

## ORIGINAL ARTICLE

VIMSJPT

## PREVALENCE OF MUSCULOSKELETAL PAIN IN NURSES

Aparna Arun Thakur<sup>1</sup> Supriya Dhumale<sup>2</sup><sup>1</sup>Consultant Physiotherapist, Mumbai, Maharashtra, India<sup>2</sup>Assistant Professor, K.J. Somaiya College of Physiotherapy, Mumbai, Maharashtra, India

## ABSTRACT:

**BACKGROUND-** Work-related musculoskeletal disorders (WMSDs) are a common cause of morbidity affecting many working individuals. These disorders lower the individual's productivity and also affect quality of life. Healthcare workers are known to be at a high risk for WMSDs. However, it is one of the least studied occupations. Nursing is a physically demanding profession and WMSDs have been considered as the leading factor for absenteeism among the nursing professionals. Hence the objective of the present research was to study prevalence of musculoskeletal pain in nurses. **METHOD:** 50 female nurses with a work experience of at least 2 years, having musculoskeletal pain for at least 6 months duration were selected for the study. An observational study was conducted using interview based questionnaire. Data collected was subjected to statistical analysis. **RESULT:** Prevalence of musculoskeletal pain in nurses was found to be 88%. Low back was found to be the commonest site of pain (70.45%), followed by knee (56.81%), neck (47.72%), leg (25%), shoulder (6.81%) and elbow (4.54%). **CONCLUSION:** Study concluded that prevalence of musculoskeletal pain in nurses is high.

**KEY WORDS:** Musculoskeletal pain, Work related musculoskeletal disorders, Nurses, Prevalence

Received 18<sup>h</sup> May 2020, Accepted 20<sup>th</sup> June 2020, Published 30<sup>h</sup> June 2020



www.vimsptcr.in

## CORRESPONDING AUTHOR

Aparna Arun Thakur

Consultant Physiotherapist,  
Mumbai, Maharashtra, India

E-mail: - draparnathakur18@gmail.com

Phone No: +91 9004544091

## INTRODUCTION

The term musculoskeletal disorders encompass a gamut of inflammatory and degenerative conditions that affects the muscles, tendons, ligaments, joints, peripheral nerves, and supporting blood vessels with consequent ache, pain or discomfort [1],[2],[3]. Musculoskeletal conditions account for over two percent of the global disease burden, and constitute the most common cause of chronic disability [3]. Musculoskeletal disorders are reported to occur in certain industries and occupations with rates up to three or four times higher than the average rate across all industries [1],[2],[3].

India being a developing nation is faced with traditional public health problems like communicable diseases, malnutrition, poor environmental sanitation and inadequate medical care. However, globalization and rapid industrial growth in the last few years has resulted in emergence of occupational health related issues [4]. Work-related musculoskeletal disorders (WMSDs) are defined as musculoskeletal disorders that results from a work-related event [5]. WMSDs are common among health care workers, with the nursing population being at a high risk and accounting for 60% of the reported occupational injuries [3].

Nursing is a physically demanding profession. Nurses suffer a disproportionate amount of musculoskeletal disorder as a result of cumulative effect of repeated manual patient handling events often involving unsafe loads [6]. WMSDs have been recognized to significantly affect quality of life, thus leading to lost work time or absenteeism, increase work restriction, transfer to another job, or disability [1],[3]. This can have a considerable economic toll on the individual, the organization and the society as a whole [7].

Although healthcare workers are known to be at a high risk for WMSDs, it is one of the least studied occupations. Hence, present research is done to study the prevalence of musculoskeletal pain in nurses.

## METHOD

This was a cross-sectional study carried out at tertiary health care center on 50 female nurses. Sample size was calculated according to the parent article. Nurses with

work experience of at least 2 years and having musculoskeletal pain for at least 6 months duration were included in the study. Nurses who were at supervisory level, who had a history of musculoskeletal pain before joining nursing service and those who had musculoskeletal pain which is neurological in origin were excluded.

## PROCEDURE

A questionnaire was prepared for the study. Face validity of the questionnaire was done. Individuals satisfying the inclusion criteria and willing to participate in the study were selected. The purpose of study and the study procedure was explained to them. Following this, their written consent was obtained. An observational study was conducted using interview based questionnaire. Data collected was subjected to statistical analysis.

## RESULTS

Data was analysed using Microsoft Excel. Study was conducted on 50 female nurses working in OPDs, O.T. and wards of a tertiary health care center. Prevalence of musculoskeletal pain in nurses was found to be 88% (Table 1). 79.54% of subjects reported pain at multiple sites, whereas 20.45% of subjects reported pain at single site. Commonest site of pain among all the nurses was found to be low back (70.45%), followed by knee (56.81%), neck (47.72%), leg (25%), shoulder (6.81%). 4.54% of subjects also reported pain in elbow (Table 2). Commonest site of pain in nurses working in OPD was found to be neck (78.57%), those in O.T. was found to be low back (100%) and in wards was found to be low back & knee (63.15%) (Table 3). 70.45% reported variation of pain with shift duties with 58.06% of subjects reporting pain to be more during morning shift. 25.80% reported pain to be more during night shift while 19.35% reported pain being more during afternoon shift.

**Table 1:** Prevalence of musculoskeletal pain in nurses

N	Pain present	No pain
50	88%	12%

**Table 2:** Site of pain as per site of pain

Neck	Shoul-der	Low back	Leg	Knee	Elbow
47.72%	6.81%	70.45%	25%	56.81%	4.54%

**Table 3:** Site of pain among nurses in different postings

Site of pain	Low back	Knee	Neck	Leg	Shoulder	Elbow
Ward nurses	63.15%	63.15%	42.10%	26.31%	10.52%	
O.T. nurses	100.00%	45.45%	18.18%	18.18%	9.09%	18.18%
OPD nurses	57.14%	57.14%	78.57%	28.57%		

(O.T.: Operation Theatre; OPD: Out patient department)

## DISCUSSION

Work related musculoskeletal disorders have been described as one of the major health problems among health care workers [1]. Various studies have shown that prevalence of musculoskeletal symptoms is high among health professionals. The present study is done to find out the prevalence of musculoskeletal pain in nurses.

In this study, prevalence of musculoskeletal pain in nurses was found to be 88%. 79.54% of subjects reported pain at multiple sites, whereas 20.45% of subjects reported pain at single site. Commonest site of pain among all the nurses was found to be low back (70.45%), followed by knee (56.81%), neck (47.72%), leg (25%), shoulder (6.81%) and elbow (4.54%). Commonest site of pain in nurses working in OPD was found to be neck (78.57%), those in O.T. was found to be low back (100%) and those working in wards was found to be low back & knee (63.15%). 70.45% reported variation of pain with shift duties with 58.06% of subjects reporting pain to be more during morning shift. 25.80% reported pain to be more during night shift while 19.35% reported pain being more during afternoon shift.

The findings of the present study are consistent with the Nigerian study done by Bolanle MS, et al (2010) which reported 84.4% prevalence of WMSDs among nurses. Commonest site of pain was found to be low back (44.1%) followed by neck (28%) and knees (22.4%) [3]. Also, a study done by Smith DR, et al (2004) showed 70% prevalence of WMSDs in nurses. In their study also, low back was observed to be the most common site of pain (56.7%), followed by neck (42.8%), shoulder (38.9%), and upper back (38.9%) [8]. The findings of the present study are also in accordance with the study done by Smith DR, et al (2003), which demonstrated a high prevalence of musculoskeletal pain in nurses, with 59% nurses reporting low back pain,

followed by shoulder (46.6%), neck (27.9%), knee (16.4%) & leg (11.8%) [9].

A number of intrinsic and extrinsic factors have been implicated in the etiology of work-related musculoskeletal disorders [1],[3]. Silverstein et al, reported repetitious movement, awkward postures, and high force levels as the three primary risk factors that have been associated with WMSDs among nurses [10]. Muscle tissue can be damaged with the wear and tear of daily activities. Nurses routinely perform activities that require prolonged static postures like standing, bending forwards, sitting, repeated movements, awkward positions. These work tasks put nurses at high risk for acute and cumulative WMSDs. This may result in chronic disability, thus leading to sickness absenteeism, inadequate staffing or even transfer to another job [3].

Thus, results of the present study conclude that the prevalence of musculoskeletal pain in nurses is high. However, the present study had limitations since it was not restricted to a specific age group. Also, it was conducted in a limited geographical area.

## CONCLUSION

The study concludes that the prevalence of musculoskeletal pain in nurses is high. Hence, the study is suggestive of periodical assessment of nurses for musculoskeletal pain in order to detect the problems in early stage and treat promptly. Also, a programmed orientation related to the ergonomics and body mechanics could be beneficial for the nurses in preventing work-related musculoskeletal pains.

## FUNDING

The authors received no specific funding for this study.

## CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

## ACKNOWLEDGEMENT

My sincere and heartfelt gratitude to all the participants, my guide, departmental staff, my parents, colleagues and friends for their co-operation during the study.

---

## REFERENCES

1. Punnett L, Wegman DH. Work-related musculoskeletal disorders: the epidemiologic evidence and the debate. *Journal of electromyography and kinesiology*. 2004 Feb 1;14(1):13-23.
2. Smith DR, Leggat PA. Musculoskeletal disorders in nursing. *Australian Nursing Journal: ANJ, The*. 2003 Jul;11(1):19.
3. Tinubu BM, Mbada CE, Oyeyemi AL, Fabunmi AA. Work-related musculoskeletal disorders among nurses in Ibadan, South-west Nigeria: a cross-sectional survey. *BMC Musculoskeletal disorders*. 2010 Dec 1;11(1):12.
4. Saiyed HN, Tiwari RR. Occupational health research in India. *Industrial health*. 2004;42(2):141-8.
5. Salik Y, Özcan A. Work-related musculoskeletal disorders: a survey of physical therapists in Izmir-Turkey. *BMC musculoskeletal disorders*. 2004 Dec 1;5(1):27.
6. Smedley J, Egger P, Cooper C, Coggon D. Manual handling activities and risk of low back pain in nurses. *Occupational and environmental medicine*. 1995 Mar 1;52(3):160-3.
7. Kemmlert K. Prevention of occupational musculoskeletal injuries. Labour Inspectorate investigation. *Scandinavian journal of rehabilitation medicine. Supplement*. 1996;35:1-34.
8. Smith DR, Wei N, Kang L, Wang RS. Musculoskeletal disorders among professional nurses in mainland China. *Journal of Professional Nursing*. 2004 Nov 1;20(6):390-5.
9. Smith DR, Ohmura K, Yamagata Z, Minai J. Musculoskeletal disorders among female nurses in a rural Japanese hospital. *Nursing & health sciences*. 2003 Sep;5(3):185-8.
10. Silverstein BA, Fine LJ, Armstrong TJ. Occupational factors and carpal tunnel syndrome. *American journal of industrial medicine*. 1987;11(3):343-58.

### How to cite this article:

Aparna Arun Thakur, Supriya Dhumale. PREVALENCE OF MUSCULOSKELETAL PAIN IN NURSES. *VIMS J Physical Th. Jun* ;Jun 2020;2(1): 13-16

### Submit your next article to VIMS Journal of Physical Therapy and take full advantage of:

- Easy online submission
- Internal and external review
- Free plagiarism and Grammarly check
- Immediate publication on acceptance
- Research which is freely available through open access
- Go Green drive – No paper use.
- No processing fees
- E- certificate for publication

Submit your next manuscript at [www.vimptcr.in](http://www.vimptcr.in) . ISSN No. : 2456-4087 (O)