Prevalence of Foot and Ankle Musculoskeletal Disorders in Nurses of Lahore, Pakistan

Sofia Tariq, Farooq Islam, Ashfaq Ahmad & Syed Amir Gilani

Abstract- Introduction: Musculoskeletal disorders are one of main leading problems in nurses. It is mainly important to understand the causes of musculoskeletal disorders among nurses. In nurses Foot/ankle disorders are very common and ankle is the most common part to sustain injuries. The current study found out rate and prevalence of foot or ankle musculoskeletal disorders in nurses. It was a cross-sectional survey study.

Settings: Data was collected from Carian Hospital, Jinnah Hospital, Ganga Ram Hospital, Children Hospital and Services Hospital.

Methods: 369 nurses participated in the survey. All participants were females and their minimum age was ±20 year, maximum age was ±57 year and their mean age was ±31 years. The duration of the study takes six months to complete. Nordic Musculoskeletal questionnaire (NMQ) was use to collect the data from hospitals of Lahore.

Results: Prevalence of foot and ankle pain was 47.4%, 35.5% in last 12 months and 78% in last 7 days.

Keywords: prevalence, musculoskeletal disorders, pain, nurses, foot.

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Prevalence of Foot and Ankle Musculoskeletal Disorders in Nurses of Lahore, Pakistan

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Results: Prevalence of foot and ankle pain was 47.4%, 35.5% in last 12 months and 78% in last 7 days.

Conclusion: Foot and ankle musculoskeletal disorders were common problem among nurses. We recommended nurses be provided with important education regarding self-care strategies and treatment plan and need to some break during working time.

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I. Introduction

Musculoskeletal disorders are one of main leading problems in nurses[1]. Musculoskeletal disorders (MSD) are refer to define the conditions, in which muscles, ligaments, and tendons, joints, cartilage and spinal discs can are support the human structure[2]. Musculoskeletal disorders (MSDs) are one of the most essential reasons of occupational harm and disability in healthcare profession[3]. Common MSD include tendinopathy, Ligament sprain, Tension neck syndrome, Thoracic outlet compression, Rotator cuff tendonitis, Epicondylitis, Digital Neuritis, Trigger thumb, Degenerative disc disease, Ruptured disc, Mechanical back syndrome and many more[4]. Musculoskeletal disorders affect the human body movement, function and system[5]. Musculoskeletal problem are the common problem in nurses because it provides continuous care of the patient. It is one of the common problem worldwide in nursing population[6].

Common symptoms are occurring when patients have musculoskeletal disorder, in which include Localized or Deep pain that can worse with movement, Sleep disturbance of patient, quickly fatigue, feels like muscle pulling, deep aching pain, burning of the muscles, stiffness of the body, and many more which may differ from each patient[7]. There are so many musculoskeletal disorders which are reported. Such problems can reduce the quality of life, duration of work is minimized, behavior of individual is changed, and patients become impatient[8].

Main causes of musculoskeletal disorders are due to repetitive movements, fractures, fall, heavy lifting, dislocation, sprain, strain, poor balance, and overuse of muscle, poor posture and immobilization[9]. But there are three primary risk factors repetitive movements, poor posture and high force levels which are main leading cause of musculoskeletal disorders[10]. Studies reported high prevalence rate is low back pain ranging from 32%[5, 11] to 90%[12, 13] but it is also common in the other body areas like knee(7%[11] to 68%[14]), neck (12%[11] to 52%[15]) shoulder(17%[11] to 48%[14]) and foot/ankle. It is mainly important to understand the causes and musculoskeletal injuries among nurses[12]. In nurses Foot/ankle disorders are very common and ankle is the most common part to injured[5]. Job demand is directly related to the problem of musculoskeletal disorders among health professional especially nurses[8]. A study was conducted in different cities of Pakistan to understand the ratio of MSDs prevailing in the country among nurses. The result showed that the 78.5% of nurses are having disorders and are suffering from pain of some kind.[16]

There are number of studies which reviewed from 1990, investigating the prevalence of musculoskeletal disorders in nurses and reported that foot/ankle problem ranged from 3.7 to 40%[11, 12]. A small number of studies since then reported the prevalence of foot/ankle musculoskeletal problems were ranging from 1.8 [2, 5] to 74%[1, 11].

The rational of this study is to find out the prevalence of foot and ankle musculoskeletal disorders in nurses. This type of study has not been studied previously in Pakistan. Most reports on musculoskeletal disorders are from other countries. That's why this study was conducted in Lahore.

II. Methodology

It was a cross-sectional survey study. Sample size 369 was calculated using the online epi-tools

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software for sample size calculation formula $n = \frac{z^2 \times p(1-p)}{d^2}$[17]. Nordic Musculoskeletal Questionnaire (NMQ)[18] was used to collect the data from five Government hospitals Carian hospital, Jinnah hospital, Service hospital, Children hospital and Ganga ram hospitals of Lahore Pakistan. Data analysis was done by statistical package for social science (Spss) 21. Qualitative variables were displayed through, bar charts, tables. The duration of the study took six months to complete. In inclusion criteria only female nurses were involved and their age in between 20 to 60 years, Nurses who are in practice. Who work minimum 5 hours a day and 4 days a week. And work experience of at least 3 months. Exclusion criteria was nurses with any systemic disease like Diabetes Mellitus, Hypertension, Chronic renal failure, Cardio vascular disorders, Malignancy, Rheumatoid Arthritis, nurses who were not willing to fill the Questionnaire, Recent trauma, fracture or Surgery and any previous history of surgery for cervical region.

III. Results

In table no 1 study results showed total patients were 369 out of these 174(47.2%) complain about pain or discomfort and 195(52.8%) respondents not complained about any pain or discomfort. In table no 2study results showed that from the total sample space 238 (64.5%) women have no pain, 37(10.0%) women have pain in the right foot/ankle, 72(19.5%) women have pain in left foot/ankle and 72 (19.5%) women have pain in both foot/ankle in last 12 months.

Table 1: Frequency distribution of foot/ankle trouble (ache, pain, discomfort)

Pain	Frequency	Percent
No	195	52.8
Yes	174	47.2
Total	369	100.0

Fig. 1: Have you ever had foot/ankle trouble (ache, pain, discomfort)

Table 2: Frequency distribution of pain from last 12 months

Valid	Frequency	Percent
No	238	64.5
Yes, in my right foot/ankle	37	10.0
Yes, in my left foot/ankle	22	6.0
Yes, in both foot/ankle	72	19.5
Total	369	100.0

Have you had foot/ankle trouble during the last 12 months?

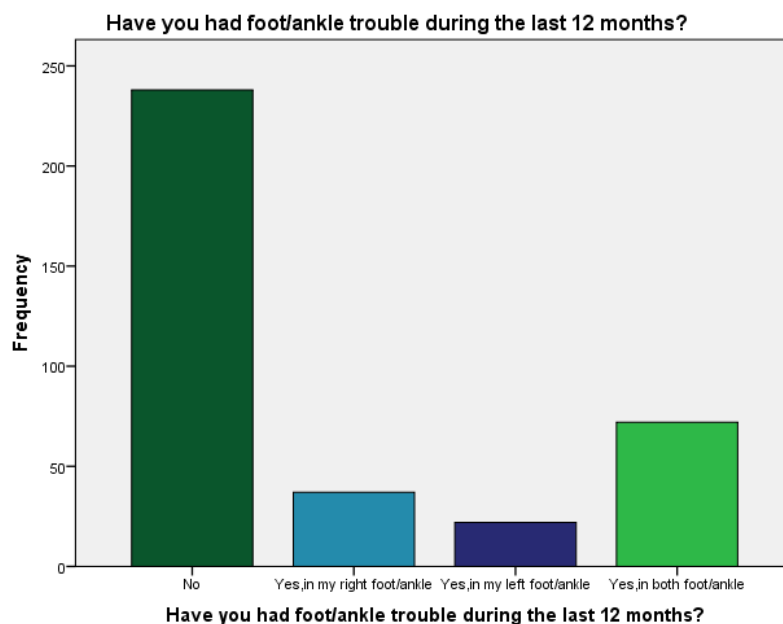**Have you had foot/ankle trouble during the last 12 months?**

Fig. 2: Have you had foot/ankle trouble during last 12 months?

IV. Discussion

The current study has been concluded to determine the prevalence of foot and ankle musculoskeletal disorders in nurses. Total 369 nurses were selected from sampling process. Nordic Musculoskeletal questionnaire was used to determine the discomfort and pain in foot and ankle. This study of 369 nurses showed that nearly 35.5% nurses reported some form of musculoskeletal discomfort, trouble, pain during the last 12 months and more than 78% during last 7 days in survey which is conducted in hospitals of Lahore, Pakistan.

Foot and ankle musculoskeletal disorders in this type of study have not been studied previously in Pakistan. Most reports on musculoskeletal disorders are from other countries. chosen different hospitals that are not different from other hospitals in Pakistan, carrying out the same type of work. This study results should therefore be representative of this type of work in hospitals of Lahore. All nurses are chosen for the research consented to take an interest therefore we have no selection bias.

A study was conducted in the tertiary care clinic which was located in the city of Peshawar, Pakistan. The questionnaire was distributed to among 300 survey population, out of which 100 were dentists, 100 were surgeons and 100 were physicians. After the evaluation the results were surprising, as the dentists have the highest percentage of WMSDs, following them were surgeons and then physicians. The percentage was 89, 87 and 84 respectively[19]. A research was conducted in pediatric hospital in Brisbane, Australia. 416 nurses were eligible to participate in study. Nordic musculoskeletal questionnaire was distributed among nurses population.

After the result 73% response rate was achieved[12]. Daraiseh *et al.*, have reviewed various studies and they pointed out that the studies conducted from 1990s, have resulted that the nurses who were facing the problems related to foot and ankle their percentage was almost 40%[20].A cross-sectional survey was conducted in USA, on 274 survey population, out of which 74 percent have responded. The result showed that the 78.5% of nurses are having disorders and are suffering from pain[15].

This result contradicts with this study in which 369 Nordic musculoskeletal questionnaires were distributed in nurses' population and result percentage was 47.2% respectively.

In previous study, 50% nurses have pain in the last 12 months and 40% nurses have pain in last 7 days[12]. While in this study 35.5% nurses have pain in last 12 months and 78% have pain in last 7 days.

The objective of my study was to determine the prevalence of foot and ankle pain and discomfort in nurses of Lahore, Pakistan. A cross-sectional investigation was started to find out the prevalence and in nurses in which study participants are 369 from Lahore hospitals and only females 369(100%) were included. 174 (47.2%) nurses experienced Foot/ankle discomfort while 195(52.8%) nurses were free of foot and ankle discomfort and pain. This study showed that foot and ankle pain are affected by prolonged standing and weekly hours of time work which is spent in hospital.

V. Conclusion

Foot and ankle musculoskeletal disorders were common problem among nurses. It would be recommended that nurses be provided with important

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education regarding self-care strategies and treatment plan and need to some break during working time.

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