



Work-related musculoskeletal disorders in nurses working in South African spinal cord rehabilitation units



Kayleigh Brien, Zandile Lukhele, Janine Makhosazana Nhlapo, Anya Pieterse, Annelezé Swanepoel, Leila Wagener, Mokgadi Kholofelo Mashola*

Department of Physiotherapy, Faculty of Health Sciences, University of Pretoria, Private Bag x323, Arcadia 0007, South Africa

1. Introduction

Musculoskeletal disorders (MSDs) are the leading cause of work-related injuries among nurses (Chung et al., 2013) and are associated with pain, loss of function and disability (Sorour & El-Maksoud, 2012). Musculoskeletal disorders derive from physically demanding tasks such as helping patients to adjust position, maintaining a bent forward twisted posture and lifting heavy patients (Cilliers & Maart, 2013; Jellad et al., 2013; Punnett & Wegman, 2004). Musculoskeletal disorders can be inflammatory and degenerative disorders affecting the muscles, tendons, ligaments, joints, cartilage, peripheral nerves, supporting blood vessels or spinal discs (Anap, Iyer, & Rao, 2013; Punnett & Wegman, 2004). In this study, we classified work-related MSDs as any of the above-mentioned injuries occurring on duty and during patient handling activities.

In the United States, work-related injuries occur twice as often among nurses than among the general population, with more than half of those being MSDs (Bhimani, 2016). Nurses have to care for their patients continuously, making nurses more vulnerable to musculoskeletal strains and disorders (Attar, 2014; Hinmikaiye & Bamishaiye, 2012). Aside from being physically demanding, nurses also work in stressful environments, which may lead to risky behaviours resulting in work-related MSDs (Cilliers & Maart, 2013; Israni, Vyas, & Sheth, 2013). Nurses mostly report lower back injuries and associated pain, with frequencies ranging from 44.1% (Tinubu, Mbada, Oyeyemi, & Fabunmi, 2010) to 74.5% (Jellad et al., 2013). Lower back pain is often attributed to nurses having to stand for long periods, lifting and moving patients, working in awkward postures and pushing or pulling heavy loads (Anap et al., 2013; Attar, 2014; Chung et al., 2013; Jellad et al., 2013; Munabi, Buwembo, Kitara, Ochieng, & Mwaka, 2014). Nurses working with rehabilitation patients (Bhimani, 2016), obese or overweight patients (Choi & Brings, 2016) and with patients that have restricted movement may be especially prone to work-related MSDs. Caring for rehabilitation patients is especially demanding, since they have to be moved around for multiple activities in a day and nurses often don't have enough time to meet the busy schedules of such patients (Bhimani, 2016). The occurrence of work-related MSDs therefore

needs to be contextualised (Bhimani, 2016) to understand patterns of injury amongst nurses.

Patients with spinal cord injuries (PWSCI) are functionally dependent on nursing staff to assist with activities such as transfers. The PWSCI also need to be frequently and regularly repositioned to prevent secondary complications such as pressure sores and chest infections. Nurses working in spinal cord injury rehabilitation units (NuSCI) routinely have to lift heavy loads as part of their rotation duties. Patients with spinal cord injuries are often heavier than other patients and the need to lift and turn them may mean that NuSCI are more prone to injury than nurses in other settings. These highly physical work tasks put NuSCI at risk of developing sudden, acute and gradual as well as chronic work-related MSDs. Demographic characteristics, such as weight, height and years of professional experience, may also influence the development of work-related MSDs (Engels, van der Gulden, Senden, & van't Hof, 1996).

Work-related MSDs in nurses are a serious health workforce challenge and the health care system cannot afford to lose nursing staff to extended absenteeism, other employment or early retirement. Intent to leave the nursing profession has been associated with the incidence of work-related MSDs (Fochsen, Hagberg, Toomingas, & Lagerström, 2006). Although a number of studies have been done to establish the prevalence of work-related MSDs among nurses worldwide, little information is available on the prevalence of work-related MSDs among NuSCI in the City of Tshwane metropolitan area. We determined the prevalence of work-related MSDs among NuSCI; the most commonly affected body regions; the perceived job risk factors and coping strategies in the prevention of work-related MSDs.

2. Methods

We conducted a quantitative, descriptive cross-sectional study, sampling four spinal cord rehabilitation units in the City of Tshwane metropolitan area simultaneously.

* Corresponding author.

E-mail address: kholofelo.mashola@up.ac.za (M.K. Mashola).

2.1 Sample size and sampling method

We selected participants using a non-probability, total population sampling method. The population comprised of 86 NuSCI. Previous studies on work-related MSDs among nurses used sample sizes ranging from 118 to 212 (Anap et al., 2013; Tinubu et al., 2010). These studies did not target a speciality area of nursing. In South Africa, nurses working with PWSCI constitute a relatively small percentage of nurses. All NuSCI at the four rehabilitation centres were considered for inclusion. Student nurses in their first year of study were excluded.

3. Questionnaire

We collected data using a four section self-reporting questionnaire. The questionnaire was adapted from the Nordic questionnaire (Kuorinka et al., 1987) for this particular study by adding three questions to the demographic section (Section A) to suit the specific population in this study. Section D was adapted to include a four-part Likert scale compelling participants to think about their answer.

- In Section A, participants were required to complete questions regarding demographic characteristics such as age, gender, weight, height, rank and level of education.
- Section B requested information regarding occupational health in nursing practice and sought information regarding work status and setting, years of practice, patient population and nursing activities. This section also includes a modification of the standardised Nordic questionnaire (Kuorinka et al., 1987), which consists of questions on nine different body areas.
- Section C contains elements on perceptions of job risk factors, such as performing repetitive tasks and working in awkward positions.
- Section D requested information on coping strategies employed by nurses seeking to reduce the development of work-related MSDs.

The Nordic questionnaire has been adapted for use in other studies (Anap et al., 2013; Nkhata et al., 2015; Tinubu et al., 2010). We conducted a pilot study to pre-test the adapted questionnaire to evaluate face and content validity and feasibility, time and adverse events. We made minor adaptations to improve ease-of-use and to ensure clarity. We removed the following redundant questions in Section A: current area of practice, year of graduation and current work setting. We added a question asking if NuSCI perceive to have enough staff to perform their daily tasks. In Section B, we added a question asking which body area was affected (not within the previous 12 months). An insert was added instructing NuSCI who answered “No” to Question 2 to proceed to Question 8, as questions in the interim were not applicable to them. Following the pilot study, a follow-on question to Question 7 (Section B) was removed due to perceived redundancy. The Nordic questionnaire has a sensitivity and specificity ranging between 66% and 92% and 71% and 88% respectively (Ohlsson, Attewell, Johnsson, Ahlm, & Skerfving, 1994).

The researchers contacted the unit manager of each spinal cord injury rehabilitation unit to arrange dates to deliver the questionnaires. The unit manager distributed the questionnaires to potential participants who then had two weeks to consider whether or not they would like to participate in the study. The unit managers were contacted telephonically at least twice weekly to be reminded of the questionnaires and to assess whether more questionnaires were required. The answered questionnaires were placed back in envelopes once completed and placed in a box which was then locked the unit manager's office. This was done to ensure that the respondent's answers would be kept confidential. The questionnaires had no respondent's names to ensure anonymity in the event that someone would attempt to tamper with the completed questionnaires in the unit manager's office. Researchers collected the completed questionnaires on a weekly basis.

3.1. Statistical analysis

Data were analysed using both descriptive and inferential statistics on the SPSS version 23. Differences between groups were expressed using analysis of variance (ANOVA) tests and expressed as *F*. Scheffé post-hoc tests were used to compare the means of significant differences found and expressed as *M*. A confidence interval of 95% was reported. Results were significant if $p < 0.05$.

4. Ethical considerations

This study was approved by the Faculty of Health Science Research Ethics Committee of the University of Pretoria (Clearance number, 532/2015), and by management of the respective facilities. The informed consent forms were separate to the questionnaires to ensure that the participants completed the forms anonymously. This study had no foreseeable risks, as there were no interventions with potential adverse effects.

5. Informed consent

All participants received a preface outlining the research in the information leaflet and consent form together with the questionnaire. All the information and the questionnaires were presented in hard copy format and in English. Participants had the opportunity to request information via the contact details made available in the information leaflet. Participants were not obligated or forced to take part in the study. Participation was completely voluntary and participants could refuse to take part in the study or leave at any time without penalty. By completing the questionnaire, participants automatically gave informed consent. Once the completed questionnaires were in the possession of the researchers, the participants could not recall their consent and therefore the information obtained from the questionnaires were used in the study.

6. Results

We distributed 86 questionnaires to NuSCI. We collected 61 questionnaires representing a 70.9% return rate. We excluded two questionnaires that were completed by care-workers and not by nurses. The sample comprised of 49 female and 10 male NuSCI. As shown in Table 1, the mean age, height and weight of NuSCI were 36.73 ± 9.33 years, 1.59 ± 0.16 m, and 77.09 ± 15.42 kg respectively. Regarding rank, 44.1% were enrolled nursing assistants; professional nurses and enrolled nurses comprised 22.0%, unit managers 5.1% and student nurses 1.7%. The mean amount of professional working experience with PWSCI was 9.87 ± 7.55 years. The mean amount of hours per week that the nurses spent in direct spinal cord injured patient care were 40.14 ± 6.39 h (Table 1). Of the NuSCI, 59.3% had previous training on kinetic handling and how to prevent occupational hazards.

In this study, 57.6% ($n = 34$) of NuSCI experienced work-related ache, pain, discomfort or injury that lasted for more than three days in the last 12 months. Two-thirds (61%, $n = 36$) of NuSCI reported that they had experienced a work-related ache, pain, discomfort or injury that lasted for more than three days, and was not within the previous 12 months. As shown in Table 2, 12-month prevalence rates of work-related MSDs were highest in the lower back (73.53%), followed by shoulders (41.18%), knees and ankles (26.47%), thoracic back (23.53%), wrists/hands (17.65), hips/thighs (17.65%), neck (8.82%), and elbows (2.94%).

Table 3 displays what NuSCI perceive to be job risk factors. Bending or twisting your back in an awkward way was most commonly perceived to be a major problem (61%). Almost half (54.2%) of NuSCI perceived treating an excessive number of patients, working in the same position and continuing to work while injured or hurt to be major

Download English Version:

<https://daneshyari.com/en/article/8584201>

Download Persian Version:

<https://daneshyari.com/article/8584201>

[Daneshyari.com](https://daneshyari.com)