Observational studies

Predicting of pain, disability, and sick leave regarding a non-clinical sample among Swedish nurses

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ABSTRACT

Objectives: Health care providers, especially registered nurses (RNs), are a professional group with a high risk of musculoskeletal pain (MSP). This longitudinal study contributes to the literature by describing the prevalence and change in MSP, work-related factors, personal factors, self-reported pain, disability and sick leave (>7 days) among RNs working in a Swedish hospital over a 3-year period. Further, results concerning prediction of pain, disability and sick leave from baseline to a 3-year follow-up are reported.
Method: In 2003, a convenience sample of 278 RNs (97.5% women, mean age 43 years) completed a questionnaire. In 2006, 244 RNs (88% of the original sample) were located, and 200 (82%) of these completed a second questionnaire.
Results: Logistic regression analyses revealed that pain, disability and sick leave at baseline best predicted pain, disability, and sick leave at follow-up. The personal factors self-rated health and sleep quality during the last week predicted pain at follow-up, while age, self-rated health, and considering yourself as optimist or pessimist predicted disability at follow-up, however weakly. None of the work-related factors contributed significantly to the regression solution.
Conclusions: The results support earlier studies showing that a history of pain and disability is predictive of future pain and disability. Attention to individual factors such as personal values may be needed in further research.

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1. Introduction

The empirical evidence shows a variety of risk factors for developing musculoskeletal pain (MSP), sick leave and disability among the general and working population. In several studies, the risk factors seem to interact with each other ([1,2,35–37]). The risk factors are classified differently in various studies, making it difficult to compare the constellations. The majority of the research in the field of MSP and disability is among clinical samples, many of which have been cross-sectional. Prospective studies on high-risk populations, such as subgroups of health care staff, are limited, especially prospective studies among staff not on sick leave.

In general, the main providers of practical patient care are nurses' aides, who are frequently exposed to different physical work-related factors such as manual handling, heavy lifting, moving or transferring patients [3]. Repeated daily physical work activities, biomechanical strain of the back and manual handling of objects and persons may contribute to gradual development of pain [4,5]. These types of risk factors also concerned registered nurses (RNs) who, in addition to having administrative responsibility, were also responsible for assessing health care needs and provision of medical prescriptions. The RNs is also responsible for assessing and carrying out specific nursing and a degree of coordination responsibilities for other nursing tasks.

Both internationally and in Sweden, MSP have been claimed to be the most prominent work-related problem among RNs [6–11]. A review of 80 studies [12] concluded that RNs were among those with the most high-risk occupations with respect to low back pain (LBP). The results showed that the average point prevalence of LBP was approximately 17%, the annual prevalence was 40–50% and the lifetime prevalence was 35–80%. Another study [13] showed that lifetime incidence and point prevalence of LBP were 65% and 30%, respectively, among orthopaedic nurses and 58% and 25%, respectively, among intensive care nurses. A retrospective study [10] among hospital nurses showed that high levels of perceived mental pressure, boring tasks and limited support were identified as risk factors for musculoskeletal complaints. With regard to musculoskeletal complaints, the lower back was the most commonly reported body site (56%). MSP is not normally life threatening, but it can cause unimaginable suffering and disability.

In many cases, persons with MSP experience restrictions in their everyday activities [33]. Work-related injuries have been shown to influence perceptions of injury as well as pain and disability [14]. Relationships with co-workers and management may also influence pain and disability [5,12,15]. One review [16] provided strong evidence that work-related factors such as monotonous work, poor relationships at work, and low perceived ability to work were risk factors for disabling LBP. Both MSP and disability are common diagnoses used when granting sick leave [36,17].

Health-related factors such as previous LBP have been shown to be associated with a higher risk for future sick leave among female nursing aides/assistant nurses not on sick leave. In a 2-year follow-up study [18] on determinants related to health, work and social circumstances were associated with recorded sickness absence among hospital physicians and of female nurses the results showed that all health factors were strongly associated with sickness absence in both groups. In another study [19] the results showed that age, gender, perceived physical workload, poor general health, sciatica, worker's own perception of his/her ability to return to work, and chronic complaints of LBP were associated with longer sickness absence in workers on sick leave for 2–6 weeks due to MSP.

It is important to define specific subgroups in working populations because the risk factors vary across groups [20]. In Sweden studies [36] has showed, that women working in the public sector (especially in health care and schools) are under-represented in studies of consequences of sick leave for back and neck pain. The relationship between work-related factors and personality characteristics, on one hand, and pain, disability, and sick leave, on the other hand, among women in public health care settings (where RNs constitute a substantial group) has thus not been well studied, especially using longitudinal designs.

The aims of the study were to (a) describe the prevalence of, as well as change over time in, MSP, work-related factors, personal factors, pain, disability and sick leave (>7 days) among RNs working in a Swedish hospital, and (b) predict pain, disability and sick leave at a 3-year follow-up on the basis of work-related factors, personal factors, pain, disability and sick leave at baseline.

2. Method

This was a longitudinal study in which a logistic regression model including work and personal factors at baseline (2003), and the dependent variables pain, disability, and sick leave at the 3-year follow-up (2006) were used.

2.1. Procedure

The study was conducted among RNs working in a hospital in a midsize Swedish city. The RNs were recruited from various departments ($n = 23$; e.g., medical, surgery, obstetrics and gynaecology departments) at the hospital during spring 2003. The hospital director gave permission to perform the study. Nurse administrators at each hospital department were informed about the study and the data collection procedure. RNs were informed about the study during ward meetings and invited to participate. Those who agreed to participate were given a questionnaire with a personal code number. A list including the names and addresses of all RNs who had completed the questionnaire in 2003 was received from the hospital's chief executive secretary before the 3-year follow-up in 2006 was performed. A questionnaire with the same content was mailed to the participants. Two reminders were sent out: one after 2 weeks ($n = 115$) and one after 4 weeks ($n = 64$).

2.2. Measures

Data regarding pain, disability, sick leave, work-related factors, personal factors and demographic and background factors were collected using a self-administered questionnaire standardised evaluation instrument of Linton et al. [21].

Further, a section was added in which RNs who reported pain were asked to answer some questions about their pain. All responders were asked to report what they appreciated at their present jobs and what they viewed as being the most difficult, boring and harmful. The subjects were asked to give a short written description of their daily work tasks. Finally, participants were asked to give their own comments in a free format.

2.2.1. Work-related factors

Five work-related variables were measured using a 0–100 VAS. Three items were taken from Linton et al. [21]. The question "if you take into consideration your work routines, management, salary, promotion possibilities and work mates, how satisfied are you with your job" was divided into two items: satisfaction with work mates and satisfaction with work leaders. The item "Is your work heavy or monotonous?" was modified to "Is your work light or heavy?" Clinical questions included perceived value of the present job and whether work was perceived as calm or stressful.

2.2.2. Personal factors

Questions about personal factors included age, children and marital status. Further, subjects were asked to rate their perceived