Study on Musculoskeletal Disorders and Related Factors among Female Nurses in the Central Province of Sri Lanka


Introduction

Musculoskeletal Disorders (MSDs) have been shown to be highly prevalent among nurses working in a variety of health care settings all over the world (Smith et al., 2003). Both developed and developing countries have been affected by similar proportions (Trinkoff et al., 2006, Anap et al., 2013). The high prevalence of MSDs in nurses is thought to be due to the physical demands of the work as well as organizational factors related to health care settings. Nurses are often required to lift heavy loads, work in awkward postures, transfer patients, and operate hazardous equipment which exceeds body tolerance (Trinkoff et al., 2006). As organizational factors hospital nurses are working longer hours with few or no breaks and often little time for recovery between shifts. Several trends in hospital staffing patterns have converged to create potentially hazardous conditions for patient safety as well as for nurses’ safety (Trinkoff et al., 2006).

Methods

A cross sectional comparative study was designed to assess the prevalence and determinants of MSDs among female nurses. The comparative group consisted of female teachers. A self-administered questionnaire was used as the research tool together with a section of the Nordic Musculoskeletal Questionnaire. The reliability and validity of this tool for the Sri Lankan situation was established (Munidasa et al., 2013). The sample consisted of 25 to 60 year olds who had work experience of more than one year. Those with physical disabilities and who had MSDs at the time of recruitment into their respective jobs were excluded. Multistage stratified random sampling was carried out for hospital selection. To select Nurses from individual hospitals, random sampling was used together with whole population selection for District Hospitals where necessary. Teachers’ sample was selected from two National Schools in Central Province. Dependent variables were Nurses MSDs and Teachers MSDs.
Independent variables were demanding postures, career duration, daily working hours, weekly working hours, hours spending on house work, Number of dependents, transport methods.

**Results**

The response rate was 90.7%. The data of 347 nurses and 124 teachers was analyzed. Mean ages were 41.8 for nurses and 45.7 for teachers. Of the nurses, 123 worked in Teaching hospitals, 100 in District Hospitals and 125 in Base hospitals. The mean height, weight and BMI of the respondent Nurses and teachers were almost similar. About 91.8% were married and 55.4% of them had more than twelve years career duration.

Prevalence of MSD’s in nurses was 83.6% whilst it was 75.0% in teachers. Commonest anatomical region affected by MSD was knee (50.1%) followed by ankle/feet (42.9%) and lower back (40.1) in nurses as opposed to knee (37.1%), upper back (33.1%) and shoulder (32.3%) in teachers. BMI (P<0.002), years of work exposure (P<0.042), daily and weekly working hours (P< 0.001) abnormal postures (p<0.042) and hours of daily house work (p<0.001) were found to be significant contributing factors. Associations were obtained by applying non parametric tests.

**Discussion**

The MSD prevalence rates of nurses varied according to studies but have been generally high (Trinkoff et al., 2006). A number of studies have reported Lower Back as the mostly affected site of nurses (Smith et al., 2003, Tinubu et al., 2010) but this study reports the knees and ankle/feet MSD rates relatively higher than those reported elsewhere (50.1% and 42.9% respectively).

Nurse’s long working hours with combination of demanding schedule characteristics increased the possibility of MSDs. This study shows that 37.6% of Nurses working more than 12 hours per day and
84.4% of Nurses working more than 40 hours per week. This result suggests a significant association with working hours and MSD.

**Key words:** Musculoskeletal problems, Nurses, Risk factors

**References**


