Trends in socioeconomic inequalities in cardiometabolic risk factors: Analysis of the repeated cross-sectional Health Surveys for England between 2003 and 2019.

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Competing interests

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Authors' contributions

FO led the design of the study and performed statistical analysis and wrote the first draft of the abstract. All authors contributed to the design of the study and reviewed the abstract. All authors are the guarantors. The corresponding author attests that all listed authors meet authorship criteria and that no others meeting the criteria have been omitted.

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Background

Non-communicable diseases (NCDs) are the leading cause of death and disability globally, accounting for 89% of all deaths in the UK with the most significant cause being from cardiovascular diseases (CVD). The risk of NCD mortality and morbidity is highest for individuals in the most deprived socio-economic positions (SEPs). Cardiometabolic risk factors are the main risk factors for mortality from NCDs including CVDs but limited studies have examined recent trends in inequalities in these risk factors. This study examines national trends in inequalities of four key cardiometabolic risk-factors and their co-occurrence in England from 2003-2019.

Methods

This time-trend analysis used sex-specific, repeated cross-sectional self-reported and examination data from adults aged 16+ (N=155,226), from pooled nationally representative Health Survey for England 2003-2019, collected via trained interviewers and nurses in participants' homes. Log-gaussian regression models were used to examine the relative index of inequalities (RII) and slope index of inequalities (SII) in four cardiometabolic risk factors: obesity, hypercholesterolaemia (using total cholesterol, for comparability with similar studies using same data source), hypertension and diabetes, and their co-occurrences, using four different indicators of SEP (area deprivation, education, equivalised household income and occupational status).

Findings

From 2003 to 2019, hypercholesterolaemia and hypertension prevalence decreased significantly for both sexes, while obesity increased and diabetes remained stable. Lower SEPs consistently had higher prevalence of obesity, hypertension and diabetes, but lower prevalence of hypercholesterolaemia for both sexes. For women, relative ($p=0.011$) and absolute ($p<0.001$) inequalities in obesity by neighbourhood deprivation and absolute inequality by equivalised income ($p=0.033$) widened, with those in lower SEP reporting higher prevalence. For hypertension, relative inequality by education widened for men ($p=0.036$) while absolute inequality by education narrowed for women ($p=0.009$). Women also experienced widening inequalities in hypercholesterolaemia for most SEP measures, but favouring those in lower SEPs. For co-occurrence of risk factors, women saw a narrowing of inequalities by education (relative and absolute) and income (absolute).

Interpretations

Structural interventions targeting lower SEPs are necessary to address these trends in inequalities in England. The continued increase in obesity prevalence and widening of both absolute and relative inequalities in women by neighbourhood deprivation requires urgent action.