



Original Article

Frequency of Musculoskeletal Disorders among Hairdressers; A Cross-Sectional Study

Fasiha Kamal¹, Mehak Hamna Zahra Gillani², Arzoo Nawaz³, Zahra Aman⁴, Asna Waseem^{4*}, Anna Anwar³

¹University Institute of Physical Therapy, The University of Lahore, Lahore, Pakistan

²The University of Faisalabad, Faisalabad, Pakistan

³Riphah International University, Lahore, Pakistan

^{4*}Central Park Medical College, Lahore, Pakistan

ABSTRACT

Background: Musculoskeletal disorders signify health problems involving locomotor apparatus such as muscles, joints, bones, tendons, nerves, cartilage, spinal discs and related tissues. Physical demands of the job like force, frequency of the task, weight handling, certain improper postures and standing for prolonged hours may increase the risk of musculoskeletal disorders which represent the main cause of absence from occupational work. **Objective:** To find out the frequency of musculoskeletal disorders among hairdressers. **Methods:** This is a cross-sectional study that included 49 hairdressers who were recruited in this study using a non-probability sampling technique. Data was collected from various hair salons in Lahore. Both male and female hairdressers of age above 15 years were recruited in this study. Printed consent forms in English and Urdu were signed by the participants. The questionnaire was directed toward collecting the hairdressers' demographic data like age, gender, duration of the job, the presence of any discomfort during working hours, affected area or body part and discomfort affecting activities of daily living and job efficiency. Mean and standard deviation was calculated for quantitative variables while frequency and percentage were calculated for qualitative variables. **Results:** The mean age of hairdressers who were included in this study was 24.97 ± 4.84 years. Almost 38 female and 11 male hairdressers were recruited in this study. Out of 49 hairdressers, 38 (77.6%) hairdressers reported musculoskeletal pain during their working hours. About 19 (38.8%) hairdressers reported the hand and wrist to be the region most affected by the discomfort, 12 (24.5%) reported it to be the thumb, 4 (8.2%) reported it to be the shoulders and 3 (6.1%) reported it to be lower back. **Conclusion:** This study concludes that the frequency of musculoskeletal disorders is high among hairdressers and the musculoskeletal pain at work affects the job efficiency of hairdressers and their activities of daily living. Taking short periods of breaks from work was used as a coping strategy by hairdressers to avoid discomfort.

Access the
article
online



SCAN ME

***Corresponding Author:** Asna Waseem, Central Park Medical College, Lahore.

Email: asna_waseem@yahoo.com

Keywords: frequency; hairdressers; musculoskeletal discomforts.

Citations: Kamal F, Gillani MHZ, Nawaz A, Aman Z, Waseem A, Anwar A. Frequency of musculoskeletal disorders among hairdressers; A cross-sectional study. The Healer Journal of Physiotherapy and Rehabilitation Sciences. 2023;3(5):540-548.

INTRODUCTION

The term musculoskeletal disorder represents health issues of the locomotor apparatus which includes, bones, joints, muscles, tendons, cartilage, ligaments and nerves. This term includes all the forms of ill-ranging from light, temporary disorders to irreversible and disabling injuries to the musculoskeletal system.¹ Musculoskeletal disorders signify the most commonly occurring occupational issues worldwide.² Pain in the lower back is probably the most common work-related musculoskeletal discomfort within the nursing profession.³

Some of the known risk factors might include personal features such as fitness levels and age, workplace factors might also be an important predictor such as handling of various work-related tools, posture adapted while working and the nature of the job.⁴ Lack of communal support from colleagues might also contribute. Developing and using appropriate and sound ergonomic practices is a very important step leading to reducing musculoskeletal discomforts and disorders among various professionals whose work involves a lot of physical activities.^{3,5,6}

There are many occupational hazards and risks inherent to the activities and tasks performed by professional hairdressers which are not recurrently studied, and thus they are not carefully considered while formulating the health policies for this group of professional workers.⁷ The physical activities and various tasks performed by professionals who work in a beauty salon are one of the least studied topics in occupational health. The hairdressers are exposed to several dangers and hazards in their workplace. These include working with chemical agents, hair products, various physical agents such as noise and high temperatures and most importantly ergonomic

hazards as well such as awkward and inappropriate postures while working, physical demands for service quality and prolonged working hours without taking breaks.⁷⁻¹⁰ Ergonomic threats, risk factors and hazards account for the major portion of work-related musculoskeletal disorders, discomforts and injuries among hairdressers. Inappropriate and awkward posture while working, continuous repetitive movements, standing for prolonged hours and long working periods to carry out tasks at beauty salons creates mechanical loads on the joints.^{11,8}

A study was conducted that emphasizes how the hairdressers manage to complete numerous tasks every day in their hair salons in prolonged awkward and standing positions. The hairdresser usually spends his or her day performing extended work and has long functioning periods such as curling hair, haircuts, blow drying and washing hair. That study also inquired which part of the body was most affected by the nature of work. But the number of surveys and investigations conducted to find out the difficulties, musculoskeletal discomforts and disorders among hairdressers was particularly low.⁵

The main aim of this current study was to find out the frequency of musculoskeletal disorders such as pain in hairdressers. Musculoskeletal disorders such as pain are very common nowadays in almost every occupation, especially the ones which require a constant demand for physical activity. Musculoskeletal disorders are one of the leading health issues in many occupations and industries and one of the main causes of getting absent from work. Cutting hair and doing hair styling for prolonged hours, performing and achieving many other tasks in beauty parlors without sufficient resting periods, standing for

prolonged hours and accomplishing challenging tasks that involve both upper and lower extremities.¹¹ This creates a heavy workload on hairdressers and makes them more susceptible to acquiring work-related musculoskeletal discomfort which might lead to chronic musculoskeletal disorder. Thus, this occupation needs to be evaluated for a better understanding of health disorders the hairdressers face due to their occupation so that more work could be done on finding new precautionary and interventional measures to help them survive in their occupation with good health.

If the hairdressers are appropriately guided and educated about the precautionary measures regarding protecting themselves from bad postures that they might adopt at their work then these work-related musculoskeletal disorders among hairdressers might be reduced to a good extent. Thus, the current study was to determine the frequency of musculoskeletal discomforts among hairdressers.

METHODS

This is an observational cross-sectional study in which 49 hairdressers were recruited and the formula used to calculate the sample size was

$$n = \frac{z^2 \cdot 1-\alpha \cdot P \cdot (1-P)}{d^2}$$

In this formula, confidence level (%) $1-\alpha=0.95 \times 100=95\%$, Anticipated population proportion = 0.479, absolute precision $d=0.05$. The data was collected from hairdressers working at various hair salons in Lahore, Pakistan. Non-probability convenient sampling was used to recruit hairdressers in this study. Ethical approval was obtained before the conduction of this study from the Research and Ethics Committee of the University of Lahore, Lahore Campus.

Consent was obtained from all the hairdressers recruited in this study in English and Urdu language which were duly signed by them. Both male and female hairdressers aged between 15 to 50 years were included in this current study and those who had a recent history of fractures or surgery were excluded from the study.

Each participant was given a questionnaire that was directed toward collecting the hairdressers' demographic data like age, gender, duration of the job, the presence of any discomfort during working hours, affected area or body part and discomfort affecting activities of daily living and job efficiency. For analyzing the musculoskeletal symptoms, the standardized Nordic questionnaire was used for analyzing musculoskeletal symptoms in occupational and ergonomic health.¹² The data were analyzed using a software statistical package for social sciences version 23. Mean and standard deviation was calculated for quantitative variables while frequency and percentage were calculated for qualitative variables.

RESULTS

The mean age of hairdressers who were recruited in this study was 24.97 ± 4.836 years while the minimum age of the hairdresser who was included in this study was 16 years and the maximum age of the hairdresser was 38 years (Figure I). Among 49 hairdressers, 38 (77.6%) reported pain during their working hours (Table I). About 19 (38.8%) participants reported the hand and wrist to be the region most affected by the discomfort, 12 (24.5%) reported it to be the thumb, 4 (8.2%) reported it to be shoulders and 3 (6.1%) reported it to be lower back. (Table II). Almost 24 (48.97%) hairdressers reported yes that this discomfort has forced them to take a break from their careers. Table (III). When inquired about

Figure I: Age Distribution

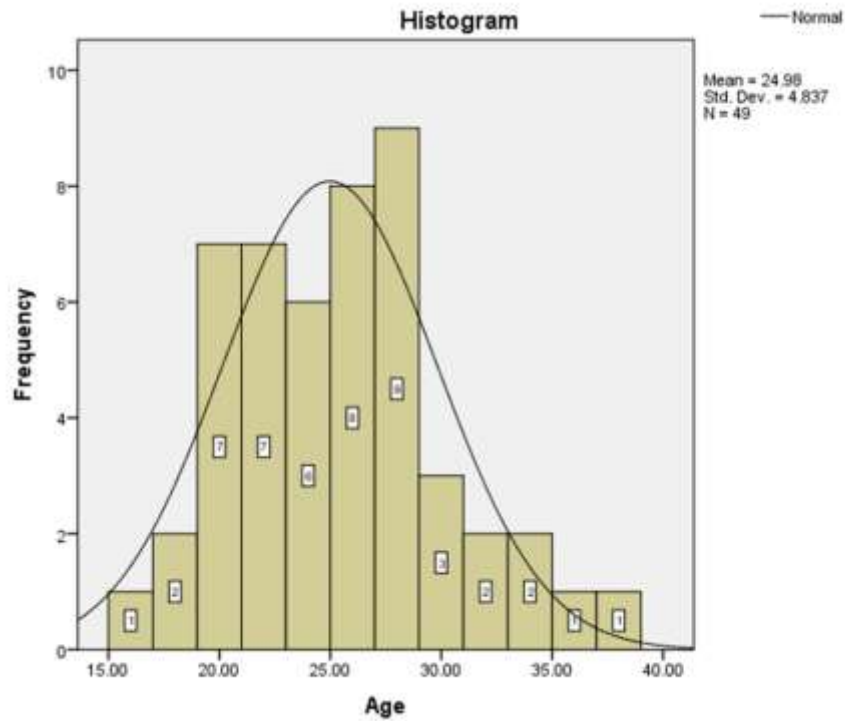


Table I: Descriptive Statistics

| | | Frequency | Percentage |
|--|------------|-----------|------------|
| Pain during working hours | Yes | 38 | 77.6% |
| | No | 11 | 22.4% |
| Area affected | Wrist/hand | 19 | 38.8% |
| | Thumb | 12 | 24.5% |
| | Shoulder | 4 | 8.2% |
| | Low back | 3 | 6.1% |
| | None | 11 | 22.4% |
| Break from work | Yes | 24 | 48.97% |
| | No | 25 | 51.05% |
| Activities of daily living affected | Yes | 38 | 77.6% |
| | No | 11 | 22.4% |

Figure II: Musculoskeletal Pain Affecting Job Efficiency

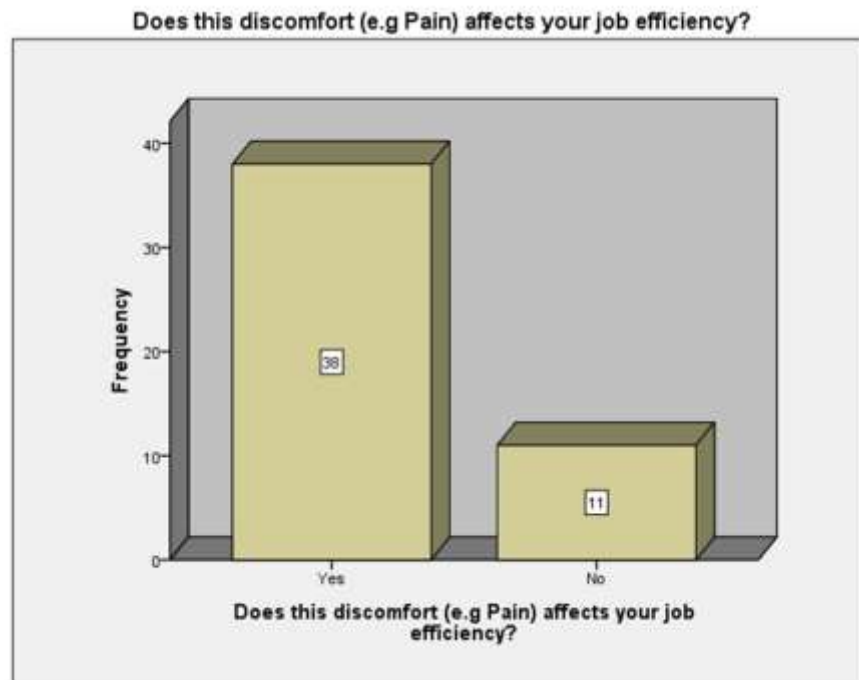
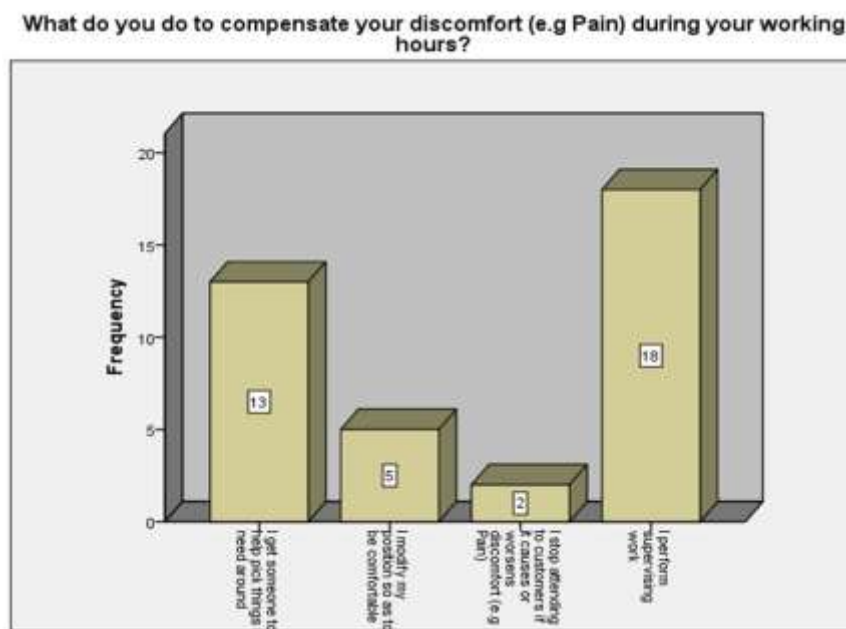


Figure III: Compensating and Coping Strategies Adopted by Hairdressers at Work



whether this discomfort has affected their activities of daily living 38 (77.6%) hairdressers reported that their activities of daily living have been affected by this discomfort (Table IV). Out of 49, 38 (77.6%) reported that the discomforts have affected their job efficiency (Figure II). It showed the compensating and coping strategies adopted by hairdressers at work to compensate for the discomfort at work and to release their pain (Figure III).

DISCUSSION

This current study was designed and conducted to find out the frequency of musculoskeletal disorders among hairdressers. Hairdressers who were included in this study reported pain in various regions of the body while they working. Out of 49 hairdressers, 38 (77.6%) reported pain during their working hours. When hairdressers were inquired about that which region of their body is most commonly affected by pain during their working hours, 19 (38.8%) hand and wrist, 12 (24.5%) thumb, 4 (8.2%) shoulders and 3 (6.1%) lower back (Table I).

A study was conducted by Gisele Mussi to find out the prevalence of work-related musculoskeletal disorders among Brazilian hairdressers to be 71%. The current study showed the frequency of Musculoskeletal discomforts among hairdressers to be 77.6%. Their results showed that various psychological and other factors associated with discomfort at work and fatigue were the risk factors leading to musculoskeletal disorders. This study also proved that uncomfortable posture at work and lack of acknowledgment of work leads to discomforts such as pain which affects job efficiency.

Their results showed that the shoulder, neck and back were the most affected body regions

while this current study showed us that the hands and wrists are the most affected region of the body among hairdressers.⁷ The results of this current study are consistent with the literature available on work-related musculoskeletal disorders in professionals who also faced numerous musculoskeletal and psychosocial demands during their work.^{4,13-17}

Sukhdev Mishra and co-workers conducted a study to find out work-related musculoskeletal disorders and their associated risk factors among urban metropolitan hairdressers in India. Their results showed us that almost half of the hairdressers who were included in their study suffered from foot and knee pain which was reported by 49.5% of the population, which was followed by pain in the lower back that was 39.8% of the population, pain in the upper back pain was 38.8% and in the neck and shoulder was reported to be 25% among the hairdressers.¹¹ This current study did not focus on the discomforts in the lower extremity of the hairdressers. Both studies agree on the fact that longer working hours at the workplace significantly increase the risk of occurrence of musculoskeletal disorders.

Their results showed that long daily working hours, more than 12 hours lead to a significantly higher risk among hairdressers for developing musculoskeletal disorders. The gender of females has always been found to be significantly associated with the occurrence of work-related musculoskeletal disorders, this was also proved by a study conducted by DeSmet et al.¹⁸⁻²⁰ The obligation of the anatomical and physiological differences between males and females might also explain the reason for the increased risk of the development of more musculoskeletal disorders among females who tend to have less strength in muscles and a relatively higher proportion of type one fibers which are weaker than the mean of the same size in

upper extremities.^{19,20}

The current study also included more female hairdressers who complained of pain. The significance of the current study might also be derived from the related unfortunate employment-related outcomes among professional workers who traditionally reported early retirement, disability and absence due to sickness.²¹⁻²⁴

A very large portion of musculoskeletal disorders are caused by physical exposures at work and musculoskeletal disorders are the second most communal cause of disability globally.^{25,26} This current study proved that there is a high frequency of musculoskeletal disorders among hairdressers although the sample size was low so this current study recommends future researchers to conduct this study with a larger sample for more generalized and authentic results. This study evaluated which region was most affected by discomfort while the hairdressers work. Future researchers are recommended to conduct studies on a larger scale and to find out more about risk factors that might prevail among the population of hairdressers that lead to chronic musculoskeletal disorders that decrease their job efficiency.

Appropriate precautionary and interventional measures can be developed to avoid and reduce the chances of acquiring musculoskeletal disorders among hairdressers. Beneficial treatment plans can be incorporated within the treatment policies of this population of occupational workers.

CONCLUSION

This study concludes that there is a high frequency of musculoskeletal discomforts among hairdressers. Prolonged working hours might be a significant risk factor that

contributes to these disorders. This study concludes that musculoskeletal disorders among hairdressers affect their job efficiency and their activities of daily living. This highlights the significance of publicizing recommendations to prevent the symptoms considering the endowment of suitable equipment, furniture, work tools, conditions of the working environment, size of the workplace, organization of the work and psychosocial factors at the workplace.

DECLARATIONS

Consent to participate: Written consent had been taken from patients. All methods were performed following the relevant guidelines and regulations.

Availability of data and materials: Data will be available on request. The corresponding author will submit all dataset files.

Competing interests: None

Funding: No funding source is involved.

Authors' contributions: All authors read and approved the final manuscript.

REFERENCES

1. Luttmann A, Jager M, Griefahn B, Caffier G, Liebers F, Organization WH. Preventing musculoskeletal disorders in the workplace. 2003.
2. Glover W, McGregor A, Sullivan C, Hague J. Work-related musculoskeletal disorders affecting members of the Chartered Society of Physiotherapy. *Physiotherapy* 2005; 91(3): 138-47.
3. Smith D, Leggat P. Musculoskeletal disorders in nursing. *Australian Nursing Journal: ANJ, The* 2003; 11(1): 19-21.
4. Aptel M, Aublet-Cuvelier A, Cnockaert JC. Work-related musculoskeletal disorders of the upper limb. *Joint bone spine* 2002; 69(6): 546-55.

5. Fang H-L, Chen R, Fang H-P, Xu Q. An ergonomic approach to an investigation into the risk factors leading to work-related musculoskeletal disorders for Taiwanese hairdressers. *Pro Int Assoc Societies Des Res Iasdr07* 2007.
6. Mahdavi S, Mahdavi M, Safary M, Rashidi R, Dehghani T, Kosari M. Evaluation of the risk of musculoskeletal disorders using rapid entire body assessment among hairdressers in Khorramabad, Iran, in 2014. *Journal of Occupational Health and Epidemiology* 2013; 2(3): 138-45.
7. Mussi G, Gouveia N. Prevalence of work-related musculoskeletal disorders in Brazilian hairdressers. *Occupational medicine* 2008; 58(5): 367-9.
8. Mekonnen TH, Kekeba GG, Azanaw J, Kabito GG. Prevalence and healthcare seeking practice of work-related musculoskeletal disorders among informal sectors of hairdressers in Ethiopia, 2019: findings from a cross-sectional study. *BMC Public Health* 2020; 20(1): 1-10.
9. Cruz J, Dias-Teixeira M. Work-related musculoskeletal disorders among the hairdressers: a pilot study. *Advances in Physical Ergonomics and Human Factors*: Springer; 2016: 133-40.
10. Waters TR, Dick RB, Davis-Barkley J, Krieg EF. A cross-sectional study of risk factors for musculoskeletal symptoms in the workplace using data from the General Social Survey (GSS). *Journal of Occupational and Environmental Medicine* 2007: 172-84.
11. Mishra S, Sarkar K. Work-related musculoskeletal disorders and associated risk factors among urban metropolitan hairdressers in India. *Journal of occupational health* 2021; 63(1): e12200.
12. Kuorinka I, Jonsson B, Kilbom A, et al. Standardised Nordic questionnaires for the analysis of musculoskeletal symptoms. *Applied ergonomics* 1987; 18(3): 233-7.
13. Toomingas A. Characteristics of pain drawings in the neck-shoulder region among the working population. *International archives of occupational and environmental health* 1999; 72(2): 98-106.
14. Devereux J, Vlachonikolis I, Buckle P. Epidemiological study to investigate potential interaction between physical and psychosocial factors at work that may increase the risk of symptoms of musculoskeletal disorder of the neck and upper limb. *Occupational and environmental medicine* 2002; 59(4): 269-77.
15. Lundberg U. Psychological stress and musculoskeletal disorders: psychobiological mechanisms. Lack of rest and recovery greater problem than workload. *Lakartidningen* 2003; 100(21): 1892-5.
16. Huang GD, Feuerstein M. Identifying work organization targets for a work-related musculoskeletal symptom prevention program. *Journal of Occupational Rehabilitation* 2004; 14(1): 13-30.
17. Harkness E, MacFarlane GJ, Nahit E, Silman A, McBeth J. Mechanical and psychosocial factors predict new onset shoulder pain: a prospective cohort study of newly employed workers. *Occupational and environmental medicine* 2003; 60(11): 850-7.
18. De Smet E, Germeys F, De Smet L. Prevalence of work related upper limb disorders in hairdressers: a cross sectional study on the influence of working conditions and psychological, ergonomic and physical factors. *Work* 2009; 34(3): 325-30.
19. Almeida CGdSTGd, Fernandes RdCP. Musculoskeletal disorders in distal upper extremities among women and men: results of a study in the industry sector. *Revista Brasileira de Saúde Ocupacional* 2017; 42.
20. Côté JN. A critical review on physical factors and functional characteristics that may explain a sex/gender difference in work-related neck/shoulder disorders. *Ergonomics* 2012; 55(2): 173-82.

21. Hallman DM, Holtermann A, Björklund M, Gupta N, Nørregaard Rasmussen CD. Sick leave due to musculoskeletal pain: determinants of distinct trajectories over 1 year. *International archives of occupational and environmental health* 2019; 92(8): 1099-108.
22. Podniece Z, Tregenza T. Managing work-related MSDs in Europe—Lighten the Load. 2011.
23. Roquelaure Y, Bodin J, Descatha A, Petit A. Musculoskeletal disorders: how to recognize them as occupational diseases. *La Revue du praticien* 2018; 68(10): 1132-4.
24. Woolf AD, Brooks P, Åkesson K, Mody GM. Prevention of musculoskeletal conditions in the developing world. *Best Practice & Research Clinical Rheumatology* 2008; 22(4): 759-72.
25. Gomez-Galan M, Perez-Alonso J, Callejón-Ferre Á-J, Lopez-Martinez J. Musculoskeletal disorders: OWAS review. *Industrial health* 2017; 55(4): 314-37.
26. Nath M, Varghese T, Mehta I, et al. An Analysis into Religious Violence and Socio-Economic Impacts in India. *International Journal of Policy Sciences and Law* 2021; 2(01): 2644-77.