Submission Id: 3814

Title

Associations between a weighted health behaviour score, socioeconomic status, and all-cause mortality in UK Biobank cohort.

Priority 1 (Research Category)

Population health and epidemiology

Presenters

Hamish Foster, BSc, MBBS, DTMH, Jason Gill, PhD, BSc MSc FHEA FRCPE, Frances Mair, MD, FRCGP, Bhautesh Jani, PhD, MB ChB, MRCGP, Kate O'Donnell, PhD, BSc, MPH, BSc (Hons), FHEA, FRCGP (Hon)

Abstract

Context

Health behaviour scores are associated with disproportionate mortality in deprived populations. However, previous studies lack weighted scores or examine few behaviours. A score that accounts for both the relative effects of a wide range of behaviours and socioeconomic factors could inform policy and be developed to convey personalised risk.

Objective

Create a weighted health behaviour score and examine for effects of socioeconomic deprivation on association between score and all-cause mortality.

Study Design and Analysis

Cox proportional hazard models of baseline self-reported health behaviour data prospectively linked to registries. Models adjusted for sociodemographics and health conditions. Mortality associated with each behaviour determined score weighting.

Dataset

UK Biobank cohort (n=502,459) recruited 2006-2010.

Population Studied

220,197 participants with complete data.

Intervention/Instrument

Behaviours: smoking, alcohol, physical activity, TV time, sleep, added salt, social isolation, and intake of red meat, processed meat, oily fish, and fruit and vegetables. Behaviours were classified as unhealthy according to national guidelines or latest evidence. Socioeconomic deprivation was measured by Townsend deprivation index; an area-based measure comprising car ownership, household overcrowding, owner occupation, and unemployment.

Outcome Measures

All-cause mortality

Results

Over a median follow up of 11.6 years, 9,739 (4.1%) participants died. Compared to no unhealthy behaviours, each behaviour was associated with all-cause mortality. Smoking and social isolation were associated with notably higher mortality; HR (95%CIs): 2.47 (2.25-2.70) and 1.69 1.54-1.86), respectively. Awarding 1 point for each 40% increment in risk resulted in awarding smoking 4 points, social isolation 2 points, and all other behaviours 1 point each. There was a dose-response increment for all-cause mortality HR with each additional point of weighted score. Associations were stronger in more deprived tertiles. With least deprived and lowest score as reference, HRs (95%CIs) for highest score were 2.80 (1.73-2.89) in the least deprived and 3.58 (3.16-4.06) in the most deprived.

Conclusions

A comprehensive weighted health behaviour score has strong associations with mortality and associations are stronger in more deprived participants. A weighted behaviour score that accounts for socioeconomic deprivation could be developed to communicate personalised risk.