

## Glycemic Control in Rice Consumption among Households with Diabetes Patients: The Role of Food Security

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**Abstract :** Dietary behaviour is a crucial factor affecting diabetes control. With increasing rates of diabetes prevalence in Asian countries, examining their dietary patterns, which are largely based on rice, is timely required. It has been identified that higher consumption of some rice varieties is associated with increased risk of type 2 diabetes. Although diabetes patients are advised to consume healthier rice varieties, which contains low glycemic, several conditions, one of which food insecurity, make them difficult to preserve those healthy dietary guidelines. Hence this study tries to investigate how food security affects on making right decisions of rice consumption within diabetes affected households using a sample from Sri Lanka, a country which rice considered as the staple food and records the highest diabetes prevalence rate in South Asia. The study uses data from the Household Income and Expenditure Survey 2016, a nationally representative sample conducted by the Department of Census and Statistics, Sri Lanka. The survey used a two-stage stratified sampling method to cover different sectors and districts of the country and collected micro-data on demographics, health, income and expenditures of different categories. The study uses data from 2547 households which consist of one or more diabetes patients, based on the self-recorded health status. The Household Dietary Diversity Score (HDDS), which constructed based on twelve food groups, is used to measure the level of food security. Rice is categorized into three groups according to their Glycemic Index (GI), high GI, medium GI and low GI, and the likelihood and impact made by food security on each rice consumption categories are estimated using a Two-part Model. The shares of each rice categories out of total rice consumption is considered as the dependent variable to exclude the endogeneity issue between rice consumption and the HDDS. The results indicate that the consumption of medium GI rice is likely to increase with the increasing household food security, but low GI varieties are not. Households in rural and estate sectors are less likely and Tamil ethnic group is more likely to consume low GI rice varieties. Further, an increase in food security significantly decreases the consumption share of low GI rice, while it increases the share of medium GI varieties. The consumption share of low GI rice is largely affected by the ethnic variability. The effects of food security on the likelihood of consuming high GI rice varieties and changing its shares are statistically insignificant. Accordingly, the study concludes that a higher level of food security does not ensure diabetes patients are consuming healthy rice varieties or reducing consumption of unhealthy varieties. Hence policy attention must be directed towards educating people for making healthy dietary choices. Further, the study provides a room for further studies as it reveals considerable ethnic and sectorial differences in making healthy dietary decisions.

**Keywords :** diabetes, food security, glycemic index, rice consumption

**Conference Title :** ICEM 2020 : International Conference on Economics and Management

**Conference Location :** Copenhagen, Denmark

**Conference Dates :** June 11-12, 2020