Childhood psychosocial adversity and adult neighborhood disadvantage as predictors of cardiovascular disease

Childhood adverse psychosocial factors, such as parental divorce and long - term financial difficulties, have been linked to increased risk of cardiovascular disease. This is also the case for neighborhood socioeconomic disadvantage in adulthood. However, the combined effect of childhood adverse psychosocial factors and neighborhood socioeconomic disadvantage on disease risk is not known. In this study, we used survey and register data to examine whether exposure to adverse psychosocial factors in childhood and to neighborhood disadvantage in adulthood are associated with an increased risk of cardiovascular disease in a large adult population. In accordance with a pathway model, we hypothesized that the effects of the two exposures are such that individuals with both; psychosocial adversity in childhood and neighborhood adversity in adulthood, would have a higher cardiovascular disease risk than those with only one or none of such exposures.

Fig. 1. Childhood psychosocial adversity and adult neighborhood disadvantage as distal risk factors for cardiovascular disease.

Participants were 37 699 local government employees from the Finnish Public Sector study, in a wide range of occupations from city administrators and doctors to semiskilled cleaners, who responded to a survey on childhood psychosocial adversities and adult cardiovascular disease risk behaviors in 2008/09. Survey data were linked to national registers on hospitalization, mortality, and prescriptions to assess cardiovascular disease risk factors in 2008/09 and to ascertain incident cardiovascular disease (coronary heart disease or cerebrovascular disease) between the survey and the end of follow-up, December 2011 (mean follow-up time 2.94 years, SD=0.44). Data on neighborhood disadvantage was obtained from the Statistics Finland's grid database and linked to each participant using GPS-coordinates of residential addresses.

Childhood psychosocial adversity was assessed in the survey, by asking if the participants had experienced the following in their childhood: divorce/separation of the parents, long-term financial difficulties in the family, serious conflicts in the family, frequent fear of a family member, serious or

chronic illness of a family member, and alcohol problem of a family member. Neighborhood disadvantage was defined based on national information on median household income (coded inversely), unemployment rate, and the proportion of those with a low level of education in each neighborhood (i.e., 250m×250m map grid) in 2008.

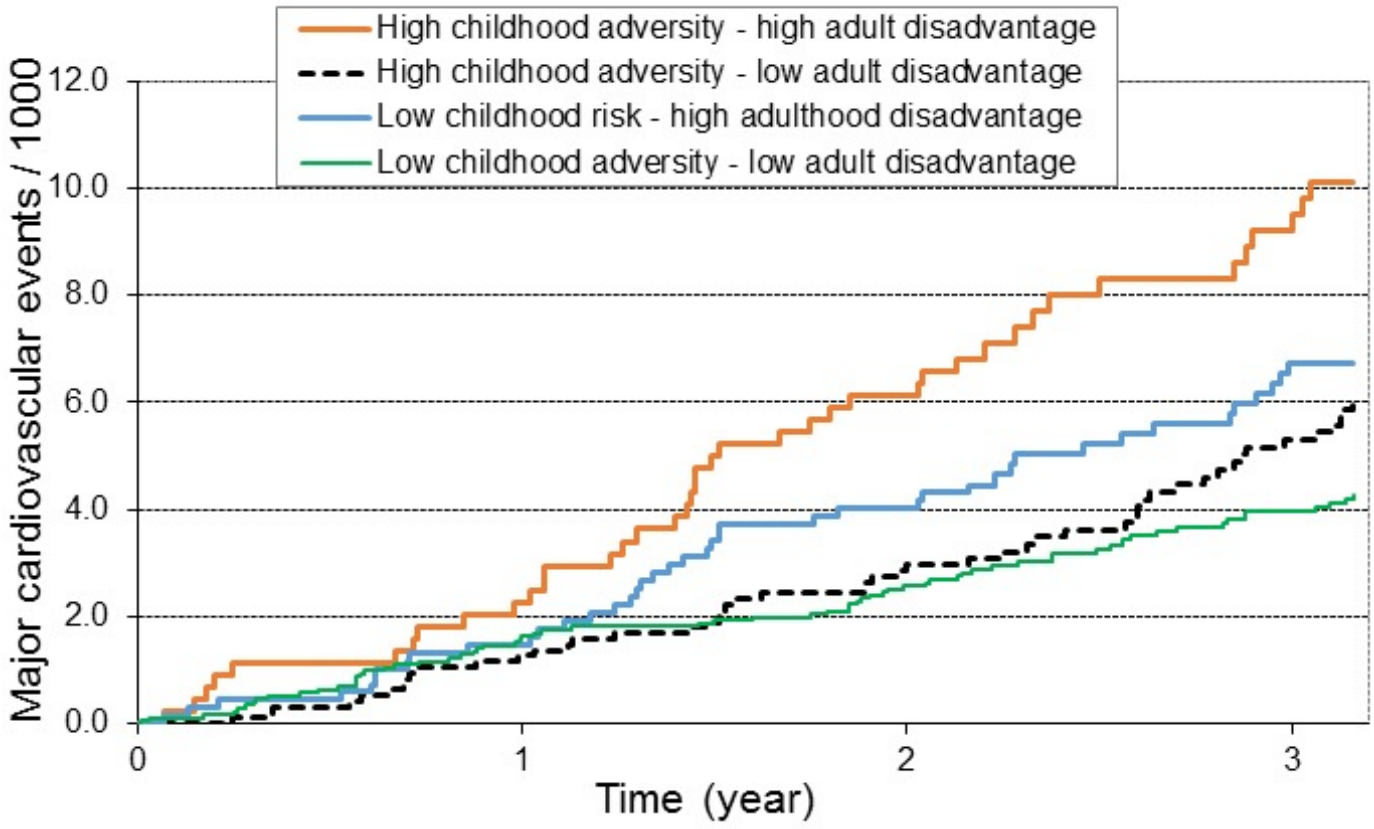

Fig. 2. Cumulative risk over time of cardiovascular disease events by the level of exposure to childhood psychosocial adversity and adult neighbourhood disadvantage.

We found that combined exposure to high childhood adversity (reported 2-6 adversities) and high adult disadvantage (i.e., above national average disadvantage) was associated with having cardiovascular disease risk factors (hypertension, dyslipidaemia, diabetes, obesity, smoking, heavy alcohol use, and physical inactivity) when compared to those exposed to low childhood adversity and low adult disadvantage. Those exposed to high childhood adversity and high adult disadvantage also were over 2-times more likely to experience incident cardiovascular disease compared to those who were exposed to low childhood adversity and low adult disadvantage (Fig. 2). This association was not explained by the conventional cardiovascular disease risk factors. Exposure to either high childhood adversity or high adult neighborhood disadvantage alone was not significantly associated with incident cardiovascular disease.

In sum, individuals who have been exposed to high childhood psychosocial adversity and high adult neighborhood disadvantage seem to be at an increased risk of cardiovascular disease. In contrast, those with only one of these exposures had little or no excess risk after controlling for conventional risk factors.

Publication

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