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Psychosocial work environment and mental health among construction workers

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ABSTRACT

We assessed psychosocial work environment, the prevalence of mental health complaints and the association between these two among bricklayers and construction supervisors. For this cross-sectional study a total of 1500 bricklayers and supervisors were selected. Psychosocial work characteristics were measured using the Dutch Questionnaire on the Experience and Evaluation of Work and compared to the general Dutch working population. Mental health effects were measured with scales to assess fatigue during work, need for recovery after work, symptoms of distress, depression and post-traumatic stress disorder. The prevalence of self-reported mental health complaints was determined using the cut-off values. Associations between psychosocial work characteristics and self-reported mental health complaints were analysed using logistic regression.

Total response rate was 43%. Compared to the general working population, bricklayers experienced statistically significant worse job control, learning opportunities and future perspectives; supervisors experienced statistically significant higher psychological demands and need for recovery. Prevalence of self-reported mental health effects among bricklayers and supervisors, respectively, were as follows: high need for recovery after work (14%; 25%), distress (5%, 7%), depression (18%, 20%) and post-traumatic stress disorder (11%, 7%). Among both occupations, high work speed and quantity were associated with symptoms of depression. Further, among construction supervisors, low participation in decision making and low social support of the direct supervisor was associated with symptoms of depression.

The findings in the present study indicate psychosocial risk factors for bricklayers and supervisors. In each occupation a considerable proportion of workers was positively screened for symptoms of common mental disorders.

1. Introduction

The physically demanding nature of the construction trade and the resulting health effects have been extensively studied (Holmström et al., 1995; Schneider, 2001). However, the world of work has changed over the years and has led to several new or increasingly prevalent psychosocial risks, such as new forms of employment and an intensification of work (European Agency on Safety and Health at Work, 2007). The construction industry has become more stressful in recent years (Campbell, 2006). Therefore, the influence of psychosocial risk factors should be considered when dealing with construction workers (Alavinia et al., 2007, 2009; Holmström et al., 1992a; Holmström et al., 1992b). Several theories have been developed which link psychosocial risk factors at work to consequences for the mental health of workers. The job-demand-control theory of Karasek is one of them (Karasek, 1979). The extended model of job demands, control, and support states that high demands, low control and low social support have the most negative effects on employee wellbeing (van der Doef and Maes, 1999). The central job demand in the model is a high quantitative workload. However, in the construction industry other job demands may be important predictors as well, besides doing too much work in too little time and working long hours (Beswick et al., 2007). Also commuting, having responsibility for the safety of others at work, engaging in dangerous job, the transient nature of the job and the 'hire and fire' culture are reported in the literature as stressors (Beswick et al., 2007). Furthermore, the financial crisis of 2008 had a great impact on employment in the construction industry worldwide. The International Labour Organization (ILO)

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calculated that at least 5 million construction workers had lost their jobs during 2008, and the recession continues (International Labour Office (ILO), 2009). Consequences of the recession include job insecurity and minimal job opportunities.

Some of the before mentioned psychosocial risk factors and their effects on construction workers have been studied (Alavinia et al., 2007; Holmström et al., 1992a; Holmström et al., 1992b). The construction industry, however, consists of many different jobs, each with its own specific demands and requirements. Examining the psychosocial risk factors for all construction workers ignores the diversity of experiences within the industry. When studying the psychosocial work environment among construction workers, it is important to consider the situation for a specific job or trade (Cremers, 2004). The nature and specific characteristics of the psychosocial work environment among construction occupations remain unknown.

Adverse psychosocial work environments may lead to stress-related disorders (Nieuwenhuijsen et al., 2010) or depression (Bonde, 2008) and could affect musculoskeletal health as well (Eatough et al., 2012). Although the relationship between adverse psychosocial work environments and musculoskeletal disorders has been studied among construction workers, studies focussing on mental health problems in this population are rare. Available evidence on the size and scope of the problem seems conflicting. In the Netherlands for example, the incidence of occupational mental health disorders reported by the occupational physician has increased in the construction industry from 11.2% in 2007 to 16.1% in 2010 (Netherlands Center for Occupational Diseases (NCvB), 2011). The industry had the second-highest incidence in 2010, after healthcare and social services. On the other hand, Stocks et al. (2010) found a lower incidence (4%) of mental illness among construction workers in the UK compared to all other employment sectors (as reported by clinical specialists from 2004 to 2008). Compared to other diseases or conditions, mental illness had the lowest incidence among construction workers. However, differences exist among the various construction occupations; Stattin and Järvholm (2005) found considerable variation in the risk for disability pension due to psychiatric disorders among different occupations within the construction industry.

Aside from the individual burden of common mental health disorders, work functioning in the construction industry may be critically reduced when the workers suffer from mental illness. This may lead to a higher risk of accidents and injuries on the job (Beseler and Stallones, 2010; Kim et al., 2009). Bentley et al. (2006) studied the key risk factors for slips, trips and falls. They found that such accidents are partially caused by time pressures and the need to divide attention between concurrent visual tasks, such as inspecting work progress and walking on difficult terrain. Among the other key risk factors were fatigue and poor risk perception. In other words, construction workers need psychological and mental capacities to remain concentrated and alert and to manage the variety of on-site hazards throughout the work day. These capacities are likely to be impaired when the worker suffers from mental health complaints.

A detailed assessment of both the psychosocial work environment and the prevalence of common mental health disorders in the construction industry allows for a more comprehensive understanding of the size and scope of psychosocial risk factors and mental health effects among construction occupations. Increased insight into the psychosocial and mental health risk factors of construction work can contribute substantially to selecting the most relevant interventions or actions for the workers.

The construction industry consists of over 80 different jobs. A high proportion (about 55–70%) of the workforce is made up of workers with manual skills (such as bricklayers, carpenters, electricians etc). The remaining workforce (30–45%) is in managerial roles, including managers and supervisors (Grootenboer and van der Schaaf, 2012; National Guidance Research Forum, 2012). In this cross-sectional study, we aimed to get insight into the psychosocial work environment of two very distinct construction professions adequately, the occupation of bricklayer as an example of a manual occupation and the construction supervisor as an example of a managerial occupation. The bricklayer has a repetitive job with high physical demands, whereas the construction supervisor is responsible for site management and has a job with particular high mental demands. In the present study we focused on psychosocial job characteristics which are known risk factors for work-related depression and stress: high work speed and work quantity, high mental demands, low social support, little job control, and having experienced or witnessed a serious accident (de Roos and Sluiter, 2004; Nieuwenhuijsen et al., 2010). Furthermore, we were interested in the specific stressor 'lack of future perspective', which might play a role among construction workers, particularly since the economic recession caused many construction workers to loose their jobs or find themselves in uncertain circumstances (International Labour Office (ILO), 2009). The stressor 'lack of job variety' is often mentioned for occupations involving monotonous work, which might play a role among the bricklayers specifically (Beereboom, 2005). Therefore, we decided to include job variety as a psychosocial work characteristic of interest.

The objectives of the present study are to assess the following:

i) the magnitude of psychosocial work characteristics;
ii) the prevalence of self reported mental health effects (fatigue during work, need for recovery after work, distress, depression and post-traumatic stress disorder (PTSD);
iii) the psychosocial factors that are associated with mental health in the different occupations.

2. Methods

2.1. Sample and sample size

A priori, the prevalence of self-reported symptoms was estimated at a maximum of 30% and in order to obtain the prevalence of symptoms with 5% precision, a sample size of 318 was calculated. In a pilot questionnaire survey, a 40% response rate in a population of bricklayers and supervisors was achieved (Boschman et al., 2011b).

In total, 750 bricklayers and 750 construction supervisors were randomly selected from a Dutch registry comprised of all employed Dutch construction workers. The random selection was performed by the independent data manager of the registry, frequently assisting in selecting samples for research purposes. Among the bricklayers were both those working in the construction of new buildings as in renovation. Among the construction supervisors were those working in ground, road and water construction and in commercial and industrial building. Furthermore, the selection was not restricted based on the type of construction supervisor (main or assisting supervisor).

There was an overall response rate of 39% among the bricklayers ($n = 262$) and 46% among the construction supervisors ($n = 310$). All respondents were active in their current occupation during the past twelve months. A more detailed description of the characteristics of the respondents is presented in Table 1.

2.2. Procedure

The survey was conducted from December 2009 to January 2010. All participants received a sealed envelope at their home