

## Abstract

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# Doctors' and nurses' dietary intake during shift work: findings from the UK Biobank Study

K. Sum<sup>1</sup>, A. Cheshire<sup>2</sup>, D. Ridge<sup>2</sup>, D. Sengupta<sup>3</sup> and S. Deb<sup>4</sup>

<sup>1</sup>Department of Sports and Health, Southampton Solent University, Southampton, UK; <sup>2</sup>School of Social Sciences, College of Liberal Arts and Sciences, University of Westminster, London, UK; <sup>3</sup>Health Data Sciences Research Group, Centre for Optimal Health, School of Life Sciences, College of Liberal Arts and Sciences, University of Westminster, London, UK and <sup>4</sup>School of Psychology and Sport Science, Anglia Ruskin University, Cambridge, UK

Doctors' and nurses' (DNs) wellbeing in the National Health Service is important for ensuring safe healthcare delivery. However, demanding worker responsibilities, including irregular shift work, can significantly impact their health. These irregular working patterns are associated with higher sickness rates and stress among healthcare professionals due to the inherent challenges of the work <sup>(1,2)</sup>. Shift work, in particular, disrupts sleep patterns and impairs cognitive function and performance, leading to poorer physiological and cardiovascular health <sup>(3)</sup>. Furthermore, workforce shortages and difficulties adapting to a consistently demanding workload impact patient care delivery <sup>(4)</sup>. Workplace nutrition can support health, offsetting some of these issues. However, there is a limited understanding of DN's dietary intake during shift work. Using the UK Biobank dataset, an open-access dataset of a prospective cohort study recruited from England, Scotland and Wales <sup>(5)</sup>, this research aimed to understand DN's dietary intake against different shift work patterns.

To meet our research aim, Mann-Whitney U tests were used to explore the differences between doctors and nurses with different shift work patterns.

Of the 5,777 participants of doctors (n=1,962) and nurses (n=3,815) doing shift work, results indicated limited consumption of fruits, vegetables, fish and dietary fibre, as well as a high intake of meat, tea, coffee, and alcohol. Statistical significant differences in dietary intake were observed between DN's, with doctors consuming more unprocessed red meat per week (2.176 vs 2.053 portions, p<0.001), cups of coffee per day (1.57 vs 1.30 cups; p<0.001), and alcohol intake per week (63.146g vs 40.261g, p<0.001) than nurses. Meanwhile, nurses had a higher average consumption than doctors of fruit (2.840 vs 2.657 portions) and vegetables (2.415 vs 2.349 portions) (p<0.001), tea (3.14 vs 2.18 cups) and water (2.60 vs 1.40 cups) (p<0.001).

Various shift work factors influence dietary intake. Longer working hours and more frequent and consecutive night shifts were associated with poorer dietary behaviour, including reduced vegetable and meat intake and increased tea and coffee consumption. Doctors consumed less fruit when working over 30 hours per week (p=0.037) and on consecutive (p=0.020) and night shifts (p=0.048).

Our results suggest that DN's dietary intake is sub-optimal to recommended dietary guidelines. Shift work contributes to poorer workplace nutrition and health, especially during night shifts when access to nutritious food is limited. Doctors appeared to be more affected than nurses. Further research should explore practical strategies to consider the diverse working patterns to improve DN nutrition according to public health and dietary recommendations.

## References

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