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RESEARCH ARTICLE

PREVALENCE OF OCCUPATIONAL MUSCULOSKELETAL DISORDERS IN HAIR SALON WORKERS IN A CITY OF CENTRAL INDIA

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ABSTRACT

Background: Hairdressing is a profession which is blooming in modern time not only in money making but also as a desired line of work for the youth. The mechanical load on the joints, prolonged standing, longer working hours, missed meals, not taking breaks during work, and attending to a large number of customers in a single day significantly add as important occupational health risks for these professionals. As a result, several researchers found that occupational-related MSD is widespread among hairdressers resulting in altering their work productivity and also increasing their financial burden. Therefore, this study aims to find out the health problems of urban hairdressers with special focus on musculoskeletal complaints related to physical aspects of the work (muscular pain due to bad postures, repetitive movements, prolonged stretching of muscles, exertion, etc leading to painful discomfort in caring out regular work) based on their self-reported outcomes. **Objectives:** To find out the prevalence of musculoskeletal disorder in hairdressers by using Nordic questionnaire and VAS scale. **Materials and Methods:** Based on the inclusion criteria, the study was carried out among 30 salon workers of different salons in Maharashtra. Standard Nordic questionnaire and visual analog scale was used to check the prevalence of musculoskeletal disorders for the past 12 months and past 7 days. **Statistical Analysis Used:** A frequency and percentage table was used to analyze prevalence, and Chi-square test was used to check its association with age, hours of working and work experience among hair dressers. **RESULTS:** The study shows 30 beauty salon workers were participated in the study which was 100% of response rate. Nordic questionnaire was used to assess the musculoskeletal pain among hairdressers. Pain on visual analog scale (VAS) was also taken to check the severity of pain. **Conclusions:** The study concluded that the prevalence of work-related musculoskeletal disorder was majorly seen at neck (70%) followed by lower back (53.33%), shoulder (23.33%) and lastly the knees (43.33%) where the severity of pain was mild and its interference was highly noted in general activities by the hairdressers.

INTRODUCTION

Hairdressers represent a fast growing group of professionals especially in urban India.³ Hairdressing is a profession which is blooming in modern time not only in money making but also as a desired line of work for the youth.⁴ Moreover, the mechanical load on the joints, prolonged standing, longer working hours, missed meals, not taking breaks during work, and attending to a large number of customers in a single day significantly add as important occupational health risks for these professionals.^{2,1} They often stand long more than eight hours and bend or twist their backs onward or sideways during their working activities that could be enhance back and lower limb disorders of the beauty salon workers.^{5,6} Due to unorganized nature of employment, the challenges stand as poor awareness of workplace hazards among workers,

unprotected labour legislations, and economic and sexual exploitation; consequently, all these add to neglected occupational health of workers along with no formal provision of paid leaves and medical insurance.³ Work-related musculoskeletal disorders (WMSDs) also pose as hazard that affect working requirements of hairdressers, and cause the problems due to twisting and repetitive movements or spend long periods of time carrying out work activities in awkward postures.³ Musculoskeletal Disorders (MSDs) is a term given to a group of conditions representing a wide range of illnesses that involve the nerves, tendons, muscles and supporting structures such as intervertebral discs.⁴ Most of the few studies conducted on the WMSDs among hairdressers have majorly focused on the shoulder, neck, back, elbow/forearm, hand/wrist and fingers, such as the hip/thigh, knee, ankle and feet, without any due considerations to other parts of the body that may suffer musculoskeletal disorders.¹ Professionals who are exposed to manual labour, work in unusual and constrained

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postures, repetitive and static work, vibrations, and poor psychological and social situations have a high prevalence of job-related musculoskeletal disorders.⁶ As a result, several researchers found that occupational-related MSD is widespread among hairdressers resulting in altering their work productivity and also increasing their financial burden.⁶ Therefore, this study aims to find out the health problems of urban hairdressers with special focus on musculoskeletal complaints related to physical aspects of the work (muscular pain due to bad postures, repetitive movements, prolonged stretching of muscles, exertion, etc leading to painful discomfort in caring out regular work) based on their self-reported outcomes.³

MATERIALS AND METHODS

The study was carried out among hairdressers of different hair salons of Maharashtra after getting ethical approval from institutional review board. Permission for taking hairdressers as subjects of the study was obtained from the head of the department (HOD). Using a convenient sampling method of 30 hairdressers, having more than 2 years of experience, and full-time workers were selected. Individuals having a history of any preexisting musculoskeletal conditions (i.e., rheumatoid arthritis, ankylosing spondylosis, and history of trauma), which are not related to WMSDs and neurological deficits, were not included in the study. Detailed subjective assessment was taken including demographic data (name, age, gender, address, and working place), BMI, work experience, working hours, etc. The standard Nordic questionnaire (SNQ) was evaluated by the interview method to check the prevalence of MSDs during the past 12 months and past 7 days. Visual analog scale (VAS) was also used to analyze the severity of pain while working. The SNQ can be utilized for determining the incidence, prevalence or occurrence rates, and epidemiology of MSDs of various body regions resulted from work circumstances, conditions, and awkward postures. SNQ contains various questions about pains in the entire body and body region- specific questions (neck, shoulder, elbow, wrist, upper back, lower back, hips/thighs, knees, and ankle). Answers to these questions are recorded either in the form of yes or no. A body “map” was also utilized to simplify it for hairdressers to pinpoint their pain area.

RESULTS

The study which was undertaken for the prevalence of musculoskeletal disorder in hairdressers by using Nordic questionnaire and VAS scale has yielded the following results. The study shows 30 beauty salon workers were participated in the study which was 100% of response rate. Most of the participants were males (53.33%; N=16) and females (46.67%; N = 14). Mean age of participants was 34.27 ± 1.456 (25 – 45) years (Table no.1). The working duration of 11.25% hairdressers who work for about 10-12 hours a day whereas 9% worked for 7-8 hours a day (Table no.2). The work experience in the profession was found to be more than 4-5 years for 20% for hairdressers whereas 5.750% have been working for 1-3 years (Table no.2). Nordic questionnaire was used to assess the musculoskeletal pain among hairdressers. Data was interpreted as neck pain was present in 21 (0.70%), shoulder pain was present in 7 (0.23%), elbow pain was not present at all, wrist and hand pain was present in 11 (0.3667%), upper back pain was present in 14 (0.4667%), lower back pain was present in 16 (0.5333%), hips pain was

present in 1 (0.033%), knees pain was present in 13 (0.4333%), ankle pain was present in 12 (0.4000%).

Pain on visual analog scale (VAS) was also taken to check the severity of pain. Pain on rest was 51 (1.7%) and pain on activity was 174 (5.8%).

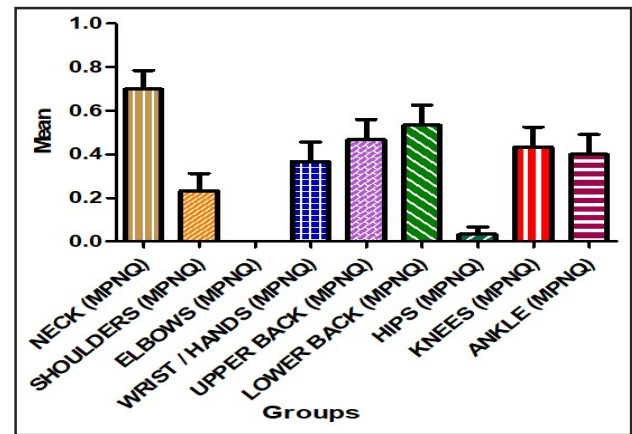


Figure 1. Overall statistics of complete data

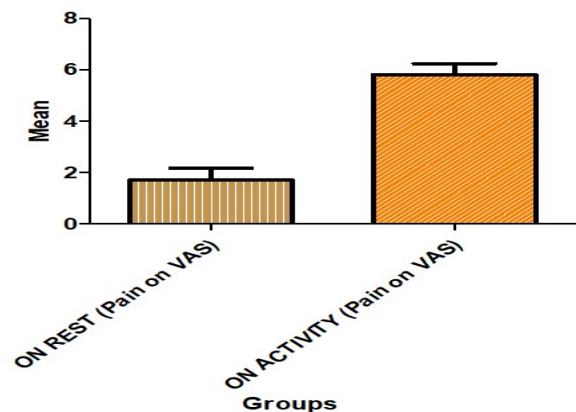


Figure 3. Pain on VAS

DISCUSSION

In the present study, 30 subjects were taken in which 16 are males and 14 are females. The age of subjects varies from 25 to 45 years. This study examined the occupational health risks of individuals working in barbers' and hairdressers' salons in a city of central India. Work-related musculoskeletal disorders (WMSD) associated with repetitive and demanding working conditions remain one of the most significant challenges that hairdressers face in their careers. The purpose of this study is to determine the prevalence of musculoskeletal disorders among hairdressers working in an urban setup. Our result indicates majority of the hairdressers experienced mild pain where the most prevalent source of discomfort has been noted at the neck region due to stress imposed on the cervical structure due to prolonged standing in neck flexion position and in the lower back region due to prolonged standing posture. We found in earlier study in the article “Prevalence of cervical pain in make-up artist and hair dressers of Lahore” have also reported the mild cervical pain.¹¹ Working with arms above shoulder level, repetitive activities, intense exertion of the upper extremities, awkward postures and movements of the back, a high mechanical stress, and standing for extended periods of time are all substantial physical exertions for hairdressers.

Table 1. Overall statistics of complete data

Overall statistics of Complete data for mean Median ,standard deviation and Standard error									
	NECK (MPNQ)	SHOULDERS (MPNQ)	ELBOWS (MPNQ)	WRIST / HANDS (MPNQ)	UPPER BACK (MPNQ)	LOWER BACK (MPNQ)	HIPS (MPNQ)	KNEES (MPNQ)	ANKLE (MPNQ)
Number of values	30	30	30	30	30	30	30	30	30
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25% Percentile	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Median	1.000	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
75% Percentile	1.000	0.2500	0.0	1.000	1.000	1.000	0.0	1.000	1.000
Maximum	1.000	1.000	0.0	1.000	1.000	1.000	1.000	1.000	1.000
Mean	0.7000	0.2333	0.0	0.3667	0.4667	0.5333	0.03333	0.4333	0.4000
Std. Deviation	0.4661	0.4302	0.0	0.4901	0.5074	0.5074	0.1826	0.5040	0.4983
Std. Error	0.08510	0.07854	0.0	0.08949	0.09264	0.09264	0.03333	0.09202	0.09097
Lower 95% CI of mean	0.5260	0.07270	0.0000e+000	0.1836	0.2772	0.3439	-0.03484	0.2451	0.2139
Upper 95% CI of mean	0.8740	0.3940	0.0000e+000	0.5497	0.6561	0.7228	0.1015	0.6215	0.5861
Sum	21.00	7.000	0.0	11.00	14.00	16.00	1.000	13.00	12.00

Hairdressers put in extra effort and, most of the time, adopt awkward postures to fulfil clients desired hairstyles. We found in earlier study in the article “Self-reported work-related symptoms in Hairdressers” have also reported shoulder pain and upper and lower back pain.¹² The prevalence of the WMSDs among the hairdressers that has been observed in neck is 70%, in shoulders is 23.33%, in elbows there is no pain, in wrist and hand is 36.66%, in upper back is 46.66%, in lower back is 53.33%, in hips there is only 3.33%, in knees is 43.33%, in ankles is 40%.

CONCLUSION

The study concluded that the prevalence of work-related musculoskeletal disorder was majorly seen at neck (70%) followed by lower back (53.33%), shoulder (23.33%) and lastly the knees (43.33%) where the severity of pain was mild and its interference was highly noted in general activities by the hairdressers.

Ethical Policy and institutional review board statement: The study was approved by Institutional Review Board.

Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Data availability statement: Data are available based upon request from Dr. More Sir.

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Conflict of Interest: There are no conflict of interest.

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