



Dispositional pessimism but not optimism is related to sickness absence caused by musculoskeletal symptoms

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ABSTRACT

Musculoskeletal disorders account for a higher proportion of sickness absence from work in the European Union than any other health condition. The present study examined the associations between work environment, dispositional optimism/pessimism and medically certified sickness absence caused by musculoskeletal complaints in a sample of employees from the Norwegian Armed Forces ($N = 1190$, 77.5% men). Dispositional pessimism, but not optimism, predicted the amount of absence also when taking into account the effects of age and the work environment. Overall, our results support previous studies suggesting that pessimism is a more salient predictor of physical health than optimism. Our results also suggest that it may be beneficial for employers to combine medical treatment of musculoskeletal symptoms with psychological treatment targeting pessimistic outcome expectancies in order to reduce the amount of sickness absence.

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1. Introduction

Musculoskeletal disorders (MSD) account for a higher proportion of sickness absence from work in the European Union than any other health condition (Bevan et al., 2009; Edwards & Greasley, 2010). The etiology of MSD is considered to be multidimensional and includes biomechanical risk factors, psychosocial workplace factors, and individual characteristics. For example, biomechanical risk factors like repetitive work and working in a static posture have been shown to predict musculoskeletal symptoms in a large variety of occupational groups (Bernard, 1997; van der Windt et al., 2000). Reviews on the impact of psychosocial factors have demonstrated that employees' perceptions of job control, job demands, and social support from colleagues and supervisors are important in relation to musculoskeletal complaints (e.g., Ariëns, van Mechelen, Bongers, Bouter, & van der Wal, 2001; Bongers, Kremer, & Laak, 2002). The evidence from these reviews suggests that higher demands at work, less control over work, and lower support at work independently or in combination predict a wide variety of complaints, including neck pain and upper extremity symptoms.

Alongside mental disorders, MSD are also one of the top causes of inflows into disability, with the majority caused by long-term absences (Organisation for Economic Co-operation and Develop-

ment [OECD], 2009). MSD are thus not only a major burden for the individual, they also represent a substantial economical cost for society as a whole. It is estimated that OECD countries on average spend two percent of their gross domestic product (GDP) on sickness absence and disability benefits. In Norway, this estimate is even higher, with expenditures close to five percent of GDP, highest among all Member States (OECD, 2009). Identifying factors related to absence caused by musculoskeletal complaints can therefore have huge benefits for both the individual and society at large.

1.1. Dispositional optimism and pessimism

The aim of the present study was to examine dispositional optimism/pessimism as possible individual characteristics affecting sickness absence caused by musculoskeletal complaints. Dispositional optimism and pessimism can be defined as, respectively, generalized positive and negative outcome expectancies that are relatively stable across time and situations (Scheier & Carver, 1985). Optimistic individuals generally hold positive expectations regarding the future and expect good things to happen to them. Pessimism, on the other hand, indicates a tendency to believe that generally bad things will happen to you in life across a wide variety of settings.

Both optimism and pessimism have been found to be associated with a broad range of health outcomes. Optimism has been found to predict rapid recovery from surgery (Chamberlain, Petrie, & Azariah, 1992), adaption to chronic disease (Fournier, de Ridder, & Bensing, 2002), and better survival among cancer patients (Allison,

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Guichard, Fung, & Gilain, 2003), while a pessimistic life orientation has been shown to be a significant risk factor for mortality among cancer patients (Schulz, Bookwala, Knapp, Scheier, & Williamson, 1996) and physical illness among university students (Jackson, Sellers, & Peterson, 2002).

The beneficial effects of optimism on health result in part because optimistic individuals employ more adaptive coping strategies and attract supportive social relationships (Carver, Scheier, & Segerstrom, 2010; Solberg Nes & Segerstrom, 2006). The positive expectancies of optimists lead to engagement and goal-directed efforts, and studies have found optimism to be associated with more approach and problem-oriented coping strategies (for a review, see Solberg Nes and Segerstrom (2006)). People who are doubtful in regard to goal-attainment (i.e., pessimistic) tend to give up or try to escape adversity by wishful thinking and other temporary distractions. Moreover, results from a meta-analytic review suggest that optimists are more flexible in their coping strategies and tend to use strategies that match the demands of the situation (e.g., more emotion-focused coping for traumas and more problem-oriented coping for academic stressors; Solberg Nes & Segerstrom, 2006).

In work settings, the effect of optimism and pessimism on health may also be indirect through individuals' perceptions of subjective work environment factors. Individual differences in pessimism/optimism may influence the degree to which people experience their work as demanding and uncontrollable, as well as how they relate to co-workers and supervisors. These experiences are in turn related to health outcomes (e.g., Ariëns et al., 2001).

1.2. Research aim and hypotheses

Although several studies have investigated the association between optimism and quality of life among individuals suffering from chronic MSD (e.g., Brenes, Rapp, Rejeski, & Miller, 2002; Fournier et al., 2002; Long & Sangster, 1993), little is known about the relationships between optimism/pessimism and sickness absence caused by musculoskeletal complaints. Based on the discussion presented above we propose that optimism and pessimism affect the amount of sickness absence caused by musculoskeletal symptoms. Specifically, the following hypotheses were tested:

Hypothesis 1. Dispositional optimism is negatively related to the number of sickness absence days.

Hypothesis 2. Dispositional pessimism is positively related to the number of sickness absence days.

In addition, we hypothesized additional indirect effects of optimism and pessimism via perceptions of the psychosocial environment. The two following hypotheses were tested:

Hypothesis 3. Dispositional optimism has additional indirect effects on sickness absence through perceptions of the psychosocial work environment.

Hypothesis 4. Dispositional pessimism has additional indirect effects on sickness absence through perceptions of the psychosocial work environment.

2. Methods

2.1. Sample and procedure

The data were obtained from a personnel survey conducted in the period March–June, 2007, among 15,410 employees of the Nor-

wegian Armed Forces. The population consisted of employees fulfilling a large variety of occupational responsibilities within the Armed Forces, including administration, logistics, medical service, and active duty soldiers. The survey was administered by the Health Registry, a national register established by the Norwegian Parliament and administered by the Norwegian Ministry of Defense. The personnel survey was administered on-line and a total of 7555 questionnaires were returned (response rate 49.3%). Data on sickness absence caused by musculoskeletal complaints were later retrieved from the Norwegian Labour and Welfare Administration (NAV) by the Health Registry and combined with the survey data. Only respondents who had been absent due to musculoskeletal complaints were retained, resulting in a final study sample of $N = 1190$ (922 [77.5%] men, $M_{\text{age}} = 41.67$, $SD = 10.87$).

2.2. Measures

2.2.1. Optimism and pessimism

Dispositional optimism and pessimism were measured with the revised Life Orientation Test (LOT-R; Scheier, Carver, & Bridges, 1994). The LOT-R consists of three statements that are worded positively to indicate optimism (e.g., "In uncertain times, I usually expect the best") and three that are worded negatively to indicate pessimism (e.g., "If something can go wrong for me, it will"). Respondents are asked to indicate their agreement to each statement on a five-point scale (1 = *I disagree a lot*, 5 = *I agree a lot*). Mean scores for optimism and pessimism were computed so that high scores indicate high levels of optimism and pessimism. Cronbach's alphas (α) in the present study were .51 for optimism and .74 for pessimism.

2.2.2. Psychosocial work environment

The psychosocial work environment was assessed by means of four different variables. *Work load* ($\alpha = .86$) was measured with four questions on the amount of work and time pressure placed on the employee. An example item is: "Is your work characterized by a great amount of time pressure?" *Job control* ($\alpha = .75$) was assessed by means of four statements on the amount of freedom in their work allocated to the employee (e.g., "I have the freedom to influence my own work pace"). *Positive stimulating* ($\alpha = .88$) aspects of the work environment were measured with three items on positive challenges in the employees' work and to what degree the employee was able to use his/her knowledge and abilities (e.g., "My work is challenging in a positive way"). Finally, *Relationship with supervisor* ($\alpha = .82$) was assessed by means of three items inquiring about support and encouragement from the employees' supervisor (e.g., "My relationship with my supervisor is characterized by openness and trust"). Responses to all items were recorded on a four-point scale (1 = *almost never*, 4 = *very often*).

2.2.3. Physical work environment

Two variables were used to assess the physical work environment. Firstly, *Ergonomic demands* ($\alpha = .73$) was measured with three items (e.g., "I have to work with my hands above shoulder height."). Secondly, two questions concerning exposure to a humid and cold work environment were combined to form an index of *Environmental demands* ($\alpha = .96$, $r = .93$). Responses were recorded on a four-point scale ranging from 1 = *almost never* to 4 = *very often*.

2.2.4. Sickness absence

We collected the total number of sick-leave days during the two calendar years 2007 and 2008. The registered data were retrieved from NAV, a service that administers a large proportion of the most important welfare benefits and social security schemes in Norway, including sick-leave benefits. Under the Norwegian welfare system all employees are entitled to sick-leave pay when they are absent

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