



This is a repository copy of *Longitudinal clustering of risk behaviours and their association with multimorbidity in older adults*.

White Rose Research Online URL for this paper:

<https://eprints.whiterose.ac.uk/206442/>

Version: Published Version

---

**Article:**

Suhag, A. [orcid.org/0000-0003-4711-4999](https://orcid.org/0000-0003-4711-4999), Webb, T.L. and Holmes, J. (2023) Longitudinal clustering of risk behaviours and their association with multimorbidity in older adults. *European Journal of Public Health*, 33 (Supplement 2). ckad160.363. ISSN 1101-1262

<https://doi.org/10.1093/eurpub/ckad160.363>

---

**Reuse**

This article is distributed under the terms of the Creative Commons Attribution-NonCommercial (CC BY-NC) licence. This licence allows you to remix, tweak, and build upon this work non-commercially, and any new works must also acknowledge the authors and be non-commercial. You don't have to license any derivative works on the same terms. More information and the full terms of the licence here: <https://creativecommons.org/licenses/>

**Takedown**

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing [eprints@whiterose.ac.uk](mailto:eprints@whiterose.ac.uk) including the URL of the record and the reason for the withdrawal request.



[eprints@whiterose.ac.uk](mailto:eprints@whiterose.ac.uk)  
<https://eprints.whiterose.ac.uk/>

**Abstract citation ID: ckad160.363**  
**Longitudinal clustering of risk behaviours and their association with multimorbidity in older adults**

**Alisha Suhag**

*A Suhag<sup>1,3</sup>, TL Webb<sup>2</sup>, J Holmes<sup>3</sup>*

<sup>1</sup>Healthy Lifespan Institute, University of Sheffield, Sheffield, UK

<sup>2</sup>Department of Psychology, University of Sheffield, Sheffield, UK

<sup>3</sup>School of Health and Related Research, University of Sheffield, Sheffield, UK

Contact: asuhag1@sheffield.ac.uk

Smoking, unhealthy nutrition, alcohol consumption, and physical inactivity (SNAP risk behaviours) are leading risk factors for multimorbidity and tend to cluster within specific subpopulations. Little is known about how these clusters change with age in older adults and their association with multimorbidity. Repeated measures latent class analysis using data from Waves 4-8 of the English Longitudinal Study of Ageing (n = 4759) identified clusters of respondents with common patterns of SNAP behaviours over time. Disease status (from Wave 9) was used to assess eight body system disorders, multimorbidity, and complex multimorbidity. Logistic regressions examined how clusters were associated with socio-demographic characteristics and disease status. Seven clusters were identified: Low-risk (13.4%), Low-risk yet inactive (16.8%), Low-risk yet heavy drinkers (11.4%), Abstainer yet inactive (20%), Poor diet and inactive (12.9%), Inactive, heavy drinkers (14.5%), and High-risk smokers (10.9%). There was little evidence these clusters changed with age. Clusters characterised by physical inactivity (in combination with other risky behaviours) were associated with lower levels of education and wealth. The heavy drinking clusters were predominantly male. Compared to other clusters, Low-risk and Low-risk yet heavy drinkers had a lower prevalence of all diseases studied. In contrast, the Abstainer but inactive cluster comprised mostly women and had the highest prevalence of multimorbidity, complex

multimorbidity, and endocrine disorders. High-risk smokers were most likely to have respiratory disorders. Health-risk behaviours tend to be stable as people age and ought to be addressed early. By identifying seven clusters of older adults with distinct behaviour patterns, socio-demographic characteristics, and disease prevalence, our study provides valuable information for identifying high-risk subpopulations and tailoring interventions to their behaviour patterns and socio-demographic profiles.

**Key messages:**

- We identified seven clusters of older adults with distinct behaviour patterns, socio-demographic characteristics and disease prevalence.
- Health-risk behaviours tend to be stable as people age and ought to be addressed early.