Author's response to reviews

Title: Trends in prevalence of four modifiable ischaemic heart disease risk factors by educational level and gender in The Nord-Trøndelag Health Study 1984-2008

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Background: There has been an overall decrease in incident ischaemic heart disease (IHD), but the reduction in IHD risk factors has been greater among those with higher social position. Increased social inequalities in IHD mortality in Scandinavian countries is often referred to as the Scandinavian “public health puzzle”. The objective of this study was to examine trends in absolute and relative educational inequalities in four modifiable ischaemic heart disease risk factors (smoking, diabetes, hypertension and high total cholesterol) over the last three decades among Norwegian middle-aged women and men.

Methods: Population-based, cross-sectional data from The Nord-Trøndelag Health Study (HUNT): HUNT 1 (1984-1986), HUNT 2 (1995-1997) and HUNT 3 (2006-2008), women and men 40-59 years old. Educational inequalities were assessed using the Slope Index of Inequality (SII) and The Relative Index of Inequality (RII).

Results: Smoking prevalence increased for all education groups among women and decreased in men. Relative and absolute educational inequalities in smoking widened in both genders, with significantly higher absolute inequalities among women than men in the two last surveys. Diabetes prevalence increased in all groups. Relative inequalities in diabetes were stable, while absolute inequalities increased both among women (p=0.05) and among men (p=0.01). Hypertension prevalence decreased in all groups. Relative inequalities in hypertension widened over time in both genders. However, absolute inequalities in hypertension decreased among women (p=0.05) and were stable among men (p=0.33). For high total cholesterol relative and absolute inequalities remained stable in both genders.

Conclusion: Widening absolute educational inequalities in smoking and diabetes over the last three decades gives rise to concern. The mechanisms behind these results are less clear, and future studies are needed to assess if educational inequalities in secondary prevention of IHD are larger compared to educational
inequalities in primary prevention of IHD. Continued monitoring of IHD risk factors at the population level is therefore warranted. The results emphasise the need for public health efforts to prevent future burdens of life-style-related diseases and to avoid further widening in socioeconomic inequalities in IHD mortality in Norway, especially among women.

Keywords: Trends, socioeconomic inequalities, gender differences, ischaemic heart disease risk factors, smoking, diabetes, hypertension, high total cholesterol