



Work-related musculoskeletal disorders among various health care professionals

Dr. M. Balaganapathy^a, Ms. Sweni Shah^a

^aCharotar University of Science & Technology, Ashok & Rita Patel Institute of Physiotherapy, Changa, Anand, India, balaganapathy.phy@charusat.ac.in, swenishah444@gmail.com

Abstract: Introduction: WRMSDs are considered to be multifactorials that are caused due to the interactions between various risk factors, which result in conditions that vary across different occupations. Although health care profession is known to be at a high risk for WRMSDs. Hence this study was aimed at looking into the WRMSDs affecting three different health care professionals. It compared the prevalence and distribution of WRMSDs among the three groups, evaluated the multiple risk factors that contribute to the development of WRMSDs, and identified the high-risk group. Methods: It was a cross-sectional study conducted among dentists, surgeons, and physiotherapists of various clinical departments in India from 2010 to 2014. In this study, the participants (n=334) were selected. Different combinations of validated and standardized questionnaires were used. Results: A high proportion of health care professionals reported WRMSDs at one or the other body region. In dentists the most common affected regions are neck (74.8%) followed by lower back (40.9%). In Physiotherapists the most common affected regions are lower back (47.31%) followed by the neck (18.28%). In Surgeons most common affected regions are lower back (40%) followed by neck (24%). Conclusion: Among all the health care professionals assessed in this study, dentists were found to be at the highest risk followed by physical therapists and surgeons. Key words: Health care professionals, risk factors, WRMSDs

1. Introduction

Musculoskeletal disorders (MSDs) in the workplace have a huge impact, emerging as a growing problem in our modern societies; [1] they represent the second largest cause of short-term or temporary work disability after the common cold. [2] Work-related musculoskeletal disorders (WRMSDs) are responsible for morbidity in many working populations and are known as an important occupational problem with increasing compensation and health costs, reduced productivity, and lower quality of life. [3]

Moreover, WRMSD is the most expensive form of work disability. It was estimated that the cost of WRMSD was approximately 215 billion dollars in 1995 in the United States; 26 billion Canadian dollars in 1998 in Canada, and 38 billion Euros in 2002 in Germany. [1] India has been battling with conventional public health problems such as communicable diseases, malnutrition, high rate of population growth, and inadequate medical care, apart from the occupational health problems. [2] MSD is one of the major occupational health problems in India and estimates have shown that MSD contributes to about 40% of all costs toward the treatment of work-related injuries. [3]

Health care profession is known to be at high risk for WMSDs. Health care professionals are reported to be vulnerable to sustaining musculoskeletal disorders during the course of their work routine. [4] It is estimated that almost one-third of all cases of sick leave among health care workers are related to MSDs. [5]

Previous studies indicated that prevalence of musculoskeletal complaints, particularly low back and neck-shoulder, were high in nurses and X-ray technologists. [2] A study conducted on 1,600 employees in six hospitals in Turkey reported that nurses had the highest prevalence of low back pain. Age, female sex, smoking, occupation, perceived work stress, and heavy lifting were significant and independent risk factors for low back pain. [2]

A cross-sectional study conducted on dentists, laboratory technicians, nurses, physicians, and physiotherapists in a tertiary care hospital in India revealed that working in the same position for long periods, working in awkward positions, and handling a large number of patients were commonly reported risk factors for work-related musculoskeletal disorders. [4] Results from a mail survey of 3,297 randomly selected physical and occupational therapists living in Wisconsin reported that their annual incidence rate of work-related injuries were comparable to that among workers employed in heavy manufacturing.

High prevalence for back pain, neck, shoulder, and hand-wrist region complaints among dental professionals had also been reported. [5]

2. Objectives

This study was aimed at looking into the WRMSDs affecting three different health care professionals that are dentists, surgeons, and physiotherapists. It compared the prevalence and distribution of WRMSDs among the three groups, evaluated the multiple risk factors that contribute to the development of WRMSDs, and identified the high-risk group.

3. Materials and Methods

Study design- Cross-sectional survey study.

Study population

This study conducted among dentists (n=115), surgeons (n=50), and physiotherapists (n=169) of various clinical departments in India from 2010 to 2014. In this study, the participants (n=334) were selected. In all the above mentioned categories of professionals, clinicians and clinician-cum-academics with willingness to take part in the study were included as study participants. The health care professionals those with current musculoskeletal trauma and those who refused to participate were excluded from the study.

The participants were explained about the importance of this study and about the questionnaire. The informed consent was obtained from the participants. Different combinations of validated and standardized questionnaires were used for collecting different types of data.

Data Collection tool

For Dentists and Physiotherapists self-administered questionnaire consisting of 22 items based on Nordic questionnaire was used for screening of WRMSDs. It includes components like, Number of working hours per day, Number of patients treated per day, Duration of working hours on dental chair per day, Treatment time duration for each patient,



Time spent on sustained forward bent trunk postures with each patient, Time spent in rotated and/or side-bent trunk postures with each patient, Time spent with arm working above his/her shoulder level with each patient, Time spent in wrist bent position with each patient, Time spent forcefully gripping a tool with each patient, Time spent as rest periods or breaks between procedures on a single patient, Time spent as rest periods or breaks between patients.

For Surgeons Quick Exposure Check (QEC) was used for screening of WRMSDs. Quick exposure check assesses the changes in exposure to musculoskeletal risk factors of the back, shoulders and arms, hands and wrists, and neck. They were also asked to highlight the body regions that they had experienced discomfort in given body chart.

Procedure:

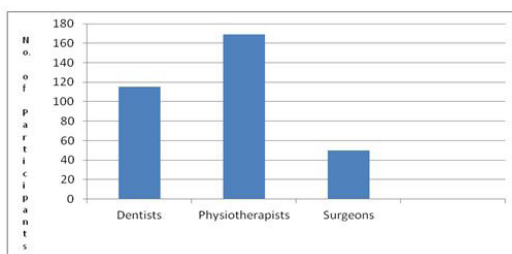
1. Instruction and questionnaire was provided to eligible participants.
2. Informed consent was taken.
3. Completed questionnaire was returned by the participants.

4. Results

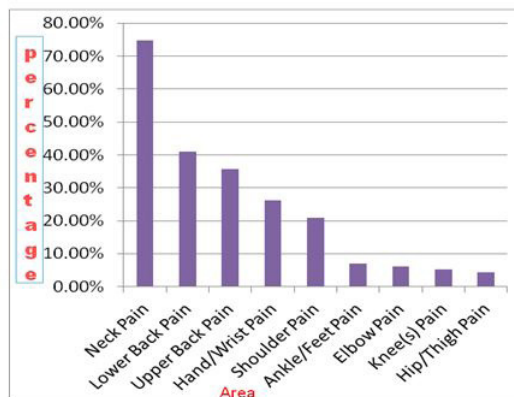
In this study dentists (n=115), surgeons (n=50), and physiotherapists (n=169) participated.

1. In dentists the most common affected regions are neck (74.8%), lower back (40.9%) followed by upper back (35.7%). (Graph 2)

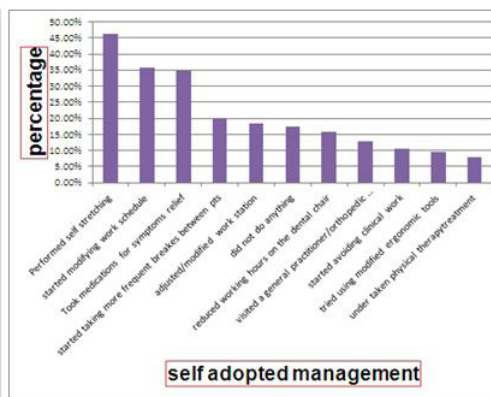
2. In Physiotherapists the most common affected regions are lower back (47.31%) followed by the neck (18.28%).



Graph 1

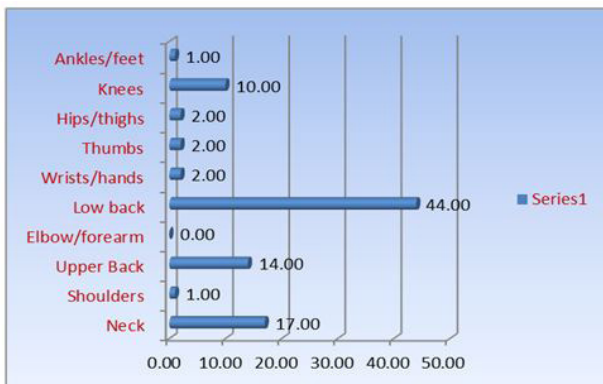


Graph 2

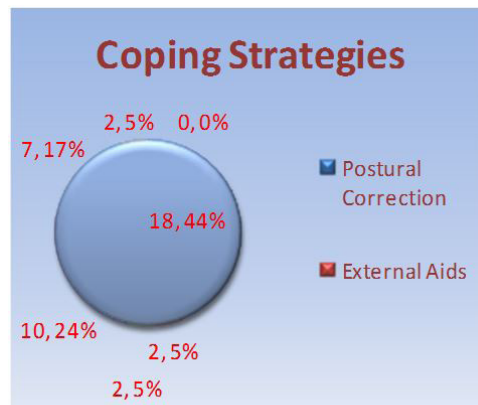


Graph 3

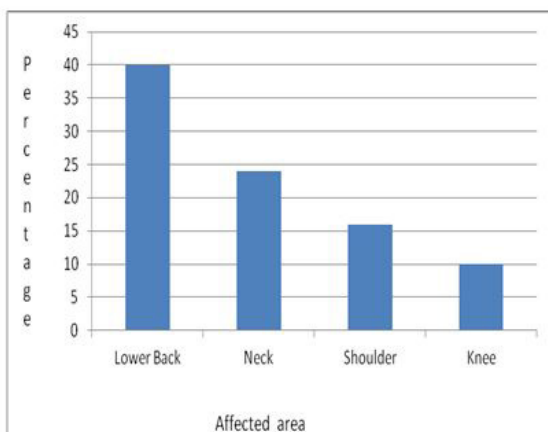
3. In Surgeons most common affected regions are lower back (40%), neck (24%) followed by shoulder (16%) and knees (10%).



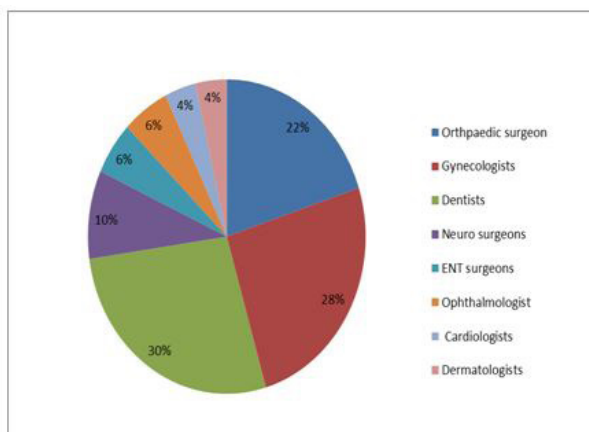
Graph 4



Graph 5



Graph 6



Graph 7

5 Discussion

Prevalence of musculoskeletal disorders varies across occupational groups and over national boundaries. It may be due to lack of orientation to the work station or vigorous working style of the youngsters as compared with the older professionals, who are well adapted to the work station and mostly follow safe working principles.

From this study, we found between occupation and prevalence of WMSDs among the health workers. Among all, low back pain was the predominant complaint, followed by neck pain, shoulder pain, and knee and ankle pain. The least of complaints were reported at wrist, hip/thigh, and elbow, which supports the study results of Emmanuel et al.

The highest prevalence of WMSDs found among dentists is similar to a previous study by Vishwas Madaan et al. One study on over 400 operating room assistants in the Netherlands, reported a prevalence of 46% for back pain. It would be expected that surgeons of various specialties may also be at high risk for neck and back pain as a result of their sustained postures during surgical procedures.

A study by Wauben examined surgeons who performed surgeries involving



laparoscopic and thoracic procedures mainly with increasing age and cumulative exposure to job stress, it would be expected that older surgeons may have a higher risk of developing musculoskeletal disorder and it also has been reported in other studies that younger workers had higher prevalence rates of musculoskeletal disorder due to their lack of experience resulting in poor job skills and insufficient practice.

High rates of work-related musculoskeletal injury are well documented among medical professionals, and particularly among physical therapists, surgeons, dental professionals, and nurses. Clearly, possession of knowledge on ergonomics alone was insufficient to prevent physical therapists from the potential injuries that are inherent to the nature of their clinical work.

6. Conclusion

Among all the health care professionals assessed in this study, dentists were found to be at the highest risk followed by physical therapists and surgeons. A better planned long-term study eliminating the limitations of the current study, using more quantitative analytical tools may give an accurate estimate of WRMSDs and job risk factors with exposure to risk levels among health professionals and thereby, a better means to accurately recommend and implement policies and strategies to combat these risk factors for WRMSDs among health care professionals. We recommend that awareness, education, and training programs on prevention and coping strategies for musculoskeletal disorders be made mandatory for health care professionals.

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