



Assessing the prevalence of musculoskeletal disorders in barbers: An Observational Study

Varsha Khandizod¹, Dr. Tayyaba Munawar², Dr. R S Gangatharan³

¹ Intern, Musculo Physiotherapy, Rashtrasant Janardhan Swami College of Physiotherapy, Maharashtra, India

² Assosiated professor, Neurophysiotherapy Department, Maharashtra University of Health Sciences, Maharashtra, India

³ Principle, Rashtrasant Janardhan Swami College of Physiotherapy, Maharashtra, India

Abstract

Background: Barbers face a high risk of work-related musculoskeletal disorders (MSDs) because of their repetitive work, which include prolonged standing, repeated upper limb movements, continuous neck bending, elevated shoulders, and uncomfortable position while cutting, shaving, and grooming. over time, these biomechanical stresses result in accumulated injuries impacting the neck, shoulders, upper back, lower back, wrists, and hands. This risk is more in rural areas due to a lack of ergonomic knowledge, insufficient awareness of good working posture, extended working hours, and inadequate access to occupational health services.

Aim: To evaluate the frequency of musculoskeletal disorders in barbers operating in rural regions.

Method: a study conducted involving 100 full-time professional barbers aged 25 to 50 in rural areas. participants with at least one year of work experience were included. Musculoskeletal symptoms were assessed with the Nordic Standard Musculoskeletal Questionnaire, which measures pain and discomfort in different body regions over specified period. the data were examine using descriptive statistics including frequency distribution and percentages

Result: The results indicated a significant prevalence of MSDs among barbers. Of the 100 participants, Mild MSD was indicated by 58.7% of individuals, moderate by 58.7%, and severe by 84.7%. The area's most frequently impacted were the neck, shoulders, lower back, and wrists, due to repetitive upper limb tasks, static positions, and extended standing during work hours.

Conclusion: Barbers are more prone to developing musculoskeletal disorders due to repetitive strain. Preventive strategies involving in ergonomic modifications and training programs are essential for reducing work-related musculoskeletal problems and improving quality of life.

Keywords: Barbers, Musculoskeletal disorders, Nordic standard questionnaire

Introduction

A barber is a person whose occupation include cutting, dressing, grooming, styling, and shaving hair and beards. Barbers are most important professional of community. Musculoskeletal disorders are arguably the most prevalent and well-known causes of long-term pain and physical disability. Because of the nature of hazardous working conditions to which they are exposed, barbers are the potential high risk groups to musculoskeletal disorders, particularly to work-related upper extremity disorders (WUEDs) [2]

Pain and discomfort in different sections of the musculoskeletal system are one of the most important problems of occupational health in the workplace [1, 2] in the years from 1991 and 1994, Musculoskeletal diseases responsible for the 14.4 percent of the country's total disability. [3] Mohsen Sadeghi Yarandi, Alireza Koohpaei, Shahram Arsang Jang, Ali Ebrahim, (2018)

Workers who are exposed to manual labour characterized by repeated motions, static and limited posture, twisting, frequent bending, and poor psychological and social situations have a high prevalence of work- related [4,5] musculoskeletal illnesses.

Compared to their urban areas, barbers, particularly those employed in rural regions, are more vulnerable to musculoskeletal problems. Barbers in rural areas typically work in semi-formal or informal settings with little regard for occupational health regulations. In rural areas, barbers

often work in small shops with limited space, poor ergonomic design, inadequate seating, and lack of awareness regarding occupational health and safety. [1]

A lot of physical and mechanical risk factors effective for this disorder, which one of the most important risk factors is an improper working posture. [3] A group of people due to various tasks with the body position outside the normal situation is at most risk of physical disorders.

Musculoskeletal disorders are significantly increased in recent years in the barbers [10]. The most common musculoskeletal disorders mentioned in barbers is an upper limb disorders, carpal tunnel syndrome, lower back and neck problems [11]. Due to the repetitive nature of their work, prolonged static posture, and sustained use of hand- held tools such as scissors, clippers, and razors. Mohsen Sadeghi Yarandi, Alireza Koohpaei, Shahram Arsang Jang, Ali Ebrahimi, (2018).

Musculoskeletal disorders are of the most common occupational injuries and diseases in both developed and developing countries [2]. These are owing to the muscles, bones, joints, nerves and blood vessels [3]. Work related musculoskeletal disorders typically entangle low back, neck, and upper limbs [4]. Barbers constitute an important group of informal & self employe workers, particularly in rural areas [5]. Their occupation required prolonged standing, repetitive use of the upper limb, awkward neck & trunk postures, and continuous hand movements while cutting hair, shaving, and

performing grooming activities. These work-related factors place barbers at a high risk of developing musculoskeletal disorders, especially affecting the neck, shoulders, lower back, wrist and hands.

Due to their prolonged standing, barbers are frequently linked to musculoskeletal disorders. These disorders can affect various parts of body, including the neck, shoulders, back, wrists often resulting in pain & discomfort. [6] Musculoskeletal disorders (MSDs) include a wide range of conditions affecting muscles, bones, joints, tendons, ligaments, and nerves, and commonly develop due to repetitive movements, prolonged static postures, forceful exertion, and poor ergonomic practices.

Common health issues include neck problems like cervical strain and cervical spondylosis caused by prolonged neck bending; shoulder issues such as rotator cuff tendinitis and impingement syndrome resulting from frequent arm lifting upper limb ailments including tendinitis, shoulder pain, lateral and medial epicondylitis, rotator cuff tendinopathy, tenosynovitis, carpal tunnel syndrome, and trigger finger due to repetitive wrist movements lower back issues like mechanical low back pain and lumbar spondylosis associated with prolonged standing and bending forward; and lower limb conditions such as knee pain, osteoarthritis, and plantar fasciitis from continuous weight-bearing activities Farouk Mahmoud Egyptian Journal of Health, 2021 [8]. When these disorders are not identified and managed at an early stage, they may progress to chronic conditions leading to persistent pain, reduced joint mobility, muscle weakness, and functional limitations. Over time, affected individuals may experience difficulty in performing occupational tasks, decreased work efficiency, increased absenteeism, and in severe cases, work disability or early retirement. Long-term musculoskeletal disorders also negatively impact quality of life by contributing to fatigue, sleep disturbances, psychological stress, and economic burden due to loss of income and increased healthcare costs SD Mishra, K Sarkar - Journal of occupational health, 2021 [9].

Carpal tunnel syndrome, low back pain, upper back pain, lower limb pain and neck problems are all common musculoskeletal disorders in barbers [10] Ebere Yvonne Ihegihu, Ginikanwa Deborah Didi, Chima Collins Ihegihu. Barbers in India experience work related musculoskeletal disorders with a prevalence 88%.

Methods

Ethical Statement

The study received approval from the institutional ethics committee. It was conducted following the ethical guidelines of the declaration of Helsinki (updated 2013) for medical research involving human subjects as well as the 2017 national ethical guidelines for biomedical and health

research involving human participants from the Indian council of medical research.

Design

A total of 100 participants were chosen on the basis of inclusion criteria. A Nordic standard questionnaire was used to assess the musculoskeletal disorders in barbers. The result of questionnaire was collected and analyzed to find out prevalence of musculoskeletal disorders in barbers.

Participants

A total of 100 participants were chosen on the basis of inclusion criteria of the study. The inclusion criteria of study included individuals with at least 1 year of work experience in occupation, age between 25-50 years both genders will be included. The exclusion criteria of the study included barbers with history of musculoskeletal trauma and surgery unrelated to work. Consent was taken from the participants and they were informed with the purpose of the study before collecting the data.

Outcome Measures

- Nordic Standard Questionnaire

Procedure

Ethical approval from community will be obtained prior to commencement of the study, and informed consent form will be taken from all participants. Participants will be selected strictly according to the predefined inclusion and exclusion criteria. The therapist will assess musculoskeletal disorders in each participant.

Nordic standard questionnaire:

1. Nordic standard questionnaire-(Gómez-Rodríguez *et al.*, 2020) (Reliability- >0.9, validity - >0.6). This questionnaire used to assess musculoskeletal pain and its impact on daily activities. The questionnaire helps to identify the level of pain, from mild to severe, experienced in each body regions.

Result

A total of 100 participants were assessed for prevalence of musculoskeletal disorders in barbers using Nordic standard questionnaire.

Table: 4.1 The table shows the gender wise distribution of the subjects it shows 17% were female whereas 83% subjects were males.

TABLE:4.2 It demonstrates highest patients belongs to 25-30 age group i.e 28% then 30-35 is 21%, 35-40 is 18%, 40-45 is 18% & 45-50 is 15%.

TABLE:4.3 The table represent the mean NCQ score of the subjects. It demonstrates that mean of mild and moderate MSD were same and found to be 58.7 ±6.44 score, whereas the severe MSD group demonstrated 84.77±9.16.

Table 4: Descriptive Statistics

Y Variable	Group	Mean	Std Dev.
NSQ score	Mild MSD	58.71	6.44
	Moderate MSD	58.71	6.44
	Severe MSD	84.77	9.16

The table shows NSQ mean value are same for mild & moderate MSD groups is 58.71 and the NSQ mean value for severe MSD group is 84.77.

Analysis of Variance comparing NSQ score

Table 4.5: Analysis of variance results comparing the mean nsq score between mild, moderate and severe msd groups

Source	Type III SS	Df	Mean sq.	F-value	P- value
Model	13258.844	2	6629.422	117.81significant	0.000
Error	4570.795	83	56.275		P<0.01
Total	17929.640	85			

The table demonstrates as the mean NSQ scores differed between three MSD group. From the result it is found that the F - value 117.81 is significant [p-value =0.000<0.01]. This shows that mean MSD values between mild, moderate and severe groups are significantly different.

Table 4.6: Post Hoc Tests for Multiple Mean Comparison

Test	Group 1	Group 2	Mean Diff.	SE	q value	P value
Turkey	Mild MSD	Moderate MSD	0.000	1.418	0.000	1.000
		Severe MSD	- 26.052	1.394	18.691	0.000
	Moderate MSD	Severe MSD	- 26.052	1.394	18.691	0.000

Post hoc test shows that NSQ mean values are same for mild & moderate groups and the NSQ mean value of the severe MSD group is highest.

Discussion

The present study aims to assess the prevalence of musculoskeletal disorders in barbers working in rural areas by using Nordic standard musculoskeletal questionnaires. The result shows a high prevalence of musculoskeletal disorders, with most participants suffering from mild to severe symptoms. The result indicated a significant prevalence of MSDs among barbers. Of the 100 participants, mild MSD was indicated by 58.7% of individuals, moderate by 58.7%, and severe by 84.7.

The result of this study aligns with previous research done in various areas. Investigations by Iheghihu *et al.* (2022) and Didi *et al.* indicated that the prevalence of work-related musculoskeletal disorders among barbers exceeded 90%. Likewise, Yarandi *et al.* (2018) discovered a significant occurrence of upper limb and lower back issues in barbers, linking these ailments to inadequate working posture and extended repetitive tasks.

Multiple work-related factors could clarify the elevated incidence of musculoskeletal disorders seen in this research. Barbers must remain on their feet for extended periods with little break, resulting in significant strain on the lower back and legs. Repetitive movements of the upper limbs while cutting, trimming, and shaving exert constant pressure on the shoulders, elbows, wrists, and hands.

Moreover, prolonged neck flexion and forward bending positions while attending clients lead to neck and upper back strain. holding these repetitive and fixed positions for extended durations can result in muscle fatigue, inflammation of soft tissues, and degenerative changes in joints.

The rural work setting heightens the probability of musculoskeletal disorders. most rural barber’s shops have limited space, inadequate ergonomic design, and fixed chairs and tools. There is also a lack of awareness about proper posture, ergonomic principles and preventive strategies.

In contrast to urban environments, rural barbers typically operate in informal conditions lacking access to occupational health services or ergonomic education. This could lead to a postponement in recognizing and addressing

musculoskeletal issues, causing symptoms to advance from mild to severe levels.

The presence of moderate to severe musculoskeletal disorders in 58% of participants suggests extended exposure to work related stressors. severe musculoskeletal symptoms may result in decreased joint mobility, muscle weakness, and persistent pain, ultimately affecting work performance and productivity

Barbers with severe symptoms may experience with the fine hand movements necessary for grooming, affecting service quality and their earnings. Eventually, this could result in higher absenteeism and premature work incapacity

Musculoskeletal disorders not only physical health but also carry considerable functional and psychosocial implications. chronic pain can result in tiredness, sleep issues, and mental strain. Decreased functional ability can disrupt daily activities and adversely affect general quality of life, early identification and management of musculoskeletal disorders are essential to avert the advancement to chronic illnesses. Physiotherapy techniques targeting posture improvement, ergonomic training, flexibility exercises, strength training, and work-rest patterns can significantly help alleviate symptoms.

the result of this research highlights the necessity for preventive measures aimed at rural barbers. Adjustable chairs, proper tool height, and anti-fatigue mats are ergonomic changes that can greatly lessen physical stress. Programs to promote proper posture, regular breaks, and exercise routines should be supported.

Physiotherapists can play a important role to training barbers on musculoskeletal wellness and establishing preventive programs to minimize the lasting impact of work-related musculoskeletal disorders.

Conclusion

The studies finding shows the high prevalence and severity of musculoskeletal disorders indicate that rural barbers face high risk for developing work-related musculoskeletal disorders. addressing ergonomic risk factors and promoting early intervention strategies are essential to improve occupational health and quality of life among this population.

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