

Prevalence of Work-related Musculoskeletal Pain among Female Beauticians in Gujranwala

Dr. Ayesha Abdul Ghafoor*, Dr. Ramish Abrar**, Dr. Sehar Hayat**, Dr. Maham Asim***, Dr. Haram Nawaz**, Dr. Rana Ahmad Abubakar Saddique**, Dr. Iqra****

*Gujranwala Institute of Rehabilitation Sciences (GIRS)

**Gujranwala Institute of Rehabilitation Sciences (GIRS)

**College of Nursing, DHQ Teaching Hospital, Gujranwala

***THQ Mureedkay, Sheikhpura

****Sheikhpura

Abstract

Background: Work-related musculoskeletal disorders (WRMSDs) are a growing concern among beauty professionals due to prolonged standing, repetitive tasks, and poor ergonomics. Despite global attention, limited data exists on the burden of WRMSDs in Pakistani beauticians.

Objective: To determine the prevalence of work-related musculoskeletal pain (WRMSP) among female beauticians in Gujranwala, Pakistan.

Methods: A cross-sectional study was conducted involving 267 female beauticians using a non-probability convenient sampling technique. The standardized Nordic Musculoskeletal Questionnaire (NMQ) was used to collect data. The study was conducted over four months, and data were analyzed using SPSS Version 21.

Results: Out of 267 participants, 256 (95.89%) reported musculoskeletal pain in at least one body region over the past 12 months. The most commonly affected areas were the neck (65.9%), shoulders (57.3%), and lower back (55.4%).

Conclusion: A high prevalence of WRMSP was observed among female beauticians, especially in the neck, shoulders, and lower back. Preventive measures, ergonomic education, and occupational health support are crucial for reducing the burden of WRMSDs in this workforce.

Index Terms

Work-related musculoskeletal disorders, Beauticians, Nordic Musculoskeletal Questionnaire, Occupational health, Ergonomics

I. INTRODUCTION

Musculoskeletal pain is frequently associated with common workplace risk factors, such as a fast work pace, repetitive tasks, inadequate recovery time, heavy exertion, improper body mechanics, poor tool design, and awkward postures (Neha P. Patel, 2023). Work-related musculoskeletal pain (WRMSP) is recognized as one of the most prevalent sources of occupational health issues worldwide. It imposes significant socioeconomic burdens on individual workers and society, encompassing injuries or disorders that affect muscles, nerves, tendons, joints, cartilage, and spinal discs, ultimately leading to pain and functional limitations in the musculoskeletal system (Neha P. Patel, 2023).

According to the Cambridge Dictionary, a “beautician” is a practitioner trained in enhancing the appearance of a client's face, body, and hair through the application of cosmetics and beauty treatments (Piri H., 2021). The beauty industry, however, often overlooks the occupational health risks associated with its physically demanding work. WRMSP is particularly common in this field due to the nature of the tasks performed—prolonged standing, non-neutral postures, repetitive hand and arm movements, and inadequate ergonomic practices. The World Health Organization (WHO) notes that musculoskeletal disorders are among the leading causes of disability globally, with substantial impacts on daily functioning and employment (Krishnan et al., 2021).

Beauticians frequently maintain static and awkward postures, perform repetitive tasks, and operate in environments with limited ergonomic optimization (Piri H., 2021). These factors collectively contribute to the development of WRMSDs. Historical references, such as the works of Ramazzini in the 18th century, identified musculoskeletal disorders as occupational illnesses. These can be classified as either specific (with identifiable clinical features) or non-specific (where pain occurs without clear pathological evidence) (Krishnan et al., 2021).

WRMSP affects not only the physical health of workers but also their productivity and overall quality of life. It contributes to work absenteeism, disability, and reduced performance—studies have shown a productivity reduction of 6–9% due to such discomfort (Vaidya S., 2019). Jobs that involve repetitive motion, forceful exertions, pressure points, and long periods without adequate ergonomic adjustments expose workers to serious physical hazards.

Although numerous studies have explored occupational skin and respiratory disorders, cancer risks, and reproductive health issues among beauty professionals, most of the existing literature focuses on hairdressers. There is a notable gap in research specifically addressing musculoskeletal disorders among cosmetologists and beauticians (Alexandra Tsigonia, 2009).

Rationale:

This study aims to determine the prevalence of work-related musculoskeletal pain among

female beauticians in Gujranwala, Pakistan. It seeks to raise awareness about the occupational risks faced by this professional group and inform preventive strategies to reduce the burden of WRMSDs.

II. IDENTIFY, RESEARCH AND COLLECT IDEA

Numerous international studies have explored the prevalence and contributing factors of work-related musculoskeletal disorders (WRMSDs) across a variety of professions. These studies confirm that occupations involving repetitive movements, awkward postures, and physical stress lead to musculoskeletal symptoms.

Neha P. Patel et al. (2023) conducted an observational study among female beauticians in Ahmedabad using the Nordic Musculoskeletal Questionnaire (NMQ) and Multidimensional Assessment of Fatigue (MSF). Their findings showed a moderate correlation between WRMSDs and fatigue.

Tamjeed Ghaffar et al. (2023) examined freelancers through an online questionnaire-based cross-sectional study and found a high prevalence of neck-related musculoskeletal issues among those working for over six months.

Elif Altundas et al. (2023) studied 1,374 unionized metal industry workers and revealed a significant association between musculoskeletal disorders, occupational diseases, and physical load.

Abdulelah M. Ali et al. (2023) reported a high prevalence of WRMSDs among 263 professional rickshaw drivers in Aligarh, India. The most affected regions included the neck, lower back, and knees.

Faisal S. Aldayel et al. (2023) studied 327 surgeons in Riyadh and found a high incidence of WRMSDs among physicians in surgical specialties.

Thacker and Yasobant (2023) investigated WRMSDs among 120 dentists in Gujarat, India, and identified a high prevalence of musculoskeletal disorders in this group.

Noor Mohammad et al. (2023) surveyed 109 government school teachers and found a significant relationship between WRMSDs and prolonged standing postures in the education sector.

Abeer Abdelsalam et al. (2023) reported that among 128 kitchen workers in Cairo, poor ergonomic environments were strongly linked with WRMSDs.

Muhammad Umer Iqbal et al. (2023) conducted a study on 307 chefs in Rawalpindi and Islamabad and concluded that physical workload was significantly associated with musculoskeletal complaints.

Mekaunent Asmare Yizengaw et al. (2021) examined WRMSDs among 394 health care providers in Ethiopia, highlighting high prevalence rates, especially among operating room workers.

Elvis Mahmutovic et al. (2020) studied university teaching staff in Serbia and found musculoskeletal complaints were more common in male educators.

Xianting Yong et al. (2020) surveyed 1,500 coal miners in Xinjiang, revealing a very high annual prevalence of WRMSDs linked to intense physical demands.

H. Pradeepkumar et al. (2020) reported that among 301 bus drivers in Karnataka, there was a significant relationship between WRMSDs and long driving durations.

Despite this growing body of international literature, there remains a notable research gap in Pakistan, particularly within the **beautician population**. Most local studies have focused on other occupational groups such as teachers, drivers, or healthcare providers. Therefore, this study aims to fill the gap by evaluating WRMSDs specifically among female beauticians in Gujranwala using a validated tool (NMQ).

III. WRITE DOWN YOUR STUDIES AND FINDINGS

A descriptive cross-sectional study was conducted to determine the prevalence of work-related musculoskeletal pain (WRMSP) among female beauticians in Gujranwala. A total of 267 participants were recruited through non-probability convenience sampling. The study was conducted over a period of six months after obtaining institutional approval. Data was collected from beauty parlors located across ten areas of Gujranwala, including Peoples Colony, DC Road, Garden Town, Model Town, Satellite Town, City Housing, GT Road, Kashmir Road, Fareed Town, and Sui Gas Road.

Participants were eligible if they were female beauticians aged 20–45 years, had at least one year of experience, and worked between 4 to 7 hours daily. Those with recent trauma, surgeries, neurological, cardiovascular, or pulmonary disorders were excluded. After informed consent was obtained, the **Nordic Musculoskeletal Questionnaire (NMQ)** was administered. This tool allowed the assessment of musculoskeletal symptoms over the past 12 months across nine body regions.

Data was analyzed using **SPSS version 29.0**, applying descriptive statistics to summarize frequency distributions.

Results

Out of 267 participants, **95.89%** reported experiencing work-related musculoskeletal pain in at least one body region during the past year, while only **4.11%** reported no pain.

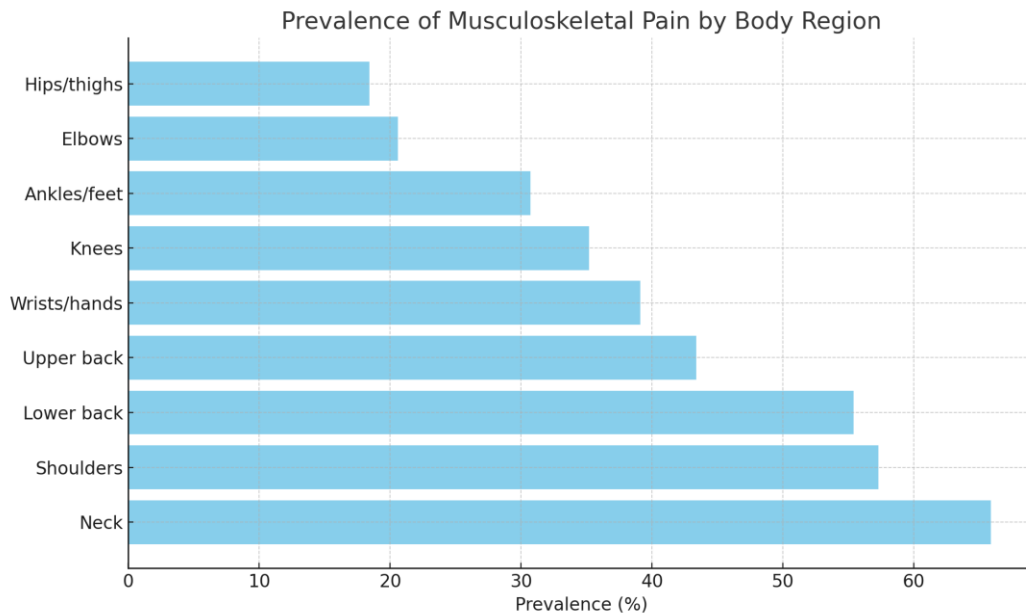
The **most commonly affected body regions** were:

Table 1

Body Region	Prevalence (%)
Neck	65.9%
Shoulders	57.3%
Lower back	55.4%
Upper back	43.4%
Wrists/hands	39.1%
Knees	35.2%
Ankles/feet	30.7%
Elbows	20.6%
Hips/thighs	18.4%

Table 1: Prevalence of Musculoskeletal Pain by Body Region (Past 12 Months)

These results confirm a **high burden of WRMSP**, particularly in the **neck, shoulders, and lower back**, all of which are body areas typically stressed during prolonged standing, repetitive upper limb use, and improper ergonomics in salon tasks.

Figure 1: Musculoskeletal Pain by Body Region

IV. GET PEER REVIEWED

The manuscript was reviewed by academic experts from the field of physiotherapy and occupational health. Their comments supported the overall methodological soundness of the study. Feedback primarily focused on refining the clarity of statistical results and improving the discussion around contributing risk factors. All responses were constructive and helped strengthen the overall quality and coherence of the article.

V. IMPROVEMENT AS PER REVIEWER COMMENTS

The authors implemented all the reviewers' suggestions to enhance academic presentation and structure. Improvements included refining the result tables, elaborating on the discussion section by comparing findings with past literature, and better highlighting key conclusions. The final manuscript now presents a more comprehensive understanding of WRMSD among beauticians, especially within the Pakistani context.

VI. CONCLUSION

This study concludes that female beauticians in Gujranwala are at high risk of developing work-related musculoskeletal pain due to prolonged standing hours, non-neutral postures, repetitive movements, and lack of ergonomic awareness. The most affected body regions were the **neck, shoulders, and lower back**. These findings align with international studies on similar professions and reinforce the necessity for proactive measures.

Discussion

The aim of this study was to identify the prevalence of WRMSP among female beauticians aged 20 to 45 years. The findings demonstrate a **very high prevalence (95.89%)**, which confirms the physical strain these professionals experience while working 30 to 60 hours weekly. Contributing factors include repetitive upper limb movements, awkward postures, prolonged standing, and fast-paced work conditions. These cause fatigue, pain, and burning sensations in various body parts.

Anjum H et al. reported that pain in the neck (43.9%), shoulders (42.2%), and lower back (59.9%) was common among professionals in similar work environments. The current study found even higher prevalence rates in these regions.

Other international findings support this. A study by **Abdelsalam et al.** on kitchen workers revealed that lower educational levels were associated with higher risk of WRMSP. Manual labor, usually performed by less-educated individuals, lacks ergonomic awareness—suggesting education as a protective factor.

Dalia E. Meisha et al. (2019) reported a 70% prevalence of WRMSP among dentists in Saudi Arabia, with most complaints coming from the lower back (85%), neck (84%), and shoulders (81.2%). These results mirror the occupational hazards found in beauticians due to similar physical stressors.

Additionally, **Tsegay et al. (2019)** linked low back pain (LBP) to psychosocial stress and poor postural habits—both present in beauty professionals who spend long hours in static, unsupported positions. This further supports the high rate of LBP observed in this study.

ACKNOWLEDGMENT

The author sincerely expresses gratitude to **Dr. Ayesha Abdul Ghafoor (PT)**, Gujranwala Institute of Rehabilitation Sciences, for her valuable guidance, supervision, and continuous support throughout the course of this research. Her expertise and encouragement were instrumental in the successful completion of this study.

AUTHORS

First Author – Dr. Ayesha Abdul Ghafoor, PT, Gujranwala Institute of Rehabilitation Sciences (GIRS)

Second Author – Dr. Ramish Abrar, PT, Gujranwala Institute of Rehabilitation Sciences (GIRS)

Third Author – Dr. Sehar Hayat, PT, College of Nursing, DHQ Teaching Hospital, Gujranwala,

Fourth Author – Dr. Maham Asim, PT, THQ Mureedkay, Sheikhpura,

Fifth Author – Dr. Haram Nawaz, PT, Gujranwala Institute of Rehabilitation Sciences (GIRS),

Sixth Author – Dr. Rana Ahmad Abubakar Saddique, PT, Gujranwala Institute of Rehabilitation Sciences (GIRS),

Correspondence Author

Seventh Author – Dr. Iqra, PT, Sheikhpura,

REFERENCES

- [1] A. Abdelsalam et al., "Frequency and risk factors of musculoskeletal disorders among kitchen workers," J. Egypt. Public Health Assoc., vol. 98, no. 3, 2023.
- [2] F. S. Aldayel et al., "The prevalence of work-related musculoskeletal symptoms among surgeons in Riyadh city," Medical Science, vol. 27, no. 35, p. 2733, 2023.
- [3] A. Tsigonia et al., "Musculoskeletal Disorders among Cosmetologists," Int. J. Environ. Res. Public Health, vol. 6, pp. 2967–2979, 2009.
- [4] A. M. Ali et al., "Prevalence of Work-related Musculoskeletal Disorders Among Professional Rickshaw Drivers in Aligarh, Uttar Pradesh, India," Work, vol. 76, no. 3, pp. 1239–1253, 2023.
- [5] Y. Ayub and Z. Sadiq, "Assessment of Work-Related Musculoskeletal Disorders in Manufacturing Industry," J. Ergonomics, vol. 8, 2018.
- [6] A. Chairani, "Validity and reliability test of the Nordic Musculoskeletal Questionnaire with formal and informal sector workers," in 7th Int. Conf. Public Health, pp. 100–106, 2020.
- [7] A. Dehdashti, M. Shohani, and M. Zare, "Workplace stresses and musculoskeletal disorders among nurses," Middle East J. Rehabil. Health Stud., vol. 4, no. 3, 2017.
- [8] E. AltundasHatman et al., "Work-related diseases and risk factors associated with work-related musculoskeletal disorders among unionized metal industry workers: A cross-sectional study," Int. J. Occup. Saf. Ergon., 2023.

- [9] E. Mahmutovic, E. Basic, and Z. Djonlagic, "Work-related musculoskeletal disorders among teaching staff of higher education," *Exp. Appl. Biomed. Res.*, vol. 24, no. 1, pp. 63–68, 2020.
- [10] F. Rahimi et al., "Prevalence of Work-Related Musculoskeletal Disorders in Iranian Physical Therapists: A Cross-sectional Study," *J. Manipulative Physiol. Ther.*, vol. 41, no. 6, pp. 503–507, 2018.
- [11] T. Ghaffar et al., "Frequency of Work-Related Neck Pain in Freelancers," *The Therapist (J. Therapies & Rehabil. Sci.)*, vol. 4, no. 1, 2023.
- [12] D. Haung and Z. He, "Prevalence of work-related musculoskeletal disorders among sonographers in China: Results from a national web-based survey," *J. Occup. Health*, vol. 59, pp. 529–541, 2017.
- [13] M. U. Iqbal et al., "Prevalence of Musculoskeletal Disorders Among Chefs Working in Restaurants of Twin Cities of Pakistan," *Work*, vol. 74, no. 4, pp. 1507–1513, 2023.
- [14] K. Krishnan, G. Raju, and O. Shawkataly, "Prevalence of Work-Related Musculoskeletal Disorders: Psychological and Physical Risk Factors," *Int. J. Environ. Res. Public Health*, vol. 18, p. 9361, 2021.
- [15] M. A. Yizengaw et al., "Prevalence of work-related musculoskeletal disorders among healthcare providers working in the operating room," *Ann. Med. Surg.*, vol. 72, 2021.
- [16] T. Mekonnen and A. Kifle, "Prevalence and healthcare-seeking practice of work-related musculoskeletal disorders among informal sectors of hairdressers in Ethiopia," *BMC Public Health*, vol. 20, 2020.
- [17] N. Mohammad, S. Chauhan, and N. Khan, "Occupation-related musculoskeletal pain in school teachers: A cross-sectional survey," *Adv. Biomed. Health Sci.*, vol. 2, no. 2, pp. 88–91, 2023.
- [18] N. P. Patel et al., "Association between work-related musculoskeletal disorders and fatigue among female beauticians in Ahmedabad: An observational study," *Int. J. Health Sci. Res.*, vol. 13, no. 6, pp. 6–10, 2023.
- [19] H. Piri et al., "The effect of 12-week corrective exercises on the postural angles of beautician females with upper crossed syndrome: A clinical trial study," *Women's Health Bull.*, vol. 8, no. 2, pp. 91–97, 2021.
- [20] H. Pradeepkumar and S. Sahu, "Prevalence of Work-Related Musculoskeletal Disorders Among Occupational Bus Drivers of Karnataka, South India," pp. 73–84, 2020.
- [21] H. Thacker and S. Yasobant, "Prevalence and determinants of work-related musculoskeletal disorders among dentists: A cross-sectional evaluative study," *Indian J. Dent. Res.*, vol. 34, no. 1, pp. 24–29, 2023.

[22] S. Vaidya and R. Pandey, "Effects of ergonomic advice and neck exercises on neck pain in beauticians," *Int. J. Res. Eng. Sci. Manag.*, vol. 2, no. 6, pp. 2581–5792, 2019.

[23] X. Yong et al., "A cross-sectional epidemiological survey of work-related musculoskeletal disorders and analysis of its influencing factors among coal mine workers in Xinjiang," *Biomed. Res. Int.*, 2020.