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Caregivers Need Care Too –Work Related Musculoskeletal Disorders in Nursing Staff

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Abstract
The debate about work relatedness of musculoskeletal disorders reflects both confusion about epidemiologic principles and gaps in the scientific literature. Debate regarding terminology and case definitions has discouraged practitioners from aggressively approaching the diagnosis and management of these conditions. Considerable progress has, however, been made recently. WMSDs are common among health care workers, with the nursing population that constitutes a major bulk of the hospital workforce particularly at high risk. repetitive movement, awkward postures, and high force levels as the three primary risk factors that have been associated with WMSDs. Nurses routinely perform activities that require lifting heavy loads, lifting patients, working in awkward postures, and transferring patients out of bed and from the floor. These work tasks put nurses at high risk for acute and cumulative WMSDs. This study sought to determine the prevalence of WMSDs, the associated job risk factors and the coping strategies towards reducing the risk of development of WMSDs among nurses using a questionnaire based self reporting study. The review of relevant literature was also done.
Keywords- *Work related of musculoskeletal disorders, nursing staff, prevelance, associated job risk factors, coping stategy*

INTRODUCTION

Work related musculoskeletal disorders (WMSDs) continue to be extremely common and to present an important challenge to clinicians. Even though these problems have attracted much attention in recent years, but the phenomena is not new. For instance Ramazinni established the link between musculoskeletal injuries and work over two hundred years ago. Debate regarding terminology and case definitions has discouraged practitioners from aggressively approaching the diagnosis and management of these conditions. Considerable

progress has, however, been made recently. These disorders have received many names, such as: repetitive motion injuries, Repetitive strain injuries, cumulative trauma disorders, occupational cervicobrachial disorders, overuse syndrome or regional musculoskeletal disorders .These disorders, affecting the back, lower limbs, and especially upper limbs and neck, can be extremely costly if not addressed appropriately. Generally resulting from a combination of physical factors (including repetition, force, and awkward postures) as well as other workplace environmental or organizational factors (including excessive work rates or durations, inadequate breaks, and a variety of psychosocial workplace characteristics), work-related musculoskeletal disorders can often be remediated when these factors are appropriately assessed and addressed. Clinicians must play a positive role in ensuring that this approach prevails. WMSDs are very difficult to define within traditional disease classifications. Most of the names do not accurately describe the disorders. For example, the term "repetitive strain injuries" suggests that repetition causes these disorders, but awkward postures also contribute. The traumatic injuries of the muscles, tendons and nerves due to accidents are not considered to be WMSDs or are considered separately. However, there are organizations, such as the European Agency for Safety and Health at Work, that include acute traumas and fractures within in the WMSD group. These terms are used synonymously.

Examples of work conditions that may lead to WMSD include routine lifting of heavy objects, daily exposure to whole body vibration, routine overhead work, work with the neck in chronic flexion position, or performing repetitive forceful tasks. There is evidence for relationships between work conditions and MSDs of the neck, shoulder, elbow, hand and wrist, and back. Musculoskeletal disorders are associated with high costs to employers such as absenteeism, lost productivity, and increased health care, disability, and worker's compensation costs.

AIM

WMSDs are common among health care workers, with the nursing population that constitutes a major bulk of the hospital workforce particularly at high risk. Silverstein et al reported repetitive movement, awkward postures, and high force levels as the three primary risk factors that have been associated with WMSDs. Nurses routinely perform activities that require lifting heavy loads, lifting patients, working in awkward postures, and transferring patients out of bed and from the floor. These work tasks put nurses at high risk for acute and cumulative WMSDs. This study sought to determine the prevalence of WMSDs, the associated job risk factors and the coping strategies towards reducing the risk of development of WMSDs among nurses.

MATERIAL AND METHODS

A questionnaire based self reporting survey was done. The questionnaire consisted of three sections.

Section A: The symptom-survey (a modification of the standardized Nordic questionnaire 11 and consisted of questions referring to nine body areas. These are 3 upper limb segments (shoulders, elbows, wrists/hands/thumb), 3 lower limb segments (hips/thighs, knees, ankles/feet), and 3 trunk segments (neck, upper back and lower back).

Section B consisted of items on perceptions on job risk factors that may contribute to development of work-related musculoskeletal disorders.

Section C had coping strategies towards reducing the risk of development of work-related musculoskeletal disorders.

Participants' Age group was divided as young (<35 years of age) and old (>35 years of age) and according to work experience as <5 years of work experience or 5 to 10 years of work experience.

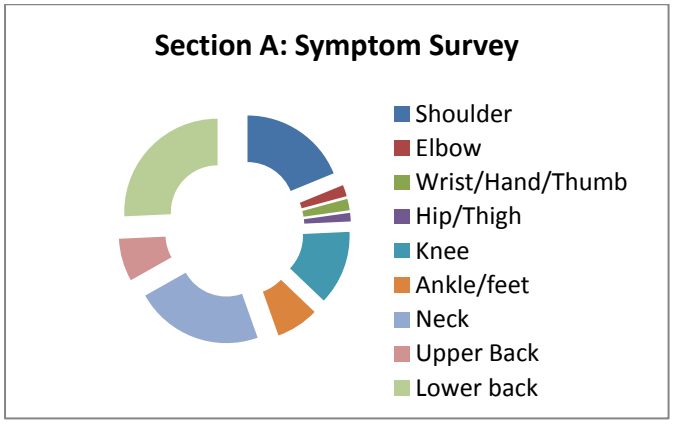
A total of 100 questionnaires were distributed of which all questionnaires were returned with complete data and hence all were used in the data analysis.

RESULTS

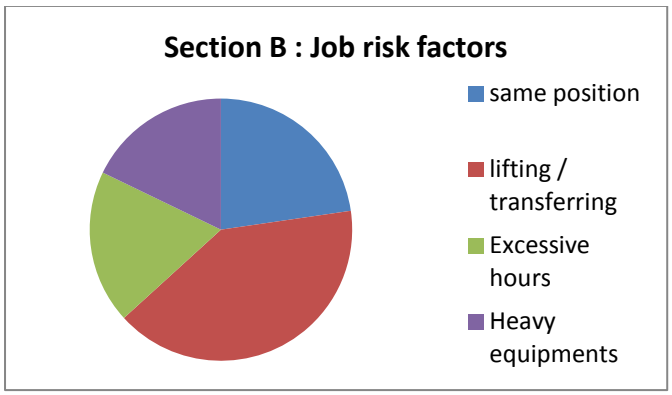
Of the respondents, 92% reported that they had experienced work-related musculoskeletal pain or discomfort at sometime in their occupational lives. The respondents reported a 12-month prevalence rate of WMSDs at anybody region to be 89%.

MSDs were higher in the older group ≥35 years (92%), and workers with 6-10 years of experience (91%)

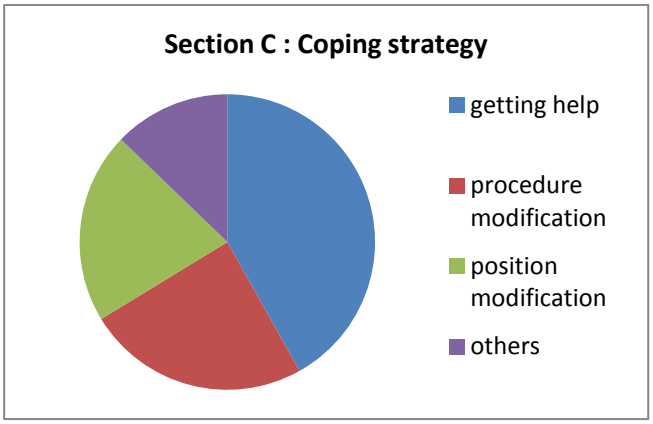
Section A: Symptom survey data showed WMSDs highest in the low back (52%), followed by the shoulder (38%), neck (45%) knee (26%), upper back (15%), feet and ankle (15%), elbow (4%), wrist/hand/thumb (4%) and hip/thigh (3%).



Section B: Job Risk Factors perceived for WMSDs were found out to be lifting or transferring dependent patients (75%), working in the same positions for long periods (42%), treating an excessive number of patients in one day (35%) and carrying, lifting or moving heavy material or equipments (33%).



Data of Section C: Coping strategies were, getting help to handle heavy patients (72%), procedure modification in order to avoid stress injury (42%), modification of patients or self position (36%), others (22%) such as stopping treatment if it causes or aggravates discomfort or selecting technique that will not aggravate or provoke the discomfort .



REVIEW OF LITERATURE and DISCUSSION

Review of literature showed that the debate about work-relatedness of musculoskeletal disorders (MSDs) reflects both confusion about epidemiologic principles and gaps in the scientific literature. The physical ergonomic features of work frequently cited as risk factors for MSDs include rapid work pace and repetitive motion, forceful exertions, non-neutral body postures, and vibration. While objective measures may be especially useful in establishing a more secure diagnosis, subjective measures better capture patient impact.

Examination techniques still do not exist that can serve as a "gold standard" for many of the symptoms that are commonly reported in workplace studies. RULA (rapid upper limb assessment) is a survey method developed for use in ergonomics investigations of workplaces where work-related upper limb disorders are reported. This tool requires no special equipment in providing a quick assessment of the postures of the neck, trunk and upper limbs along with muscle function and the external loads experienced by the body. Worker self-report, investigator

observation, and direct measurement each add to understanding but the lack of standardized exposure metrics limits ability to compare findings among studies. Reviewers internationally have concurred that the etiologic importance of occupational ergonomic stressors for the occurrence of MSDs of the low back and upper extremities has been demonstrated.

According to a study, WMSDs involved a median of 8 days away from work compared with 6 days for all nonfatal injury and illness cases and that the manufacturing and services industry sectors together accounted for about half of all WMSD cases. Musculoskeletal disorders account for nearly 70 million physician office visits in the United States annually, and an estimated 130 million total health care encounters including outpatient, hospital, and emergency room visits. According to estimates, the economic burden of WMSDs as measured by compensation costs, lost wages, and lost productivity, are between $45 and $54 billion annually. According to Liberty Mutual, the largest workers' compensation insurance provider in the United States, overexertion injuries—lifting, pushing, pulling, holding, carrying or throwing an object—cost employers $13.4 billion every year.

According to the US Bureau of Labor Statistics, disorders associated with "repeated trauma" or "cumulative trauma" account for 65% of all occupational illnesses in the US. In studies done elsewhere the picture is similar. Work-related musculoskeletal disorders that result from repetition or cumulative factors are more costly than conditions of similar pathology from acute trauma. In Washington State, the average direct workers' compensation claim costs were $12,794 for Carpal tunnel syndrome, and $15,790 for rotator cuff syndrome. It is estimated that compensable costs in the US for these disorders exceed $20 billion annually and adding indirect costs, the figures are much higher. Most authorities agree that early intervention improves prognosis.

Out of the nurses in our study, 89% reported WMSDs of some description occurring over the period of 12 months. This prevalence reported in our study was less than previous studies performed on nurses from Japan (91.9%) and higher than studies from Sweden (84%) and US (72.5%).In this study, most WMSD was that of Low back, whereas, most prevalent WMSD reported in nurses from Japan was that of shoulder (71.9%). In another study by Choobineh, the 12month prevalence of MSDs was 84.4% which is less than what we found in our study, low back symptoms were the most prevalent MSDs in their report, which are similar to our study. There is considerable international literature regarding LBP in nursing, with the 12-month period prevalence previously reported in the following countries: Hong Kong (40.6%), France (41.1%),England (45%) and Sweden (64%). According to Sheikhzadeh, the most prevalent MSDs among nurses was low back pain (84%). Fabunmi also reported low back pain was the most common MSDs (78.0%). Some researchers reported that more than half (56%) of their Nurses have ongoing back trouble

Lifting patients in bed, transferring patients out of bed, and lifting patients from the floor were the job activities most commonly reported as sources of back pain among nurses. 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 WMSDs in this study. These findings are consistent with previous reports indicating manual patient handling, transferring or moving as important predictors of musculoskeletal disorders and low back pain among nurses. Manual handling is a particularly important issue in nursing, because staff must meet the demands of patients at any time. Lack of lifting knowledge and nonavailability of lifting devices is generally one of the reason for injuries. Furthermore, many patient-related manual handling activities need to be undertaken in less than ideal spaces and in

suboptimal time frames, such situations often incur great biomechanical strain, which may eventually lead to the development of MSD.

In this study, getting assistance or support staff in handling heavy patients, modification of nursing procedures in order to avoid re-injury or stressing an injury, and modification of patient's/nurse position were the top three coping strategies in reducing the risk of WMSDs. Similar coping strategies were found in a study on Nigerian nurses.

DRAWBACKS OF THE STUDY

Since our study was a questionnaire based self reported survey, thus, reflecting the attitude and perception of nurses regarding ache, pain and discomfort. Therefore, the prevalence of WMSDs among nurses with those exposed to the same level of hazards may be very different due to their different attitudes and perception.

CONCLUSION

Work-related musculoskeletal disorders (WMSD) continue to be the fastest growing cause of work-related disability.Clinicians need to diagnose and treat these conditions, establish their relation to occupational risk factors, and intervene to minimize their occurrence.

Such knowledge would have application in preventive programs in a number of diverse work settings. Further prospective studies are required to confirm these findings. The information provided in this article may be useful to healthcare providers, researchers, and ergonomists interested on risk identification and design of interventions to reduce the rates of work-related musculoskeletal disorders.

REFERENCES

1. Stubbs DA, Buckle P, Hudson MP, Butler PE, Rivers PM: Back pain in the nursing profession, part I: epidemiology and pilot methodology. Ergon 1983, 26:755-65.
2. Videman T, Nurminen T, Tola S, Kuorinka I, Vanharanta H, Troup JD: Low back pain in nurses and some loading factors at work. Spine 1984;9:4004.
3. Wilkinson WE, Salazar MK, Uhl JE, Koepsell TD, DeRoos RL, Long RJ: Occupational injuries: a study of health care workers at a northwestern health science center and teaching hospital. Am Assoc Occup Health Nurs J 1992;40:287-93.
4. Smedley J, Egger P, Cooper C, Coggon D: Manual handling activities and risk of low back pain in nurses. Occup Environ Med 1995;52:160-3.
5. Lusted MJ, Carrasco CL, Mandyk JA, Healey S. Self reported symptoms of the neck and upper limbs in nurses. Appl Ergon 1996;27:381-7.
6. Yip YB: A study of work stress, patient handling activities and the risk of low back pain among nurses in Hong Kong. Journal of Advanced Nursing 2001;36:794-804.
7. Alexopoulos EC, Burdorf A, Kalokerinou A: Risk factors for musculoskeletal disorders among nursing personnel in Greek hospitals. Int Arch Occup Environ Health 2003;76:289-94.
8. Kuorinka I, Jonsson B, Kilbom A, Vinterberg H, Biering-Sørensen F, Andersson G, Jørgensen K: Standardised Nordic questionnaire for the analysis of musculoskeletal symptoms. App Ergon 1987;18:2337.
9. Musculoskeletal disorders among hospital nurses in rural Japan. Smith DR, Kondo N, Tanaka E, Tanakamong hospital nurses in rural Japan. Smith DR, Kondo N, Tanaka E, Tanaka H, Hirasawa K, Yamagata Z. Rural Remote Health. 2003;3:241.
10. Lipscomb, J., Trinkoff, A., Brady, B., & GeigerBrown, J. (2004). Health care system changes and reported musculoskeletal disorders among registered nurses. Am J Public Health 2004;94:1431-5.

11. Fabunmi AA, Oworu JO, Odunaiya NA. Prevalence of musculoskeletal Disorders among nurses in University College Hospital, Ibadan. West African Journal of Nursing 2008;19:21-5.
12. Choobineh A, Rajaeefard A, Neghab M. Association between perceived demands and musculoskeletal disorders among hospital nurses of Shiraz University of Medical Sciences: a questionnaire survey. Int J Occup Saf Ergon 2006;12:409-16.
13. Applied Ergonomics Volume 24, Issue 2, April 1993 RULA: a survey method for the investigation of work-related upper limb disorders.
14. Current Opinion in Rheumatology:March 2000 - Volume 12 - Issue 2 - pp 124-130 Nonarticular rheumatism, sports-related injuries, and related conditions Work-related musculoskeletal disorders Yassi, Annalee MD, MSc
15. Am. J. Ind. Med. 53:285–323, 2010.Risk factors for work-related musculoskeletal disorders: a systematic review of recent longitudinal studies Bruno R. da Costa and Edgar Ramos
16. A conceptual model for work-related neck and upper-limb musculoskeletal disorders Thomas J Armstrong, Peter Buckle, Lawrence J Fine, Mats Hagberg, Bengt Jonsson, Asa Kilbom, Ilkka AA Kuorinka, Barbara A Silverstein, Gisela Sjogaard and Eira RA Viikari-Juntura *Scandinavian Journal of Work, Environment & Health* Vol. 19, No. 2 (April 1993)
17. Journal of Electromyography and Kinesiology Volume 14, Issue 1, February 2004, State of the art research perspectives on muscoskeletal disorder causation and control David H. Wegman Laura Punnett Work-related musculoskeletal disorders: the epidemiologic evidence and the debate `
18. Musculoskeletal disorders and workplace factors; a critical review of epidemiologic evidence work-related musculoskeletal disorders of the neck, upper extremity, and low back Bernard, Bruce P National Institute of Occupational Safety and Health July 2007
19. Centres for disease control and prevention (cdc.gov> workplace health promotion) and Canadian Centre for Occupational Health and safety
20. Sergae Simoneau et al. IRSST Manual 1996 Work related musculoskeletal disorders- A better understanding for more effective prevention