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Increase in frailty of older workers and retirees predicted by negative psychosocial working conditions on the job

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ABSTRACT

Well-established evidence has shown that negative psychosocial working conditions adversely affect the health and well-being of prime-age workers, yet little is known about the consequences on the health of older workers. Our article examines the associations between declines in health in later life, measured as frailty, and negative psychosocial working conditions, and considers the role of retirement. We use longitudinal cross-national data collected by SHARE I and SHARE IV and focus on the respondents who were working at baseline. We find that low reward, high effort, effort to reward ratio, and effort to control ratio were all predictors of increasing frailty. The association between low reward and change in frailty was modified by retirement status at follow-up, with nonretired respondents in low-reward jobs experiencing the largest increases in frailty at follow-up. These results suggest that the effect of psychosocial working conditions on physical health may extend well past the prime working age, and retirement may have a protective effect on the health of older workers in low reward jobs.

1. Introduction

Retirees are a rapidly growing segment of the European population. Demographers project that by 2020 nearly 20% of all EU citizens will be 65 years old or older (European Commission, 2009). In response to these projections, European countries have gone to great lengths to prepare their health care systems and social services to serve this population and maintain the population's health and well-being (Rechel et al., 2013). However, the success with which this population will age has already been determined to some extent by exposures in the earlier stages of life, as health is subject to cumulative processes over the course of life, a fact that has been well documented (Barker, 1998; Hamer et al., 2012; Johnson et al., 2012). We argue that psychosocial working conditions comprise a key set of aging-relevant exposures that have been largely overlooked thus far. It is especially important to advance our understanding of the connections between working conditions and health in later life because most of today's older adults have experienced a relatively high degree of occupational stability, with a large proportion working in the same job for most if not all of their adult lives.

A well-established body of literature has shown that psychosocial characteristics of our jobs have important consequences for health while in the labor force. For example, poor psychosocial working conditions have been associated with occupational injuries (Gillen et al., 2007) and absenteeism (Melchior et al., 2003). Other research suggests that poor psychosocial working conditions may pose an especially high risk for our cardiovascular systems, as evidenced by an elevated risk of developing coronary heart disease (Bosma et al., 1998). Workers, who face poor psychosocial working conditions, are also more likely to express their intention to leave the labor force early (Siegrist et al., 2006; Wahrendorf et al., 2012a). Most recently, scholars of working conditions have joined forces with gerontologists to begin conceptualizing psychosocial working conditions as an exposure with potential late-life effects. For example, Wahrendorf and colleagues found that, in a sample of former French employees, those who experienced less favorable working conditions reported worse physical and mental health after retirement (Wahrendorf et al., 2012b).

In this study, we expand on the emergent line of research by asking two research questions. First, we ask, are poor psychosocial working conditions associated with a greater rate of decline in

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physical health in later life? And second, does retirement buffer the effects of negative working conditions on health in later life? We examine these questions in a representative sample of older European workers and recent retirees. We also contribute to the literature on health in later life by constructing a multidimensional indicator of health, frailty, a marker for poor physical health in older age. We employ a multilevel analytical strategy that takes advantage of the longitudinal health data collected by two waves of Survey of Health, Ageing and Retirement in Europe, SHARE I and SHARE IV.

2. Background

A commission jointly assembled by the International Labor Office and the World Health Organization (ILO & WHO Committee on Occupational Health) defined psychosocial factors in the work place as "interactions among job content, work organization and management, and other environmental and organizational conditions, on the one hand, and employees' competencies and needs on the other (1986)." Research on poor psychosocial working conditions and health has found consistent associations between exposure and adverse health outcomes. Some of the strongest findings in this area pertain to the relationship among heart disease, negative health behaviors, and poor psychosocial working conditions (for detailed overviews see Kivimäki et al., 2006; Siegrist and Rödel, 2006). Although the exact mechanisms that led to these associations have been notoriously difficult to specify in non-experimental settings, they are thought to be related to the adverse physiological consequences of the stress brought about by the misfit between a person and his/her work environment, including the perceived lack of ability to realize one's potential within the available opportunity structure (Siegrist, 1996). Empirical evidence has shown that working conditions characterized by high job demands with a low reciprocal rewards can be particularly detrimental to individual's physical health (Van Vegchel et al., 2005). An example of such an environment is a work setting with high expectations on workers' production, but little possibilities for promotion or other types of rewards they can receive for above average efforts. In more serious cases, work environments with consistently adverse psychosocial conditions can bring about physical and mental collapse of workers, also known as burnout (Bakker et al., 2003). The impact of psychosocial job strain on health can be buffered by the worker's own characteristics and by other aspects of the job and work environment. Karasek's Demand/Control model views autonomy as a key buffering job element (1979), but other researchers have identified other important protective buffers, such associal support (Haines et al., 1991), the quality of worker's relationship to her or his supervisor (Väänänen et al., 2003), and the clarity of work expectations and feedback (Bakker and Demerouti, 2007).

The two most frequently mentioned sets of pathways that account for the health consequences of adverse psychosocial working conditions include the physiological reactions to such exposures, and unhealthy coping behaviors. Researchers have argued that negative psychosocial working conditions generate "active distress," which is a form of stress arousal that leads to activation of two bodily systems: the sympathetic–adrenal–medullary system (SAM) and the hypothalamic–pituitary–adrenal system (HPA). Frequent activation of these stress response systems without adequate opportunities for recovery is likely to cause chronic impairments (Geurts and Sonnentag, 2006). The behavioral pathway involves adopting behaviors considered "risky," such as smoking, excessive alcohol consumption, and eating foods rich in saturated fats and calories. This mechanism has sometimes been labeled as "secondary" or "mediating." Little consensus exists on how to unambiguously conceptualize or quantify the effects of the secondary pathway on health, as most health behaviors are thought to arise from a complex interplay of personal environmental contexts that are encountered in earlier parts of the life course, rather than from a reaction to specific and acute stressors (Lamontagne, 2012; Siegrist and Rödel, 2006).

Despite convincing evidence that negative working conditions harm the health of workers, it is yet unclear whether the cessation of work-related stress due to retirement provides a respite from their further negative effects. This is because removing the psychosocial stressor may not necessarily slow down a process of decline already on its way. At the same time, it is plausible that, although retirement is not likely to heal the damage already done, it may provide much needed relief to workers in particularly poor psychosocial working conditions, and their health decline may become less steep after retirement as a result.

2.1. Frailty as a health outcome

A persistent research challenge has been providing a uniform definition of overall health status in later life, the period many associate with worsening health. Most common chronic conditions become clinically apparent during this time, and adults develop multiple morbidities that together result in a progressive decline in overall health and function as they age. The concept of successful aging is a widely accepted framework to capture the multiple aspects of declining health commonly observed in older adults. It was developed by Rowe and Kahn, who defined successful aging based on three dimensions: maintenance of high levels of physical and cognitive function; absence of disease and disability; and continued engagement in productive activities (Rowe and Kahn, 1987). This definition provides a cohesive framework for distinguishing the effects of illness from the effects of old age on physical health status. Kaplan and others later identified predictors of successful aging, which included level of physical activity, not smoking, and sociability (Kaplan et al., 1987). Adults who display behaviors not associated with successful aging, such as seclusion, tend to have higher counts of morbidities and also a greater chance of death (Strawbridge et al., 1996). However, successful aging is not easy to measure in diverse populations and sometimes falls short of accounting for variability in quality of life (Strawbridge et al., 2002). In this paper, we build on the conceptual framework of successful aging and evaluate health by a calculating an individual's frailty score, a health measure we consider best suited to cross-national comparative research, such as ours.

The concept of frailty has been discussed in medical circles for several decades but is more of a newcomer to social scientific research (Ahmed et al., 2007). Frailty has many definitions. The most systematic attempt to establish the "frailty phenotype" was undertaken by Fried et al. (2001). They identified five dimensions of frailty: shrinking, weakness, poor endurance and energy, slowness, and low physical activity level. Older adults placed in lower ranges for multiple indicators were shown to be at "a high-risk state predictive of a range of adverse health outcomes." Frail older adults are thought to be especially vulnerable to adverse health outcomes because they have greater difficulty to recover from a health challenge, even if it constitutes an otherwise relatively minor medical event (Clegg et al., 2013).

Frailty is constructed by taking advantage of biomarkers and self-reported physical-condition data that are relatively free of cultural biases (Romero-Ortuno et al., 2010), unlike, for example, self-reported health, which may have multiple meanings and interpretations that become increasingly complex in older age groups (Schnittker, 2005). It is also superior to condition-specific morbidity, which only captures whether a respondent has been