1.07, 95% CI=1.01-1.11,  $p<0.01$ ) while water insecurity was associated with 1.03 times greater odds of high perceived stress (OR=1.03, 95% CI=0.93-1.23,  $p<0.05$ ). In stratified analysis, only food insecurity was associated with high perceived stress in the urban household (OR=1.08, 95% CI=1.00-1.11,  $p<0.05$ ). However, none of the household insecurity was associated with perceived stress in rural households. Interventions that promote equal access to resources for low-income individuals will likely to be more effective to alleviate economic burden of pandemic.

## Household Food and Water Insecurity are Positively Associated with High Perceived Stress During COVID-19 Lockdown: Evidence from a Low-Middle Income Country

Muhammad Mainuddin Patwary<sup>1,2\*</sup>, Md. Zahidul Haque<sup>1,2</sup>, Mondira Bardhan<sup>1,2</sup>, Asma Safia Disha<sup>1,4</sup>, Sharif Mutasim Billah<sup>1,2</sup>, Md. Pervez Kabir<sup>1,5</sup>, Md. Riad Hossain<sup>3</sup>, Md. Ashraful Alam<sup>6</sup>

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**Keywords:** Food security, water security, COVID-19, Bangladesh, mental health

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