

# Frequency of Upper Back Pain and its causes among Female Beauticians in Islamabad Pakistan

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## Author's Contribution

<sup>2,3 & 4</sup>Conception and design, Collection and assembly of data, Analysis and interpretation of the data, <sup>1&3</sup>Critical revision of the article for important intellectual content, Statistical expertise <sup>1&3</sup>Final approval and guarantor of the article.

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## A B S T R A C T

**Background:** Upper back pain is a major complaint of female beauticians and only poor posture is considered as a serious cause of upper back pain.

**Objectives:** To find out the frequency of upper back pain and its causes in female beauticians.

**Methodology:** Descriptive cross-sectional study was done on 200 female beauticians through convenient sampling technique data was collected through a semi-structured questionnaire including closed ended questions regarding pain and its causes by using VAS (Visual Analogue Scale), SPADI (Shoulder pain and disability Index), NDI (Neck Disability Index) as a tool ethical approval was taken from ethical review committee of Islamabad federal college. Written informed consent from the participants was taken before filling up each questionnaire. The analysis was done by using SPSS 21.

**Results:** Out of 200 female beauticians with age of mean + SD 29.06 + 5.62, total body mass index were observed as 79 (39.5%) had normal BMI, 67(33.5%) had overweight, working hours had 94 (47%) worked for 7-9 hours, 84 (42%) worked for 10-13 hours, worst pain was 37 (18.5%), 61 (30.5%) had severe pain, rounded shoulder and forward head posture was 150 (75%), shoulder Pain and disability was 74 (37%) while neck disability was 69 (34.5%).

**Conclusion:** It is concluded that the frequency of moderate to severe type of upper back pain and disabilities of neck and shoulder was higher in beauticians. Most obvious causes in beautician were overweight, poor posture and prolong standing as well as duty hours.

**Keywords:** Disability, Female Beauticians, Thoracic-Cervical Pain, Upper Back Pain

## Introduction

Upper back pain is normally distress that begins or comes from the center of back, up through and crosswise over the shoulders. The upper back (thoracic spine) is considerably more firm than the neck (cervical spine) and low back (lumbar spine). In this manner, upper back pain is less common in contrast with lower back pain.<sup>1</sup> The thoracic spine gives support to the rib cage and secures organs inside the chest so it is less prone to pain as compared low back. A portion of the primary causes of upper back pain are poor posture, inappropriate lifting, carrying a heavy backpack, injury/damage, infection, and osteoporosis.<sup>2</sup> Respiratory

and musculoskeletal issues, for example, elbow, shoulder and back pain are higher in beauticians as compared to office workers. These musculoskeletal issues were related with manual taking care of; prolong standing, extreme shoulder movements, and awkward body posture.<sup>3</sup>

In India, the frequency of upper back pain is 20% in beautician yet generally included is young age 15-35 years of individuals while 42% of individuals have herniated disc in their cervical and upper back and expanding step by step.<sup>4</sup>

Work related Musculoskeletal Disorders (WMSDs) in the hairdressing occupation have expanded fundamentally over the past years. Beautician experiences the illness effects of pain in various sites of their body depending on the type of their job.<sup>5</sup> Examine how the shoulders are adjusted forward and the upper back is excessively slouched. The skull tilts back so as to keep the eyes forward. This is standard poor posture. Health experts may toss around specialized terms like "thoracic kyphosis," "upper crossed" or "bear joint brokenness" that can be meant poor shoulder posture.<sup>6</sup> To get specialized and separate the skeletal mechanics of this position the shoulder bones are separate from the spine; the humerus (upper arm bones) are placed ahead and are inside pivoting in their attachment; the pectorals, rotator cuff muscles and sub-scapulars are turning out in a shortened position; and the spine isn't fixed, making for an extremely moveable head.<sup>7</sup> This is an awkward position for the body. A portion of the signs related with poor shoulder position, for example, Neck and spinal pains and irritations, Tension migraines, Fatigue, Nerve impingements, Limited range of movement in recreational center/sport/work out.<sup>8</sup>

There are many causes of upper back pain in beauticians as the most problematic or most injurious is forward head posture due to routine work or job requirement along with poor standing posture as well as continuously forward head posture for the longer time period it may convert into symptomatic pain and later on it convert into upper cross syndrome some time it may cause the Neurogenic headache, cervical nerve entrapment and due to this nerves compression, muscular performance can be compromised.<sup>9</sup> Further more females are more prone to develop upper back pain due to low Hb level due to improper intake or diet, pregnancy, menstrual periods and low level of physical activity. Just because of the use of untrained upper limb muscles as they are busy in their hectic routine of life like household work along with job work and they don't have any awareness regarding muscular strength or proper posture to decrease the abnormalities related to work.<sup>10</sup> This study would be helpful to find out the frequency of upper back pain among female beauticians and it would also be effective for further treatment opportunities and awareness to reduce the percentage of upper back pain

by proper physical therapy or postural correction and make this profession symptom free and safe work zone for the better performance.

## Methodology

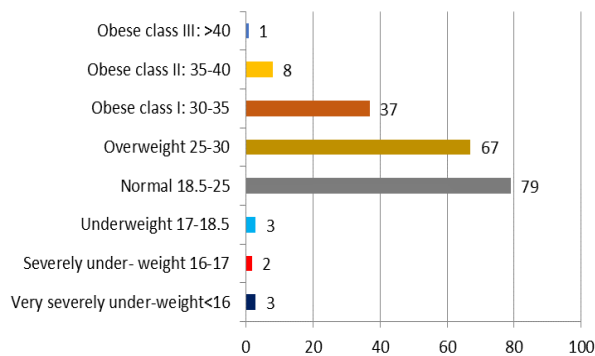
A cross sectional study was done on 200 female beauticians by convenient sampling technique. The sample size was calculated by using Yamane formula with 95% of the confidence interval:  $n = \frac{N}{1+N(e)^2}$ , N: total population of beauticians in Islamabad was found to be 400 and  $e=0.05$  with a confidence interval of 95%. Putting values in above formula then sample size:  $n = \frac{400}{1+400(0.05 \times 0.05)}$   $n = 200$ . (12) The duration of the study was 6 months from Jan 2019 to Jun 2019. The data was collected from various beauty parlors and salons in Islamabad. Ethical approval was taken from the ethical review committee of Islamabad federal college. Written Informed consent from the participants was taken before filling up each questionnaire. Females with 20 to 40 years of age who had more than 1 year of work experience in this field with more than 8 duty hours were included while females who had neurological disorders and history of trauma were excluded. Semi structured questionnaire was used to collect data from patients by using work related questions, visual analogue scale, shoulder pain and disability index (SPADI) and neck Disability Index (NDI) as a research tool, data was analyzed by using SPSS 21 version.

## Results

Out of 200 female beauticians with age of mean  $\pm$  SD  $29.06 \pm 5.62$ , 63 (31.5%) were between age group of 26-30, 60 (30%) were in 20-25, 44(22%) participants were in between 31-35 age groups and 16.5% of participants lie in 36-40 age group. According to BMI it was found that frequency of 79 (39.5%) had normal BMI values, 67(33.5%) were overweight, while 37 (18.5%) had fallen in obese class I. (Figure. 1)

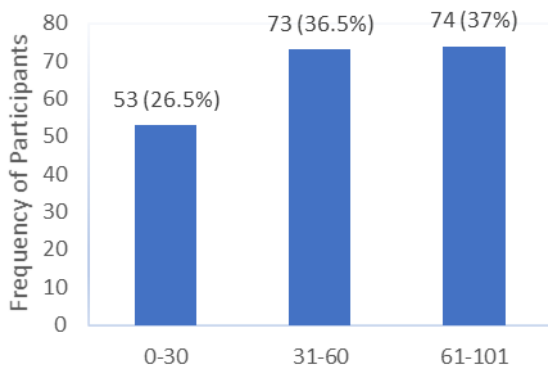
The working hours of participants during duty were 94 (47%) had worked for 7-9 hours. About 84 (42%) worked for 10-13 hours and 22(47%) were worked for 4-6 hours. Standing hours of participants during duty was 38 (19%) for 3-5 hours, 116 (58%) for 6-8 hours and 46 (23%) for 9-12 hours. Rounded shoulder and forward head posture were observed 150 (75%), straight shoulder

and the forward head was 26(13%) and 24(12%) had normal posture.



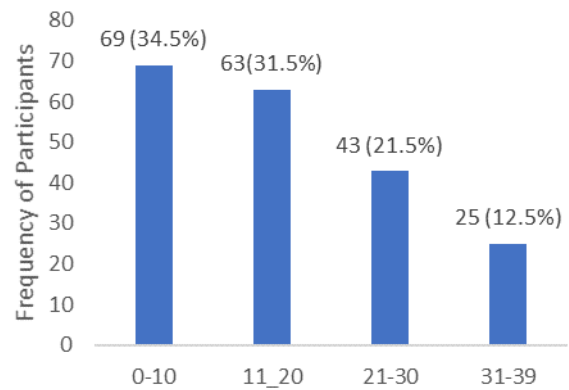
**Figure 1. Shows that the frequency and percentage of Body Mass Index (BMI) of Participants.**

Female beauticians report shoulder pain as 74(34%) had severe pain and disability level, 73(36.5%) had moderate while only 53(26.5%) had least symptoms of disability and pain. That shows severity of shoulder symptoms were found abundantly among beauticians. (Figure 2)



**Figure 2. Shows the graphical representation of the percentage and frequency of Shoulder Pain and Disability Index (SPADI) of Participants**

Similarly, Neck Disability index shows 69(34.5%) were with mild disability, 63(31.5%) had moderate, 43(21.5%) had severe while 25(12.5%) were found complete disability. (Figure 3) Visual analogue scale scoring shows that female beauticians with severe pain were 61(30.5%) and 63 (31.5%) had moderate type of pain while rest of details are given in table I.



**Figure 3. Shows the graphical representation of the percentage and frequency of Neck disability index (NDI) of Participants.**

**Table I: Shows that the percentage and frequency of pain among beauticians.**

VAS	Frequency (%)
No pain	8 (4%)
1-3: Mild	31 (15.5%)
4-7: Moderate	63 (31.5%)
8-9: Severe	61 (30.5%)
10: Worst	37 (18.5%)
Total	200

## Discussion

Cervical and thoracic regions are involved in the upper back. Upper back pain is the most obvious complaint of beauticians. The main purpose of this study was to determine the prevalence of upper back pain in beauticians. According to results total, 200 female beauticians were found with upper back pain. The upper back consists of cervical and thoracic regions i.e., shoulder and neck. It was observed High BMI level was an indication of upper back pain. Most of the women had normal BMI but they had upper back pain as 79(40%) participants had normal BMI with symptoms of upper back pain out of 200 participants however 67(34%) were with overweight. A study was done by Aweto HA, Tella BA et.al. In 2015 May and they concluded that the mean age, height, weight, and body mass index (BMI) of the participants was  $32.5 \pm 4.9$  years,  $1.75 \pm 0.12$  m,  $65.5 \pm 9$  kg, and  $24.29 \pm 1.9$  kg/m<sup>2</sup> respectively. The point prevalence of the WMSDs among participants was 81% as this study strongly correlates with the recent study.<sup>13</sup>

Working hours were directly proportional to upper back pain i.e., the more working hours, the higher upper back

pain. The current study showed that participants who worked for 7-9 hours had complaints of upper back pain. The results from the study show that all of the hairdressers reported spine discomfort, followed by discomfort in the shoulders (83%), hands and wrists (43%), and lower limbs (30%). The main causes of these symptoms are the standing posture throughout the workday, repetitive movements and the maintenance of high upper limbs during the prolonged time.<sup>14</sup>

During work, continuous standing hours more than 3-5 hours pay attention to upper back pain. 58 percent (n=116) of people had more chances to have upper back pain who worked for at least 6-8 hours. A previous study also concluded that more than half of the hairdressers were suffering from neck and back discomfort and about one-third of them suffering from shoulder discomfort, so modifying their work positions were necessary.<sup>15</sup>

This study shows less symptoms of the cervical region as compare to the shoulder. Most of the beauticians had pain in their shoulder and upper quadrant region because of their posture. A study was done by Bradshaw L, Harris-Roberts J et.al. In 2011 and concluded that Hairdressers reported significantly higher levels of musculoskeletal problems, including work-related shoulder pain (OR 11.6, 95% CI 2.4–55.4), work-related wrist and hand pain (2.8, 1.1–7.6), work-related upperback Pain (3.8, 1.0–14.9), work-related lower back pain (4.9, 1.5–15.9) and work-related leg/foot pain (31.0, 3.8–267.4) results shows an obvious correlation with the current study.<sup>14</sup> Same like above another study was done in 2010 by Wahlström J, Mathiassen SE et al and concluded that Hairdressers might be are at greater risk of developing musculoskeletal disorders especially in shoulders and neck because of a substantial occurrence of overhead arms elevation, particularly during CT. similarly, we did not figure out reasons to categorize hairdressing as a job with little bit postural deviation. Posture can change even within days in hairdressers was in the same order of magnitude as that with hairdressers. The exposure contrast between CT and AT for variables proves that elevated arm postures show that a simple task-based approach to calculating job exposure could be effective.<sup>17</sup> Awareness program should be done on therapeutic management. Future

studies should be done on a greater scale to find out factors associated with the highly increasing rate of upper back pain along with other musculoskeletal issues.

## Conclusion

It is concluded that the frequency of moderate to severe type of upper back pain and disabilities of neck and shoulder was higher in beauticians. Maybe because in beautician were overweight, wrong posture and prolong standing as well as duty hours.

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