Frequency of Musculoskeletal Pain Among Hospital Cleaning Workers in Tertiary Care Hospitals in Lahore.

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ABSTRACT

Objective: To determine the frequency of musculoskeletal pain among hospital cleaning workers in tertiary care hospitals of Lahore.

Methods: This cross-sectional study was conducted in University of Lahore Teaching Hospital and Services Hospital Lahore from 3rd Septemberer 2019 to 22nd February 2020. Hospital cleaning workers of either gender and all ages fulfilling the inclusion criteria were interviewed face to fac for musculoskeletal pain complaints.The data were collected using Nordic Questionnaire and analyzed through descriptive and analytical statistics.Frequency of musculoskeletal pain in workers with normal body mass index(BMI) and those with increased BMI was compared and *P* value was calculated with Chi-square test(*P* value <0.05 was considered significant).

Results: We interviewed 130 hospital cleaning workers. There were 73 (56.2%) females and 57 (43.8%) males. The mean age was 38±11.7 years.Majority(80.8%,n=105) of the hospital cleaning workers had musculoskeletal pain while only 25(19.2%) had no pain. The pain was moderate in intensity 59 (45.3%) and sever in 46 (35.4%) workers. Low backach was reported in 31 (23.8%) workers,knee pain in 15(11.5%) and neck and shoulder pain in 14(10.7%) workers. Majority(53.8%,n=70) of cleaning workers did not missed their duty during the previous week inspite of musculoskeletal pain.The frequency of musculoskeletal pain was more in overweight and obese workers than normal weight workers.(*P* value 0.001)

Conclusion:The frequency of musculoskeletal pain among hospital cleaning workers was very high.Overweight and obese workers were more prone to had musculoskeletal pain.

Keywords: Backach,Body mass index, Hospital Cleaning worker, Musculoskeletal, Pain.

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INTRODUCTION

Work-related musculoskeletal pain is the most common and crucial occupational wellbeing issue within the working population.[1] The workers from the hospital cleaning service used to be confined to operational variables.[2] and Musculoskeletal complaints show up to be expanding quicker than any other work-related sickness category.[3] Cleaners are the workers who work in different hospitals and maintaining cleanliness.[4] They are involved in activities that require physical exertion and biological and ergonomic risks.[5] Musculoskeletal pain refers to the presence of pain, distress or ache in the upper appendages, neck, shoulder, spine and lower limbs.6 Inconvenience and pain in the neck, shoulder, and upper limbs recurr in repetitive exertional work.[7] Other risk situations for musculoskeletal pain include excessive burden on body segments in different movements, excessive force to complete some tasks, unbalanced body posture during work, and improper ergonomics conditions within the organization of work.[8] It has been reported that elderly workers,overweight and obese,smokers,lower educational level and female gender were more

prone to develop musculoskeletal pain than others.[9-11]

The hospital cleaning workers although not in direct or prolonged contact with the patients but have been included as a third category of Health care Worker by The Association of National Health Occupational Physicians(ANHOPS) and thus exposed to occupational hazards and ill health.[12] Various studies have reported a higher frequency of musculoskeletal pain in hospital cleaning staff than cleaning laborer working in other deapartments.[13,14] It has been reported that 60% of hospital cleaning staff in some European hospitals were suffering from musculoskeletal pain.[15] The consequences of musculkeltal pain aming hospital cleaning staff adversely affect their quality of life thus demanding medical treatment and economic loss due to absenteesim, early retirement and compensation costs.[16,17]

The objective of our study was to determine the frequency of musculoskeletal pain among hospital cleaning workers in tertiary care hospitals in Lahore.Lack of any local study in the literature motivated us to conduct study on this important topic and we hope that our results will be utilized in formulation of an efficient preventive strategy for musculoskeletal pain in hospital cleaning workers in our country.

METHODS

This cross-sectional study was conducted using a non-probability convenient sampling technique at the University of Lahore Teaching hospital and Services Hospital Lahore from 3rd September 2019 to 22nd February 2020.The study was approved by the Institutional Review Boards of our hospital.Consent was obtained from all study participants.Workers of the hospital cleaning services in the morning and evening shifts belonging to either gender and age who had experienced an episode of pain and discomfort in neck,back ,upper limb or lower limb in the last one month were interviewed face to face for symptoms of musculoskeletal pain.All workers who had a history of recent trauma, surgery, neuromuscular dystrophy, musculoskeletal disorder or disability and metabolic or neoplastic diseases were excluded.In the included subjects socio demographic data was recorded and musculoskeletal pain assessment was documented using Nordic Questionnaire(Modified Version).[18,19] Results of the questionnaire were represented as parts of the body involved while pain intensity was noted on Visual Analgue Scale(VAS) as mild(1-3),moderate(4-7) and sever(8-10). Body mass Index(BMI) was calculated with formula weight/height^2 and interpreted as underweight (< 18.5 kg/m^2), normal weight (1≥8.5 to 24.9), overweight(≥25 to 29) and obese (> 30 kg/m^2). [20]

All data were analyzed by statistical program SPSS (version 21). Descriptive statistics were applied. Quantitative variables like age were presented as mean±standard deviation. All qualitative variables like gender, musculoskeletal pain and anatomical region of the pain were expressed as frequencies and percentages. Testing the association between Body mass index and musculoskeletal pain chi-squared test was applied and *P* value <0.05 was considered significant.Data was presented in tables where necessary.

RESULTS

The total number of hospital cleaning workers were 130.Majority(56.2%,n=73) of our study participants were females while males were 57 (43.8%). The mean age was 38±11.7 years.Most(63.8%,n=83) of the cleaning workers served in the morning shift while 47 (36.2%) workers served in the evening shift.The duration of duty of the workers were 8 hours per day. Mosy(75.4%,n=98)of the hospital cleaning workers confirmed that they got time for leisure while 32 (24.6%) participants denied time for leisure. Majority(80.8%,n=105) of the hospital cleaning workers had musculoskeletal pain while only 25(19.2%) had no pain. Musculoskeletal pain among the morning shift workers were noted in 83 (62.8%) workers and 47 (36.2%) workers in the evening shift.The pain was moderate in intensity 59 (45.3%) and sever in 46 (35.4%) workers. Low backach was reported in 31 (23.8%) workers,knee pain in 15(11.5%) and neck and shoulder pain in 14(10.7%), legs pain in 09 (6.92%) and heels pain in 04 (3.08%). workers. Although majority(53.8%,n=70) of the workers had not missed their duty in last 30 days due to muscukoskeletal pain but 56 (43.1%) workers missed their work 1 or 2 days and 04(3.1%) workers were absent 3 to 7 days due to musculoskeletal pain. Assessment of the nature of the cleaning work indicated that most cleaning workers(70.8%,n=92) had moderately heavy work, 08 (6.2%) workers had heavy work and 30 (23.1%) had light work.All hospital cleaning workers with increased BMI(overweight and obese) had musculoskeletal pain as shown in table I.

Table I: Cross-tabulation between Body Mass Index(BMI) and musculoskeletal pain.

Body Mass Index(BMI)	Musculoskeletal pain		Total (n=130)	*P* value
	Yes (n=105)	No (n=25)		
Low weight	8	3	11	0.001
Normal weight	37	22	59	
Overweight	48	0	48	
Obesity	12	0	12	

DISCUSSION

In our study majority(80.8%,n=105) of the hospital cleaning workers had musculoskeletal pain. Similar to our study Joseph and Naveen[12] collected data of 83 hospital cleaning staff through Nordic Questionnaire and reported that 68.3% of the workers had musculoskeletal symptoms.

Luz and colleagues[6] reported musculoskeletal pain in 70.1% of hospital cleaning workers of University Hospital Rio Grande do Soul Brazil.These authors however collected their data through semi-constructed interview of the workers rather than a validated tool while we used Nordic Questionnaire(Modified Version)[18,19] for collection of our data.Chang and colleagues[21] used Chinese version of Standarized Nordic Questionnaire for face to face interview of 180 cleaning workers and noted that 90% had musculoskeletal symptoms. Lasrado[22] compared the frequency of musculoskeletal symptoms in 125 hospital cleaning workers and 130 office workers in a Norwegian hospital.Both the groups had no statistically significant differences in terms of age and BMI except education was lower in hospital cleaning workers than office workers.The cleaners had a significantly higher rate(56%) of musculoskeletal pain than office workers(12.3%). Salwe[23] reported 42% prevalence of musculoskeletal symptoms in his study. He also noted that frequency of musculoskeletal pain was 64% in workers who cleaned bathrooms and 63% in workers mopping floors and carrying or emptoying garbage boxes.Lack of preventive measures at work place,predominantly manual working rather than machines and no proper work training can be attributed to higher frequency of musculoskeletal symptoms among hospital cleaning workers in our study than other studies.

In our study most(62.8%) of the cleaning workers in the morning shift had musculoskeletal symptoms than workers in other shifts.This has been reported by other studies [12,23] as well.The possible explaination could be the increased patients influx and admissions leading to increased workload on cleanining staff in the morning shift than in the other shifts.

We had noted that 31 (23.8%) workers had low backach, 15(11.5%) had knee pains and 14(10.7%) had neck and shoulder pain. Larsado[22] noted shoulder symptoms in 33%,backache in 26% and wrist and hands in 22% of his workers.Joseph[12] documented lowbackach in 52.9%,shoulders 49.9% and neck 48.8%. Salwe[23] reported low backache in 52.9%,wrist pain in 39% and ankle pain in 6%. These possible reason for this variation of pain in different body parts in different countries are because of use of machines or manual methods for cleaning purposes and subjecting different body parts to repetitive stress or trauma.Improvement in technology and implementation of preventaive measures at workplace in some countries can be the other reason for vriable presentation.

Chang[21] conducted an interested study of 56 hospital cleaning workers and reported that 41.7% of his study participants had hand and wrist pain followed by shoulder(41.1%) and low backache(37.8%).Chang performed electrogoniometeric measurements of the hospital cleaning workers and reveled that extreme ulnar and radial deviations during cleaning works were the cause of wrist symptoms and carpal tunnel syndrome in their patients.Chang noticed that hospital cleaning workers performing mannual sweeping,wet mopping and dry mopping had more prevalence of upper limb musculoskeletal symptoms than other cleaners. We suggest integration of ergonomic principles into working environment and working equipment of hospital cleaning workers.National and local surveillance system should be developed to monitor and ensure the safety and well being of hospital cleaning workers across the country.

In our study we found that all hospital cleaning staff who were overweight or obese had musculoskeletal sypmptoms.Luz[6] reported that 35(60.3%) overweight workers had pain while 23(39.7%) had no pain(*P* value >0.05).Among 53 obese workers 40(75.4%) had symptoms while 13(24.5%) had no musculoskeletal symptoms(*P* value <0.05).Salwe[23] documented musculoskeltal

symptoms in 19(63.3%) overweight workers and 28(66.6%) obese workers.

Our study had few limitations.The design of our study was cross sectional.Recal bis while filling the questionnaire could not be eliminated entirely.Besides obesity other confounders or risk factors like age,gender, and smoking could not be analysed.The working equipments,exact working environment and nature of the work was not assessed or physically examined.We recommend further well designed studies with a larger and representative sample size from other hospitals across the countries addressing the above limitations to verify our results.

CONCLUSION

The frequency of musculoskeletal pain among hospital cleaning workers was very high.Overweight and obese workers were more prone to had musculoskeletal pain.

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