

Feeling Healthy, Skipping Screening?

Self-Perceived Health and Inequalities in Colorectal Cancer Screening Attendance across European Countries

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Introduction

Colorectal cancer (CRC) is the second leading cause of cancer-related death in Europe. However, due to its slow progression, there is a substantial window of opportunity for screening and early detection (Keum & Giovannucci, 2019). Organized, population-based CRC screening programs have been rolled out across many European countries, following the recommendations of the European Commission (European Commission, 2022). Despite these efforts, participation remains suboptimal in several regions, and persistent social inequalities in screening uptake have been documented (Bozhar et al., 2022; Parente et al., 2009; Willems & Bracke, 2018).

Previous research has largely focused on structural and socioeconomic determinants of screening behavior, such as education, income, or healthcare access. Yet, in addition to these well-established factors, psychological and perceptual aspects, such as self-perceived health (SPH), may also shape preventive behavior.

To date, the role of SPH in CRC screening behavior has received relatively little attention. This study aims to examine whether, and to what extent, self-perceived health is associated with CRC screening non-attendance across European countries to highlight the potential role of SPH in influencing preventive behavior.

Data and methods

Inequalities in CRC screening attendance were analyzed using data from the third wave of the cross-sectional survey European Health Interview Survey (EHIS 2019). The survey aims to measure health characteristics, use of health care and access to it among the European general population and includes also some basic demographic characteristics, such as sex, age and various socio-economic variables.

The CRC screening non-attendance was derived based on two variables – *self-reported last FOBT* (question: ‘When was the last time you had a faecal occult blood test?’, options: ‘within the past 12 months’, ‘1 to less than 2 years’, ‘2 to less than 3 years’, ‘3 years or more’, and ‘never’) and *self-reported last colonoscopy* (question: ‘When was the last time you had a colonoscopy?’, options: ‘within the last 12 months’, ‘1 to less than 5 years’, ‘5 to less than 10 years’, ‘10 years or more’, and ‘never’). These responses were combined into a single dichotomous binary dependent variable with two values ‘*attended at least once in a lifetime*’ and ‘*never attended*’. The subpopulation of men and women aged 50–74 years was selected for the analysis (it is the recommended target group for screening, according to the European Commission (2022)).

For the independent variables we used *the self-perceived general health variable* (question: ‘How is your health in general? Is it...’, options: ‘very good’, ‘good’, ‘fair’, ‘bad’, ‘very bad’) where ‘very good’ means the person is feeling generally in different dimensions of health and a second variable, educational attainment level, which we categorized according to the ISCED 2011 into three levels: low education (ISCED 0–2), medium education (ISCED 3–4), and high education (ISCED 5–8).

The calculations were done using binary logistic regression models on weighted data with SPH (‘very good’ to ‘very bad’) as the main predictor, controlled for age and education. They were tested separately for each sex and stratified by country. Additional pooled models including all countries were calculated and stratified by educational level to examine the robustness of the association. The ORs of lifelong CRC screening non-attendance for individuals with different SPH are presented. Altogether, available microdata from 29 countries were provided and analyzed. In total, 118,398 individuals were analyzed (56,426 men and 61,972 women).

Preliminary Results

SPH was a statistically significant predictor of CRC screening non-attendance in approximately half of the tested European countries – 12 for men and 15 for women. In all countries where the association was significant, a consistent inverse gradient emerged: individuals with worse SPH had lower odds of screening non-attendance, suggesting they were more likely to participate in screening than those reporting ‘very good’ health.

Although the strength of the estimates varied, the direction of association remained stable across countries. This consistency suggests that subjective health plays a meaningful role in shaping screening behavior across diverse healthcare contexts, independent of national-level variation in screening policies or systems.

In the pooled model across all 29 European countries together, SPH was still a strong predictor of CRC screening behavior. Compared to individuals reporting ‘very good’ health, those with worse SPH had significantly lower odds of screening non-attendance, indicating higher likelihood of participation. For example, among men, ORs for non-attendance were 0.71 (‘good’), 0.69 (‘fair’), 0.53 (‘bad’), and 0.46 (‘very bad’). Among women, corresponding ORs were 0.86, 0.74, and 0.59 (Figure 1). These patterns show a clear inverse gradient.

We first estimated pooled models for men and women separately, controlling for age and education. To assess whether the association could be explained by differences in educational attainment, we then ran models stratified by educational level. Results remained consistent across subgroups, suggesting that SPH influences screening behavior independently of education.

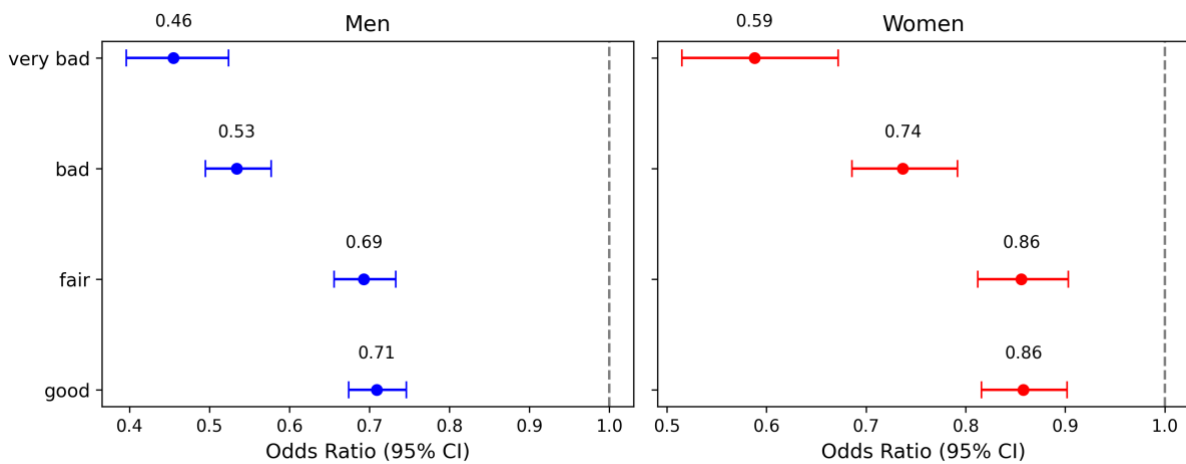


Figure 1: Chances of colorectal cancer screening non-attendance by the level of self-perceived health, results of binary logistic regression, pooled model, EHIS 2019

Conclusion

Subjective health status appears to be an important and independent factor influencing CRC screening behavior across Europe. The observed inverse gradient, where individuals reporting worse health are more likely to attend screening, persists across most countries, genders, and educational groups. These findings suggest that beyond structural barriers, psychological perceptions may play an important role in determining preventive behavior.

In particular, individuals who perceive themselves as healthy may underestimate their vulnerability to disease, and as a result, may be less motivated to engage in preventive services such as CRC screening. Interventions aimed at increasing screening uptake may benefit from addressing these barriers and the misperception of personal risk among those who feel healthy.

References

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Data availability

Anonymized microdata from EHIS 2019 (Wave 3) are available for research purposes upon request to Eurostat.