

Work related musculoskeletal disorders among nurses

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Abstract. A systematic review was conducted to study the current literature related to work related musculoskeletal disorders in nurses. A review was done using MEDLINE by the keywords “nurses”, “risk factors”, and “musculoskeletal disorders”. All the articles were reviewed by three reviewers based on the EPOC criteria and studies which were not adequate and inappropriate were excluded. Study design, type of data collection, assessment tools and outcomes obtained in the respective study were noted. Nurses were often required to lift heavy loads, work in awkward postures and transfer patients which were identified as the possible causes for acquiring WRMSDs.

Keywords. WRMSD, Nurses, Risk factors, Prevalence

1. Introduction

Overall the prevalence of work related musculoskeletal disorders (WRMSD) among nurses was found to be ranging from 70% to 90%. Low back was one of the commonest regions affected with pain among nursing professionals, accounting for a point prevalence of approximately 17%, an annual prevalence of 40-50% and a life time prevalence of 35-80% (Anap DB et al., 2013). WRMSDs are reported to significantly impact quality of life, cause loss of work time or absenteeism, increase work restriction, transfer to another job, or disability than any other group of diseases with a considerable economic toll on the individual, the organisation and the society as a whole. The aim of this systematic review was to review the measurement tools used, biomechanical risk factors and other findings regarding WRMSD among Nurses.

2. Methods

A systematic review of literature was done in MEDLINE using the keywords “nurses”, “risk factors”, and “musculoskeletal disorders”. The limits were set for all the articles, published in the years from 2000 to 2013. A total of seventy nine articles were found which underwent a 3 step review by three reviewers. 12 studies were taken for final review based on: study design, type of data collection, assessment tools and outcomes obtained in the respective study.

3. Results

Results of the review are presented in the table 1.

Table 1: Results after analysis of the article

Author & Year	Study Design & Sample size	Measurement Tool	Outcome
Harcombe et al (2010) Tinubu et al (2010) Ando et al (2000)	Cross sectional survey, 280,128 and 340 nurses	Self administered questionnaire	Distribution of pain, association with activities
Kuřagowska (2008)	Cross sectional analysis, 57 tasks	Questionnaire & OWAS	Distribution of pain, postural risk for various tasks
Simon et al (2008)	Cross sectional analysis, 21516	Self administered questionnaire	Psychosocial and physical risk factors for back and neck pain
Bos et al (2006)	survey, 3169 samples Cross sectional	Self administered questionnaire	Pain distribution, Risk factors
Nelson et al (2005)	Pre-Post experiment study, 23 high risk units	Survey, weekly progress, injury & cost log	Effectiveness of intervention
Corona et al (2005)	Cross sectional survey, 100 nurse + 100 PT	Self administered questionnaire	Pain prevalence, organisational factors
Violante et al (2004)	Cross sectional Survey, 901 female nurses	Self administered questionnaire	Physical, individual and psychosocial risk factors for LBP
Kjellberg et al (2003)	Experimental Study, 224 nurses	Questionnaire, Video observation & work technique assessment	Association between personal factors and work technique and Low back pain
Alexandre et al (2001)	Case control study, 56 nursing aides	Self administered questionnaire & VAS following an intervention	Effectiveness of education programme in prevention of MSD
Josephson et al (1997)	Three year follow-up survey	Karasek & Theorell's model for job strain, NMQ and VAS	Job strain is a risk factor for MSD and risk increases along with physical exertion

4. Discussion

Most of the studies were of survey type and the commonly used measuring tools were self reported questionnaires.

The review analysis indicated that job strain was a risk factor for musculoskeletal symptoms among nurses and that the risk was higher when it was combined with perceived high physical exertion. Recent studies have examined the association between nursing staff levels and quality of care in hospitals and have concluded that a higher percentage of nursing care hours were correlated with better patient outcomes, including fewer medical errors. The most commonly affected areas were the lower back, shoulder, neck, upper back, knees, feet and ankle. Working in the same positions for long periods, lifting or transferring dependent patients and treating an excessive number of patients in one day were the most perceived job risk factors precipitating WRMSDs among the nurses.

5. Conclusion:

A higher prevalence of WRMSDs can be attributed partially to more number of nursing professionals at work compared to other medical professionals who are less in number in the hospital setup. More high quality studies are needed to help develop preventive strategies for WRMSDs in nurses.