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ScienceDirect
International Journal of Nursing Studies 45 (2008) 24–34
INTERNATIONAL JOURNAL OF NURSING STUDIES
www.elsevier.com/locate/ijnurstu

Back or neck-pain-related disability of nursing staff in hospitals, nursing homes and home care in seven countries—results from the European NEXT-Study

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Received 19 April 2006; received in revised form 13 November 2006; accepted 14 November 2006

Abstract

Background: Musculoskeletal disorders are a widespread affliction in the nursing profession. Back or neck-pain-related disability of nursing staff is mainly attributed to physical and psychosocial risk factors.
Objectives: To investigate which—and to what extent—physical and psychosocial risk factors are associated with neck/back-pain-related disability in nursing, and to assess the role of the type of health care institution (hospitals, nursing homes and home care institutions) within different countries in this problem.
Design: Cross-sectional secondary analysis of multinational data of nurses and auxiliary staff in hospitals ($n = 16{,}770$), nursing homes ($n = 2140$) and home care institutions ($n = 2606$) in seven countries from the European NEXT-Study.
Methods: Multinomial logistic regression analysis with raw models for each factor and mutually adjusted with all analysed variables.
Results: Analysis of the pooled data revealed effort-reward imbalance as the predominant risk factor for disability in all settings (odds ratios for high disability by effort-reward ratio: hospital 5.05 [4.30–5.93]; nursing home 6.52 [4.04–10.52] and home care 6.4 [3.83–10.70] [after mutual adjustment of psychosocial and physical risk factors]). In contrast, physical exposure to lifting and bending showed only limited associations with odds ratios below 1.6; the availability and use of lifting aids was—after mutual adjustment—not or only marginally associated with disability. These findings were basically confirmed in separate analyses for all seven countries and types of institutions.
Conclusions: The findings show a pronounced association between psychosocial factors and back or neck-pain-related disability. Further research should consider psychosocial factors and should take the setting where nurses work into account.

Keywords: Nursing staff; Hospital; Nursing homes; Home care; Back pain; Neck pain; Disability; Effort reward imbalance; Stress; International comparison; Belgium; Germany; France; Italy; The Netherlands; Poland; Slovakia

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doi:10.1016/j.ijnurstu.2006.11.003

What is already known about the topic?

- Back or neck pain (and the related disability) is a common problem in nursing.
- Physical and psychosocial risk factors contribute to back or neck-pain-related disability.
- The working environment determines the physical and psychosocial exposure for nurses.

What this paper adds

- Effort reward imbalance (ERI) is a predominant risk factor in association with back or neck-pain-related disability.
- Neither lifting and bending nor the availability or usage of technical lifting aids was consistently associated with back or neck-pain-related disability.
- Both country and type of institution determine the risk factor pattern associated with disability.

1. Background

Back or neck pain is a health problem that affects all types of occupational groups. One third of all employees report work-related back pain (Paoli and Merllié, 2001). Despite this obviously widespread adversity, many occupational health researchers have focussed on the nursing profession, seen as a physically and psychosocially demanding profession with high prevalence rates of back-related complaints (Menzel, 2004). Besides the personal suffering, back pain is a major cause for health-related absenteeism. In Germany for example, data from a major health insurance company indicate that 56% of all reported sick days of nurses in in-patient units are due to musculoskeletal diseases and thus constitute the most reported cause for sick leave (Grabbe et al., 2005). Similar rates regarding the consequences of back pain have been reported in the USA (Panel on Musculoskeletal Disorders and the Workplace—Commission on Behavioral and Social Sciences and Education—National Research Council, 2001), the UK (Smedley et al., 2003) and the Netherlands (Ijzelenberg and Burdorf, 2004). Finally, back complaints are recognised—in the long run—as a leading cause for early retirement (Pattani et al., 2001) which in some regions may worsen the nursing shortage.

Diverse models with various foci have been introduced to account for the development of musculoskeletal disorders (MSD). Bongers and colleagues (1993) for example have emphasised the link between psychosocial factors at work and musculoskeletal disease, Armstrong et al. (1993) developed a conceptual model for work-related neck and upper-limb disorders and the 'Panel on Musculoskeletal Disorders and the Workplace (2001) proposed a broad conceptual model, which covers workplace-related factors like physical load, the organisational and social context, personal factors such as biomechanical loading, internal tolerances (including psychological states) and several outcomes such as pain, discomfort and disability for different localisations. The link between psychosocial factors and MSD has often been analysed and discussed (Carayon et al., 1999, Davis and Heaney, 2000, Gunnarsdottir et al., 2003, Rugulies et al., 2004, Violante et al., 2004). Nowadays, it is widely accepted that both physical (e.g., lifting and bending) and psychological exposure (e.g., stress at work) at work are associated with back pain and disability.

To measure complaints related to MSD, both pain and disability are outcomes used (Elders and Burdorf, 2001). Like intensity or recency of onset of complaints, disability is one of several indicators in the global assessment of pain (von Korff et al., 1992). However, in contrast to other pain measurements, disability is based on functional restrictions initiated through pain (Turner et al., 2004) and can be regarded as a consequence of pain.

Although the nursing profession is established in different parts of the health care system, studies often do not differentiate between different qualification levels of nurses and types of institutions where nurses work. In addition nurses' work and the working conditions vary across countries. To address this ecological background we summarise the two dimensions: country and type of institutions with the term 'setting'. While it seems to be unlikely that different settings cause different mechanisms for the development of MSD and disability, it seems to be inappropriate to ignore the setting. In their review on MSD, Sherehiy et al. (2004) identified only a few studies differentiating between groups of nurses according to (for example) qualification level (aides vs. registered nurses) and settings (hospital, nursing homes and homecare). Although back and neck pain and to a lower extent disability due to back and neck pain in nursing in hospitals and nursing homes have been extensively investigated, there is little research on nursing homes and home care. Cheung et al. (2006) for example identified only seven studies investigating home care settings. Although this might underestimate the number of research studies in this field, research comparing back or neck-related complaints in different nursing settings is still uncommon.

In summary, we conclude that neck or back-pain-related disability is a relevant issue in nursing, that both psychosocial and physical factors are contributing to back or neck-related complaints and that 'back and neck-pain-related disability' may constitute a valid alternative measure to the assessment of pain. Finally only little attention has been put on the influence of the setting with respect to MSD in nursing.