Aging in Good Health

Changes in self-reported health trajectories with focus on an ageing cohort from the Tromsø study

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BACKGROUND AND AIM

Self-Reported Health (SRH) is a known predictor of future health outcomes, health service use and mortality even in populations without known lower disease burden (1). It is a well-established indicator of health status and changes. SRH can be assessed by different methods (2). The Tromsø Study allows estimations of the impact of a broad range of factors in the general population, using surveys and physical examinations in a large representative sample (3). We aimed to describe factors that affect self-reported health over time and to explain differences in trajectories in an ageing cohort according to comorbid diseases, mental health, physical condition, socio-economic status, and physical activity.

METHODS

The Tromsø Study consists of six repeated population health surveys (4). We included 18,209 participants in at least two of the four surveys administered between 1986 and 2008. We excluded subjects with missing SRH values from the analysis (n=1464). The present analysis thus included 8232 men and 8723 women.

The participants completed well-validated questionnaires that included questions on a broad range of diseases, symptoms, health behavior, social conditions, education, and level of physical activity. SRH was reported by answering the survey question 'what is your current state of health?' in a range from Poor (1) to Very Good (4).

STATISTICAL ANALYSIS

We considered a model that included Age (and Period) as covariates as well as gender, pathology (comorbid diseases and mental health symptoms), physical examination measurements (resting heart rate, BMI, hypertension and hyperlipidemia), social context (education, marital status and living alone) and health-related behaviour (smoking habits and physical exercise). We started by modelling the time as linear, than quadratic, cubic and quadratic. We also modelled interaction between all covariates with age. Interaction coefficients with p>.05 were removed from the model one at a time until we reached the final model.

The table shows the results from the random-coefficient proportional odds model. Odds ratio below 1 estimates that a subject would score their SRH lower as compared to the reference category.

We used latent trajectory models to assess how SRH changes over time. The model explicitly model the shape of trajectories of individual subjects over time, based on occasion- and subject-level covariates. The model thus also allows us to identify subgroups that have different trajectories and also which factors affect SRH over time at an individual level. By adding the age and the time at the measurements, we can analyse both the longitudinal change due to increasing age and the between-subject effects as a result of belonging to different groups.

REFERENCES


WHAT CAN WE TELL ABOUT AGING?

Aging is an independent factor influencing SRH. Disease or mental illness symptoms are the most important factor for SRH. The Tromsø Study suggests that low BMI and exercise levels become increasingly important especially as the population ages.

The steepest decline of SRH was in middle and when passing life expectancy. SRH decreased differently over time for men and women. The most important factors determining SRH was mental health symptoms (28%), specific medical conditions (23%) and age (21%), which in combination explained 54.1% of the variance.

The graph visualise the health trajectories according to the fully fitted model (figure 2).