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## Food Insecurity, Food Behaviours, Mental Wellbeing and Diet Quality: A Nationally Representative Cross-Sectional Investigation during the UK Cost of Living Crisis

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- Michèle Renard (Department of Nutritional Sciences, School of Life Course & Population Sciences, Kings College London, London)
- Ysabel Standish (Department of Nutritional Sciences, School of Life Course & Population Sciences, Kings College London, London)
- Zoë Bell (Department of Nutritional Sciences, School of Life Course & Population Sciences, Kings College London, London)
- Christian Reynolds (Centre for Food Policy, City University, London)
- Carla A. Martins (Center for Epidemiological Research in Nutrition and Health, University of Sao Paulo, Sao Paulo; Institute of Food and Nutrition, Federal University of Rio de Janeiro, Macaé, RJ)
- Angela Flynn (School of Population Health, Royal College of Surgeons in Ireland, Dublin)

- Fiona Lavelle (Department of Nutritional Sciences, School of Life Course & Population Sciences, Kings College London, London)

## Introduction

In the 12-month period leading up to March 2023, inflation in the UK increased by 8.9%<sup>(1)</sup>. Notably, the annual inflation rate for food and non-alcoholic beverages reached a peak of 19.2% in March 2023, marking a 45-year high<sup>(1)</sup>. Concurrently, research conducted between October 2022 and January 2023, revealed that 25% of adult respondents were classified as food insecure<sup>(2)</sup>. Food insecurity disproportionately affects young families, ethnic minorities, and individuals with disabilities, and correlates with poorer mental health, higher rates of obesity, and lower dietary quality. However, improving skills in cooking, meal planning, and budget shopping may alleviate some of the adverse health consequences associated with food insecurity. This study aimed to investigate the relationships between food insecurity, mental wellbeing, dietary quality, and food behaviours among a nationally representative sample of UK adults and was pre-registered (<https://osf.io/zfmhd>).

## Methods

Observational data on food insecurity and mental wellbeing in addition to diet quality and food behaviours, were captured in April 2023, using a cross-sectional survey and validated measures where available. Ethical approval was received from King's College London (Ref: LRS/DP-22/23-35412). Data analysis consisted of chi-square tests of homogeneity, Kruskal-Wallis H tests and hierarchical multiple regression modelling with adjustment of relevant covariates, using SPSS Statistics v29.0.2. The significance threshold was set at  $p < 0.05$ .

## Results

A nationally representative sample of UK adults ( $n = 1493$ ) was obtained. Quotas ( $\pm 5\%$ ) for age, gender, UK region and socioeconomic status, were achieved. Within the sample, 35.9% were classified into groups of either low (22.2%) or very low (13.7%) food security<sup>(3)</sup>. Analyses revealed significantly higher proportions of females, individuals with lower income, and those of non-white ethnicity in the low or very low food security groups compared to groups with higher levels of food security ( $p < 0.05$ ). Participants in the low or very low food security groups exhibited lower mental wellbeing scores and consumed fewer fruits and vegetables per day compared to those with higher food security ( $p < 0.05$ ). Hierarchical regression models explained 28.5% of the variance in mental wellbeing scores and 16.4% in daily fruit and vegetable intake. Notably, variables related to food behaviour, such as food engagement and cooking skills confidence, significantly added to the variance explained by the models ( $p < 0.001$ ), even after controlling for factors such as food insecurity score and income, respectively.

## Conclusion

This study reveals the substantial prevalence of food insecurity among UK adults, whilst also highlighting its associations with mental wellbeing and dietary quality, particularly among higher risk groups. The findings emphasise the urgent need for targeted interventions. Implementing programs focused on enhancing cooking skills and wider food behaviours could serve to mitigate some of the adverse health consequences associated with food insecurity, leading to improvements in overall wellbeing.

## Topics

- The Nutrition and optimum life course Theme is defined by activities encompassing exercise and Sports Nutrition, healthy ageing, weight management, pregnancy/childhood/adolescence; alternative diets such as vegetarianism/veganism; chrono-nutrition.

## Additional Info

References - Please read the instructions.:

1. Office for National Statistics (ONS) (2023) *Consumer price inflation, UK: March 2023* [Available at: <https://www.ons.gov.uk/economy/inflationandpriceindices/bulletins/consumerpriceinflation/march2023>]
2. Food Standards Agency (FSA) (2023) *F&Y2 Wave 6* [Available at: <https://doi.org/10.46756/sci.fsa.djj797>]
3. Connors C, Malan L, Esposito M et al. (2022) *The UK Publics Interests, Needs and Concerns Around Food* [Available at: <https://doi.org/10.46756/sci.fsa.ihw534>]

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Author and institution address M. Renard1\*, Y. Standish1\*,  
- Please read the instructions: Z. Bell1, C. Reynolds2, C. A Martins3,4A. Flynn1,5, and F. Lavelle1  
1. Department of Nutritional Sciences, School of Life Course & Population

Sciences, Kings College  
London, London, UK. 2.  
Centre for Food Policy, City  
University, London, UK. 3.  
Center for Epidemiological  
Research in Nutrition and  
Health, University of Sao  
Paulo, Sao Paulo, Brazil. 4.  
Institute of Food and  
Nutrition, Federal University  
of Rio de Janeiro, Macaé, RJ,  
Brazil. 5. School of Population  
Health, Royal College of  
Surgeons in Ireland, Dublin,  
Ireland. \*Equal Contribution

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