Incidence of Work-Related Cervical Pain Disorder on Neck Disability Index- Hairdresser Population Based Cross-Sectional Study

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Dr. Ammar Javeid[1*], Dr. Ayesha Sadiq[2], Dr. Amnah Alam[3], Dr. Iqra Hameed[4], Dr. Amna Pervaiz[5] & Dr. Rabia Shaheen[6]

[1]Lecturer at Bakhtawar Amin Medical and Dental College Multan
[2]Senior Lecturer at Riphah International University
[3]Rotational Physiotherapist at Zakariya Hospital
[4]First Contact Physiotherapist Practitioner at National health services England
[5]Physiotherapist at Riphah International University Lahore
[6]Consultant Physiotherapist at Shalmar Hospital Lahore
[1]aj.physio32@gmail.com, [2]ayesha.sadiq.oo1@gmail.com, [3]amnahadnan0@gmail.com, [4]iqrahameed456@gmail.com, [5]Baddarpervaiz@gmail.com, [6]rabiameer488@gmail.com

Abstract

Purpose: The most frequent issue among workers who perform repetitive upper extremity activity in their line of work is neck pain. Hairdressers who cut hair frequently use their shoulders in their picking and holding of the scissors. The muscles, ligaments, and soft tissues of the musculoskeletal system are put under more strain by this repetitive activity. Consequently, the objective of the current study is to ascertain, how prevalent neck pain is among hairdressers. The study's objective is to determine the frequency of neck pain in hairdressers of Multan.

Methodology: Cross-sectional study design was employed in this investigation. Information was gathered from Multan hairdressers. The technique of simple random sampling was used to gather the data from hairdressers. A total of 100 hair stylists were included in the study. Workers between the ages of 20 and 40 who have been employed for more than six months without a neck injury, trauma, or neurological or musculoskeletal problem were included. Participants were given questionnaires, and the answers were recorded. Data was manually coded, entered, and analysed using SPSS version 21. Results were described using frequency distributions, percentages, means, and standard deviations.

Findings: Non Parametric Test was used to analyze data. In this study, only 44% of hairdressers reported having neck pain, while the rest reported mild, moderate, or no pain. The study demonstrates that hairdressers between the ages of 31 and 40 with more than five years of experience in their field frequently experience neck pain, which may be brought on by repetitive shoulder motion and poor posture at the workplace.

Recommendations: The results of this study showed that hairdressers in Multan frequently experience neck pain. Physiotherapy campaigns should be conducted to raise awareness among hairdressers. It is suggested to use a random sampling technique instead of convenience sampling in future research to enhance the generalizability of the findings. Considering that the study had a short duration, it is advisable to allocate a longer time frame for conducting future studies to obtain a more comprehensive understanding of the topic.

Keywords: *Hairdressers, Neck Abnormalities, Occupational Health, Prevalence, Workplace*

1.0 INTRODUCTION

Pain felt anywhere along the posterior C-spine, from the sup. nuchal line to 1st thoracic spinous process, is referred to as neck pain (Kazeminasab et al., 2022). Pain in the neck is typically felt on the posterior side. When the front of the cervical spine hurts, the typical description is of throat pain rather than neck pain (Peng et al., 2021).

The term "chronic neck pain" refers to a long-lasting, typically widespread pain that is associated with excessive discomfort in the skin, muscles, tendons, and joints along with discomfort in both passive and active motions in the cervical and shoulder area (Noori et al., 2020).

Neck pain, which is pain felt in the neck, can be brought on by many different spinal disorders, tight muscles in the upper back and neck, or pinched nerves coming from the cervical vertebrae. Lower neck and upper back, which support the head, are frequently the source of neck pain. The muscles in the area will tighten if this support system is negatively impacted, which will cause neck pain (Jahre et al., 2020).

The epidemiology of neck pain shows that the condition is becoming more widespread globally. The prevalence of neck pain has serious ramifications for people, communities, healthcare systems, and organizations. Studies previously published data shows that almost 10.4% and 21.3% of people experience neck pain annually, with higher rates seen in office and laptop workers. While some studies indicate that between 33% and 65% of people recover from neck pain within a year, most cases are thought to follow a recurring pattern over the course of a person's lifetime, resulting in relapses on a regular basis. The prevalence of neck pain in the overall population varies between 0.4% to 86.8%. Estimates place the prevalence of neck pain at about 23.1% on average. Additionally, prevalence rates differ between men and women, and high-income countries show higher prevalence rates than low- and middle-income countries. Urban areas usually indicate a greater rate of prevalence than rural ones as well. Until the age group of 35–49 years, there is an elevated risk of having neck pain; after that, the risk starts to decline (Kazeminasab et al., 2022).

According to reports, neck pain affects a large number of people worldwide—possibly hundreds of millions—and is widely acknowledged as a common and significant contributor to chronic pain and physical impairment. They have also been identified as one of the main factors contributing to serious human suffering, lost productivity, and financial burdens on society (Safiri et al., 2020). In Europe, one-fourth of adults experience chronic musculoskeletal issues that restrict daily activities (Corp et al., 2021).

Acar et al. carried out a cross-sectional study in Denizli, Turkey, to determine the prevalence of musculoskeletal disorders (MSDs) in the cervical region and upper extremities among cosmetologists and examine the relationship between ergonomic risk factors and hairdressing work. There were 504 participants in the sample. According to the study's findings, the prevalence of MSDs in the neck and upper limbs ranged from 7.7% to 55.8% in the previous year. Furthermore, a high or very high risk was found in 56.1% of work postures (Acar & Acımış, 2022).

In Nigeria, hairdressers run small businesses with one to ten employees. They hire apprentices, who are mainly female adolescents or young people who are not in school. Working conditions are subpar and work exposure is not regulated (Neumann, 2004). Such exposure can lead to a number of health issues. Hairdressers work in an environment with a variety of risks. These include ergonomic (incorrect posture while doing work, prolonged working hours without breaks),

physical (noisy environment, temperature), and chemical-based (hair items) agents. The Social Welfare Ministry of Brazil reported that 52.8%, 55.3%, and 50.1% of the occupational diseases reported in 2001, 2002, and 2003, respectively, were WMSDs. The shoulder, neck, and back are the most widely affected body parts in Brazilian hairdressers, according to reports (Mussi & Gouveia, 2008).

In order to determine the prevalence & risk factors for WUEDs among barbers, TH. Mekonnen et al. conducted a study. Using a systematic random sampling technique, 424 participants were selected as a sample. Pretesting was done on a standard Nordic MSK Questionnaire. The outcomes were 98.3%. Neck pain was common, with a prevalence of 29.3%. Study concluded that hairdressing professionals frequently suffer from neck disorder related to their jobs. In Ethiopia, there is an urgent need for public health initiatives that focus on workplace health promotions that encourage healthy lifestyle choices like drinking and physical activity. Additionally, it's crucial to adapt flexible work postures and properly manage workplace issues related to an ageing workforce in order to find the source of the complaints (Mekonnen et al., 2019).

A study on the frequency of MSK problems related to work, among hairdressers was conducted by HA. Anulika et al. Cross-sectional descriptive survey design was used for the study. A total of 289 hair stylists from salons were included. 75.6% of people had musculoskeletal disorders within the previous year. Pain in the neck was present in 46.3% of cases, serving a large number of customers in one day while remaining in the same position for an extended period of time. One of the coping mechanisms used by the participants was taking enough breaks to rest. The high prevalence of NECK pain among hairdressers may be significantly influenced by their age, years of experience, and the lengthy periods of time spent working while standing (Aweto et al., 2015).

This study aimed to determine how common neck pain among Multan's hairdressers. The study's objective is to make estimation on the percentage of hairdressers who suffer from neck pain.

This research addresses an important occupational health concern among hairdressers, providing insights into the incidence and impact of work-related cervical pain disorder on their neck disability. Understanding the specific challenges faced by hairdressers can help inform preventive measures and interventions to reduce the occurrence and mitigate the impact of work-related cervical pain disorder in this population.

2.0 METHODOLOGY

A cross-sectional research study was conducted on professional hairdressers working in MULTAN. Study was completed in 6 months after the approved of synopsis. Sample size is 100. Simple Random sampling technique was used. The source population consisted of every barber who worked in MULTAN. Study inclusion criteria were as follows: Prior to the study period, all hairdressers who had worked for at least a year were included. Exclusion criteria of the study were all patients of cervicle osteoarthritis, cervical spondylosis, and spinal stenosis, Whiplash, Herniated Disc and TB. Neck disability index was used as an outcome measure. Questionnaires were distributed to the participants and their responses were recorded. Data was manually, coded, and entered into SPSS version 21 software for analysis. Results were described using frequency distributions, percentages, means, and standard deviations.

3.0 FINDINGS

Descriptive Statistics

Descriptive statistics showed that, the mean age of the students that participated in the study was 2.8 ± 1.223. The age range of the students was 45 years with maximum and minimum value years respectively. Among 100 Hairdressers 12% work 8 hours, 9% work 9hrs, 54% work 10hrs, 20% work 11hrs, and 5% work 12hrs per day.
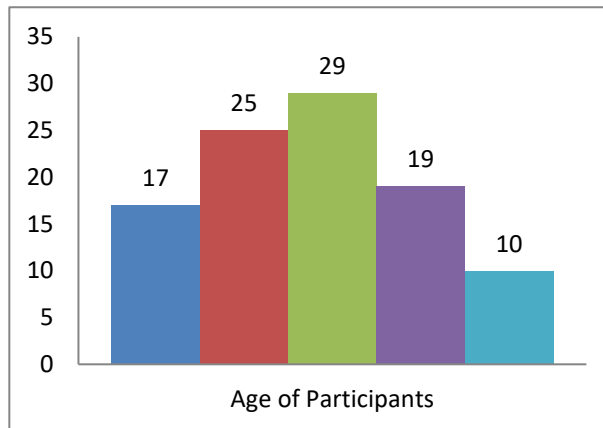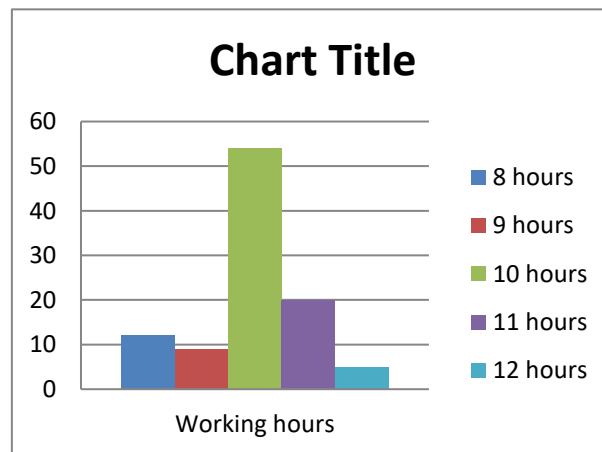

Figure 1: Age of Participants

Figure 2: Working Hours

Inferential Statistics

Neck disability index was used as an outcome measure to collect data. Table 1 showed the responses of participants on neck disability index (NDI). On the question of intensity of pain, among 100 Hairdressers 28% shows no pain, 28% shows mild pain, 25% shows Moderate pain comes & goes, 14% shows Moderate pain not very much, 4% shows severe pain comes & goes, 1% shows severe pain & not very much. On the question of personal care, 39% responded look after myself without pain Category, 29% are in look after myself causing extra pain, 19% are in painful to look after myself, 12% are need some help, 1% do not get dressed, wash difficulty. On the question of Lifting in NDI, 28% marked lift heavy weights without pain, 35% lift heavy

weights causing pain, 15% lift heavy weights from table with positioning, 12% lift light to medium weights, 8% lift very light weights and 2% responded lift very light weights. On the question of reading, 27% responded read without pain, 34% read with slight pain, 28% can read with moderate pain, 7% cannot read with moderate pain, 3% cannot read with severe pain and 1% cannot read at all. Among 100 Hairdressers, 15% responded with no headache, 32% slight headache infrequently, 28% are with moderate headache, 20% with moderate headache frequently, and 5% marked severe headache frequently. 27% participants showed no difficulty in concentration, 33% slight difficulty, 22% are in fair difficulty, 10% lot of difficulty, 3% are with great deal of difficulty, and 5% cannot concentrate at all. On the question of work, among 100 Hairdressers, 37% do work as they want to, 29% do ususal work not more, 20% do most work, but no more, 8% cannot do usual work, 6% hardly do any work. Among 100 respondents, 25% drive with no pain, 32% drive with slight pain, 21% drive with moderate pain, 14% not drive with moderate pain, 6% hardly drive with severe pain, 2% not drive at all. 19% participants responded no sleep trouble, 40% slight disturbed, 23% mildly disturbed, 8% moderate disturbed, 7% greatly disturbed and 3% showed complete disturbed. While doinf recreational activities, 41% hairdressers engaged with no pain, 26% engaged with some pain, 19% engaged in most not all, 8% engaged in few, 4% hardly engaged,2% cannot engaged at all.

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Table 1: Neck Disability Index

Intensity of pain	No pain	Mild pain	Moderate pain comes & goes	Moderate pain & not very much	Severe pain comes & goes	Severe pain & not very much
	28%	**28%**	**45%**	**14%**	**4%**	**1%**
Personal care	Look after myself without pain	Look after myself causing extra pain	Painful to look after myself	I need some help	I do not get dressed,wash difficulty	
	39%	**29%**	**19%**	**12%**	**1%**	
Lifting	Lift heavy weights without pain	Lift heavy weights causing pain	Lift heavy weights from table with positioning	Lift light to medium weights	Lift very light weights	Cannot lift/carry anything
	28%	**35%**	**15%**	**12%**	**8%**	**2%**
Reading	Read without pain	Read with slight pain	I can read with moderate pain	I cannot read with moderate pain	I cannot read with severe pain	I cannot read at all
	27%	**34%**	**28%**	**7%**	**3%**	**1%**
Headache	No headache	Slight headache infrequently	Moderate headache infrequently	Moderate headache frequently	Severe headache frequently	
	15%	**32%**	**28%**	**20%**	**5%**	
Concentration	No difficulty	Slight difficulty	Fair difficulty	Lot of difficulty	Great deal of difficulty	Cannot concentrate at all
	27%	**33%**	**22%**	**10%**	**3%**	**5%**
Work	Do work as I want to	Do usual work,not more	Do most work,but no more	Cannot do usual work	Hardly do any work	
	37%	**29%**	**20%**	**8%**	**6%**	
Driving	Drive with no pain	Drive with slight pain	Drive with moderate pain	Not drive with moderate pain	Hardly drive with severe pain	Not drive at all
	25%	**32%**	**21%**	**14%**	**6%**	**2%**
Sleeping	No sleep trouble	Slight distrubed	Mmildly distrubed	Moderate distrubed	Greatly distrubed	Complete distrubed
	19%	**40%**	**23%**	**8%**	**7%**	**3%**
Recreation activity	Engaged with no pain	Engaged with some pain	Engaged in most not all	Engaged in few	Hardly engaged	Cannot engaged at all
	14%	**26%**	**19%**	**8%**	**4%**	**2%**

Total Score of Neck Disability Index

Figure 3 showed that, 17% participants are in no disability, 44% are in mild disability, 33% are in moderate disability, and 6% are in complete disability.
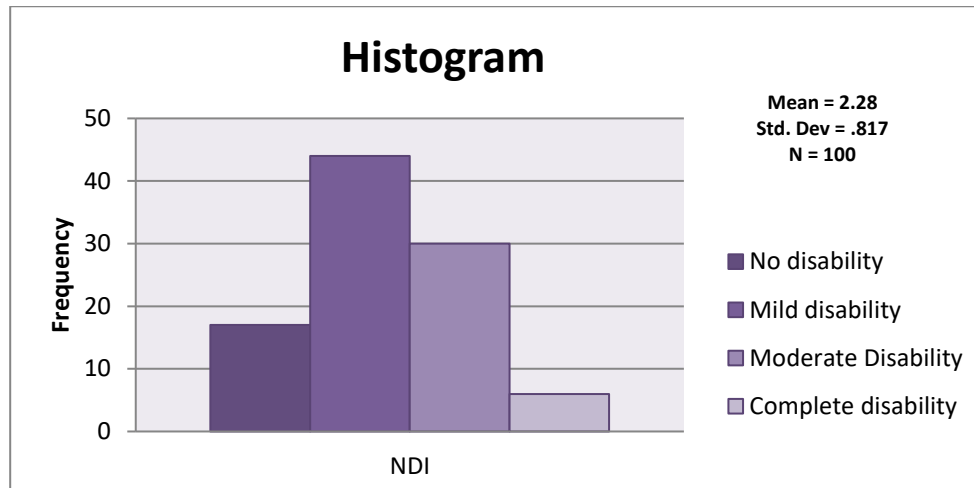

Figure 3: Histogram of NDI

Discussion

The goal of research was to identify the prevalence of neck pain among hairdressers. 100 hair stylists in Multan were included to gather the data. To investigate the prevalence of neck pain among hairdressers, NDI questionnaire were used. Version 21 of the SPSS program was used for the analysis.

In analysis the prevelance of neck pain were positive in barbers, Almost half of the population agreed of there neck pain related questions. Remaining were uncertain and disagree. Similarly the cost effectiveness items showed that answers from more than half population were positive, remaining were uncertain and disagree. Results of the questions under the heading time and energy were neutral. Equal population was agree, uncertain and disagree. Similarly, almost all therapeutic potential items were positive, although some questions were responded neutrally.

These findings are in line with previous research on neck pain in workers who also experienced mechanical and psychological demands at work (Aptel et al., 2002), but disappointingly no research papers specifically examining hairdressers were located for comparison.

The prevalence of Neck pain among the hairdressers was observed to be 17% are in no disability, 44% are in mild disability, 33% are in moderate disability, and 6% are in complete disability.

A high prevalence of 71% was found in the study by (Mussi & Gouveia, 2008) on the prevalence of WMSDs among Brazilian hairdressers. According to the Bureau of Labour Statistics, there was a high incidence of WMSDs, particularly pain in the lower back (LBP), in various occupational groups, which led to significant financial losses for both people and communities as a whole (Bonfiglioli et al., 2022).

According to the findings reported by Mussi and Gouveia et al., Brazilian hairdressers frequently experience musculoskeletal issues, with the shoulders being the most commonly affected body part, followed by the neck & back (Mussi & Gouveia, 2008).

The prevalence of the WMSDs and age were significantly correlated, indicating that the prevalence increases with age among hairdressers. This could be the result of age-related degenerative changes that were aggravated by excessive stress put on the different body parts. According to Fang et al., the ageing effect may be one of the contributing factors for muscle-related problems in Taiwanese hairdressers (Fang et al., 2007).

Years of job exposure and the frequency of WMSDs in those people who took part in the research were significantly correlated. This endorses the research findings of Mussi and Gouveia, who found that the length of hairdressers' job involvement was one of the contributory elements linked to the development of WMSDs in this population (Mussi & Gouveia, 2008).

Additionally, there was a strong correlation in the number of hours participants spent working while standing and the frequency of musculoskeletal problems.

Despite the drawbacks of a cross-sectional study and the absence of a clinical examination of the study participants, the reported symptoms are a reliable predictor of the morbidity that this group of individuals' experiences. Additionally, the ergonomic evaluation of the workplace helped to identify the occupational element most likely to be linked to the emergence of WRMDs in hairdressers.

Based on these findings and the wide distribution of WRMDs, we believe it's crucial to share general suggestions for WRMD prevention with both professional hairdressers and salon owners, including guidance on the proper selection of furniture, equipment, and work instruments environmental factors, workplace size and work psychological aspects.

4.0 CONCLUSION AND RECOMMENDATIONS

Conclusion

From the above study it is concluded that work related Neck pain among Hairdressers was significantly positive. It has been discovered that a number of occupational factors, including biomechanical strain, organizational factors, psychosocial factors, and longer employment periods in the industry exceeding 15 years, are linked to the development of neck pain in hairdressers.

Limitations

- Time bound.
- Small sample size, so results cannot be generalized to the population.
- In this study attitude was measured though awareness could also be studied

Recommendations

The following are the main recommendations derived from the study:

- It is suggested to use a random sampling technique instead of convenience sampling in future research to enhance the generalizability of the findings.
- Considering that the study had a short duration, it is advisable to allocate a longer time frame for conducting future studies to obtain a more comprehensive understanding of the topic.

- The current study had a relatively small sample size. Therefore, it is recommended to increase the sample size in future research to enhance the statistical power and reliability of the results.

- The study only focused on specific areas within the Multan city area, which may limit the representativeness of the sample. Therefore, it is suggested to expand the study to include hairdressers from various regions in Pakistan to ensure broader applicability and generalizability.

- To ensure the generalizability of the findings, it is strongly recommended to include hairdressers from different parts of Pakistan in future studies. This will provide a more comprehensive understanding of the prevalence and factors associated with neck pain in the hairdressing profession on a national scale.

- Physiotherapy campaigns should be conducted to raise awareness among hairdressers.

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