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The contribution of lifestyle and work factors to social inequalities in self-rated health among the employed population in Switzerland

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ABSTRACT

We sought to examine the joint and independent contributions of working conditions and health-related behaviours in explaining social gradients in self-rated health (SRH). Nationally representative cross-sectional data from the Swiss Health Survey of 2007 were used for this study. Bi- and multivariate statistical analyses were carried out on a sample of 6950 adult employees of working age. We examined a comprehensive set of five health behaviours and lifestyle factors as well as twelve physical and psychosocial work factors as potential mediators of the relationship between social status and SRH. Analyses were stratified by sex and performed using two measures of social status, educational level and occupational position. Strong social gradients were found for SRH, but mainly in men whereas in women the associations were either not linear (educational level) or not statistically significant (occupational position). Social gradients were also found for most lifestyle and all physical and psychosocial work factors studied. These three groups of factors equally contributed to and largely accounted for the social gradients in SRH although not all of the individual factors turned out to be independent and significant risk factors for poor SRH. Such risk factors included physical inactivity and obesity, poor posture and no or low social support at work (both sexes), heavy smoking (men) and underweight, overweight, uniform arm or hand movements at work, monotonous work and job insecurity (women). In conclusion, social inequalities (or more precisely educational and occupational status differences) in SRH were more pronounced in men and can be attributed for the most part to a sedentary lifestyle and to a physically demanding and socially unsupportive and insecure work environment. Apart from this main finding and overall pattern, sex-specific risk profiles were observed with regard to SRH and need to be taken into consideration.

1. Introduction

The social gradient in health, disease and mortality is one of the most widely observed and consistent findings in international epidemiological research (Adler et al., 1994; Mackenbach et al., 1997; Mackenbach et al., 2008; Marmot et al., 1997). Despite remarkable declines in morbidity and mortality rates over the past century, social inequalities in health persist – in some cases and countries have been observed to have widened over time (Borg and Kristensen, 2000; Kunst et al., 2005; Kristensen et al., 2002; Mackenbach et al., 2003; Mackenbach, 2012).

This inverse and graded relation between social status and mortality (as well as antecedent morbidity) has been consistently found for both educational and occupational status (Marmot et al., 1997) and has been intensively studied with regard to cardiovascular disease and self-rated health (Borg and Kristensen, 2000; Borrell et al., 2004; Kunst et al., 2005; McFadden et al., 2008). Numerous population-based prospective studies have revealed that self-ratings of health have predictive validity for subsequent hospitalization and mortality risk (DeSalvo et al., 2006; Idler and Benyamini, 1997).

Health inequalities research over the past decades has devoted considerable effort toward identifying specific social environmental or behavioural factors that explain (or mediate) the relationship between social status and health. Factors that have been studied and identified to account for this link include (Adler et al.,

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1994; Hemström, 2005; Kristensen et al., 2002): features of the physical environment and exposure to environmental hazards (e.g. housing conditions, bad neighbourhoods, busy or noisy roads, high pollution level), factors of the work environment and occupational exposures (e.g. job stress, low job control or decision latitude, low social support at work), features of the social environment and interpersonal relationships (e.g. social conflicts, experiences of violence and aggression, access to social resources and supports), stress and other psychosocial characteristics (e.g. critical life events, adverse experiences in childhood, hostility), lifestyle and health behaviours (e.g. sedentary lifestyle or physical inactivity, smoking, alcohol abuse, poor diet, obesity), and healthcare systems (e.g. access to medical care, quality of healthcare services, use of preventive medical examinations).

Each of these factors, taken separately, has been found to only partially explain the social gradient in (self-rated) health. Many studies have examined either work factors (Borg and Kristensen, 2000; Borrell et al., 2004; Hämmig and Bauer, 2013; Hemström, 2005; Kaikkonen et al., 2009; Kristensen et al., 2002; Lahelma et al., 2009; Niedhammer et al., 2008; Rahkonen et al., 2006; Schrijvers et al., 1998; Warren et al., 2004) or lifestyle factors and health behaviours (Laaksonen et al., 2008; Lantz et al., 1998; McFadden et al., 2008) or even combined behavioural, material and other but occupational factors (Khang et al., 2009; Laaksonen et al., 2005; Molarius et al., 2006; Schrijvers et al., 1999; Skalicka et al., 2009; van Lenthe et al., 2004; van Oort et al., 2005). However, very few previous studies have simultaneously investigated behavioural and occupational factors with regard to their contribution to social stratification in SRH (Borg and Kristensen, 2000; Power et al., 1998) or other health outcomes (Niedhammer et al., 2011; Robroek et al., 2013).

Despite the extensive research literature on the subject we still have an imperfect understanding of the causes of inequalities in health and the relative importance of different mediators (Hämmig and Bauer, 2013; Niedhammer et al., 2008). It is generally assumed no single explanatory factor alone can explain these health inequalities and that they are attributable to the combined and cumulative impact of risk factors over time and across different life domains (Power et al., 1998). The work environment is considered to be one of the major sources of social inequalities in health (Borg and Kristensen, 2000; Hämmig and Bauer, 2013; Hemström, 2005; Niedhammer et al., 2008). At the same time, health behaviours are recognised as important explanations for health inequalities (Laaksonen et al., 2008; Lantz et al., 1998). Moreover, unhealthy lifestyles and behaviours are hypothesized to be directly related to adverse working conditions (Lahelma et al., 2010; Lallukka et al., 2008, 2004). In short both occupational and behavioural factors are believed to contribute to health inequalities, although their relative contribution to inequalities in health remains contested. For example, a meta-analysis of 13 European cohort studies concluded that job strain is responsible for a smaller fraction of excess coronary events in the workplace compared to health behaviours such as smoking or sedentarism (Kivimäki et al., 2012). On the other hand, there are other occupational risk factors besides job strain that contribute to social inequalities in health. In addition, adverse working conditions themselves are believed to shape health behaviours by adversely affecting workers' food choices, levels of physical activity, heavy drinking patterns and other maladaptive coping responses. In other words, employees may compensate for high work stress and psychosocial job strain with adverse health behaviours (Lallukka et al., 2008).

In Switzerland, where working conditions in general are comparatively good but where work hours are long, psychosocial work demands and experiences of stress on the job are increasing and more than one third of the working population report frequent feelings of stress, and one quarter report burnout symptoms at work according to the Stress Study 2010 (Grebner et al., 2011), this coping or compensation 'strategy' and interrelation between psychosocial work factors and lifestyle factors may be more pronounced and responsible for a reversed social gradient observed for mental health outcomes (Hämmig and Bauer, 2013) and the inconsistent findings regarding the contribution of psychosocial work factors to health inequalities (Hemström, 2005; Kaikkonen et al., 2009; Lahelma et al., 2009; Niedhammer et al., 2008; Qiu et al., 2012).

Such considerations and the lack of knowledge and evidence not only but particularly in Switzerland were the reason to initiate this population-based cross-sectional Swiss study on the contribution of different lifestyle and work factors to explaining social inequalities in self-rated health. Our study thus sought to estimate the joint effects of both types of factors and to simultaneously disentangle the direct and independent effects of these factors from their indirect effects mediated through the other factors. Based on the above mentioned theoretical considerations it can be expected that the potential mediating effect of the lifestyle factors or health behaviours in the relationship between social status and (self-rated) health can be partly attributed to psychosocial work factors.

To our knowledge, this is the first study in Switzerland to attempt to understand the joint and independent contributions of work-related factors and health-related behaviours to the social gradient in health. Apart from filling the lack of evidence and research gap in Switzerland and in addition to those very few earlier studies that attempted to explain health inequalities with both occupational and behavioural factors (Borg and Kristensen, 2000; Niedhammer et al., 2011; Power et al., 1998; Robroek et al., 2013), the present study takes a broader analytical and conceptual approach by including a wider range of lifestyle factors or health behaviours and/or a larger number of work factors, by differentiating between physical and psychosocial work factors, by consequently performing sex-stratified statistical analyses, and by considering not only educational or occupational status differences in health, health behaviours and work exposures but rather both.

There are different reasons for this approach: including more and both types of explanatory factors opens up the possibility of better or even fully explaining social inequalities in SRH and detecting potential confounding in the relationship between those explanatory or mediating factors and health inequalities. The differentiation between physical and psychosocial work factors was motivated by the assumed intercorrelation between behavioural and psychosocial work factors. The use of two measures or indicators of social status instead of a single one was to better address the problem or rather phenomenon of status inconsistency and multidimensionality of social inequality. And the two sexes were studied separately since in other studies differences between men and women were observed regarding the prevalence of occupational and behavioural factors (Niedhammer et al., 2011) and the contribution of occupational factors to health inequalities was found to be higher in men than in women (Niedhammer et al., 2008, 2011).

Accordingly, the aims of the present study are to examine:

- If social gradients in SRH and in unhealthy lifestyles and behaviours and different adverse working conditions can be observed in the Swiss working population,
- The extent to which social inequalities in SRH can be explained by lifestyle and work factors,
- If lifestyle or work factors contribute more to social inequalities in SRH,
- If the possible mediating effect of lifestyle factors can be partly explained by (psychosocial) work factors,