

Postural discomforts faced by female employees in beauty parlours

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■ **ABSTRACT :** Beauty parlour employees provide services to the public putting their own body at risk. They work in awkward posture and are also exposed to several chemicals. Due to improper posture and repetitive task, they may develop several musculoskeletal discomforts like Cumulative Trauma Disorders (CTDs), Repetitive Strain Injury (RSI), Repeated Motions Injury (RMI) and Occupational Overuse Disorders (OODs) (Fang *et al.*, 2007). Their work demand prolonged standing posture which contributes to numerous health effects such as work-related musculoskeletal disorders, chronic venous insufficiency, preterm birth and spontaneous abortion, and carotid atherosclerosis. However, those injuries can be minimized through application of engineering and administrative controls (Halim and Omar, 2011). In the light of above, present study had been conducted to analyse the work pattern and identify most frequent activity performed by the beauty parlour employees and conduct postural analysis of the most frequent activity. For conducting the study, 10 beauty parlours were selected near the area of research in Ludhiana and one respondent was randomly selected from each parlour. Results revealed that the employees were working for an extended period of 51 working hours per week which is much more than the recommended value of 40 hours per week (ILO, 1962). Among the different services offered, the most frequent was threading of eyebrows and upper lips, followed by waxing, hair cutting, facial, face cleanup and hair spa. Threading being the most frequent activity was selected for further postural analysis with the help of REBA. Results of REBA analysis revealed that the activity was highly risky, investigation was needed and change should be implemented.

■ **KEY WORDS:** Beauty parlour, Female employees, Occupational health risks, REBA, WMSD

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Beauty parlour industries are growing rapidly in rural as well as urban areas of India. It is a skill based profession and both males and females are attracted towards it. The common tasks performed at the parlour include facial cleansing and treatments, body and face massage, facial and body hair removal, skin/

nails/body care, applying makeup, hair treatments and cutting, etc. These tasks requires a large amount of repetitive work along with continuous standing as well as twisting and bending of spine. Awkward posture, lifting, forceful movement and manual work at rapid rate contribute to musculoskeletal disorder (Singh, 2012).

Musculoskeletal discomforts are developed when attempts are made by the workers to 'fit the man to the job' rather than to 'fit the job to the man' (Parimalam *et al.*, 2006). Furthermore, workers in the salons can be exposed to the chemical irritants, sensitizers, carcinogens, reproductive hazards, infectious agents, ergonomic and other physical hazards (Mayer *et al.*, 2015). They also use various tools and equipment like steam equipments, wax heaters, medicinal and decorative cosmetics, scissors, hair treatment equipments, threads, pluckers, etc. without any personal protective equipments which again puts them to the risk of injuries and accidents. A high prevalence of work-related musculoskeletal disorders has been recorded among workers who are exposed to manual labour; work in unusual and restricted postures, repetitive and static work, vibrations, and poor psychological and social conditions (Burdorf and Sorock, 1997). Some of the Work related Musculoskeletal Disorders (WMSDs) that are generally observed in these industries are Cumulative Trauma Disorders (CTDs), Repetitive Strain Injury (RSI), Repeated Motions Injury (RMI) and Occupational Overuse Disorders (OODs) (Fang *et al.*, 2007). Kesavachandran *et al.* (2006) conducted a study on beauty parlour workers in Lucknow and found that the workers were more prone to respiratory morbidity and lung function abnormalities than the control group. Study also showed that Bronchial obstruction among female workers (17.9%) was more prevalent than male workers (1.42). A study on the employees involved in hair dressing occupation reveals that 91.7 per cent of subjects reported shoulder discomfort as the most frequent problem followed by discomfort in the lower back (83.3%) and in the neck region (75%) (Fang *et al.*, 2007). Another study reported that most frequent problems among the nail shop technicians of nail salon were nose irritation, followed by headache, and throat irritation. Among eyes and skin problems, 92 per cent of respondents complained eye irritation. In musculoskeletal symptoms, workers reported pain or discomfort in shoulders and neck (Park *et al.*, 2014).

The application of ergonomic principles would help to increase machine performance and productivity, but mostly help human operator to be comfortable and secure (Maldonado-Macias *et al.*, 2009). Performing jobs in prolonged standing posture have contributed numerous health effects such as WMSDs, chronic venous

insufficiency, preterm birth and spontaneous abortion, and carotid atherosclerosis. However, those injuries can be minimized through application of engineering and administrative controls (Halim and Omar, 2011). The REBA is a postural analysis tool sensitive to musculoskeletal risks in a variety of tasks and assessment of working postures found in health care and other service industries (Hignett and McAtamney, 2000). The workers of small scale enterprises are under moderate to high risk of musculoskeletal disorders as determined from REBA and RULA risk level (Ansari and Sheikh, 2014). The practice of combination of static and dynamic standing working system, and by varying leg position while standing assist in reducing discomfort from working in standing position, that did not apply to all standing operators (Taha *et al.*, 2008). Modifications can be done at the workplace and work pattern of the beauty parlour employees to provide them a comfortable working environment.

Therefore, in the light of above, the present study had been planned with the following objectives:

Objectives:

- To analyse the work pattern of beauty parlour employees and identify the most frequently performed activity.
- To analyse the posture of the most frequent activity performed by the beauty parlour employees.

■ RESEARCH METHODS

Present study was conducted in the Ludhiana city as per the convenience of the researcher. Ten beauty parlours were selected randomly and from each parlour one employee belonging to the age group 20- 30 years were selected. The study was conducted in two phases as follows:

Phase I:

Self designed questionnaire was used to assess the health status of the employees and to find out the most frequent activity performed by them.

Phase II:

The low cost tools like REBA and risk assessment scale were used to perform the postural analysis of the selected activity.

RESEARCH FINDINGS AND DISCUSSION

Table 1 depicts that the average women working in the parlour were having the age of 25 years, weighing 52 kg and having a height of 153.8 cm. On an average they spent 8.5 hours on the parlour among which they worked continuously for 4.9 hours without any break. It is recommended that one should work for a maximum of eight hours a day (ILO, 1930). A slogan of eight hour’s labour, eight hour’s recreation and eight hour’s rest given by Owen, 1817 depicts that one should never work more than 8 hours but on an average the parlour workers work for 8.5 hrs and in rush months it even goes above 10 hours which is remarkably high and of due consideration.

Parameters	Mean ± SD
Age	25.2 ± 3.2
Weight	52.5 ± 6.2
Height	153.8 ± 8.5
Total time spent	8.5 ± 1.0
Rush hour	4.9 ± 1.1

Table 2 displays the workload that they actually faced and the way how they used to handle it. Maximum of them (70%) got only one holiday in a week making a total of 51 working hours per week that is much more than the recommended period of 40 hours per week (ILO, 1962) which is again alarming. According to the respondents the busiest hour of the day was evening time. At that time they had to work in a stretch for several hours without taking any rest. To manage their workload, most of them (70%) used the strategy of work rotation by mutual understanding among the co-workers. But this was only possible when there were customers of different requirements. When all the customers over there, were to avail same service then this strategy didn’t worked.

Category	Variables	Frequency	Percentage
Holidays per week	1	7	70.0
	2	3	30.0
Busy hours of the day	Morning	0	0.0
	Afternoon	4	40.0
	Evening	6	60.0
Strategies to manage workload *	Work rotation	7	70.0
	Exercise	2	20.0
	Nothing	3	30.0

*Multiple responses

Very few (20%) used to do some short exercises to get rid of fatigue whereas around one third of them were doing nothing to manage their workload.

Table 3 portrays the frequency of different services provided by parlour workers. The responses of all the parlour workers were recorded on the basis of five point continuum which was further calculated to find out the weighted mean score (WMS) for each activity. Among the different services, the most frequent activity was threading of eyebrows and upper lips (5.0) followed by waxing (4.2), hair cutting (3.7), facial massage (3.7), face cleanup (3.6), hair spa (3.5), hair colouring (2.5), hair straightening (1.9), applying makeup (1.9), Manicure/ pedicure (1.6) and body massage (1.1). Rest of the activities were performed very rarely therefore were excluded from the study.

Activity	Weighted mean score (WMS)
Threading of eyebrows	5.0
Threading of upper lips	5.0
Hair cutting	3.7
Hair spa	3.5
Hair straightening	1.9
Hair colouring	2.5
Waxing	4.2
Face cleanup	3.6
Facial massage	3.7
Body massage	1.1
Manicure/ pedicure	1.6
Makeup	1.9

Since threading was the most frequent activity performed by all the parlour workers, hence it was

Analysis Parameters	Scores
Posture score A (neck+trunk +leg+adjust)	4
Load score	0
Score A	4
Posture score B (upper arm+adjust+lower arm + wrist + adjust)	6
Coupling	3
Score B	9
Score C	8
Activity score	1
Final score	9
Action required	High risk, investigate and implement change

Table 5 : Risk factors leading to MSDs among respondents for threading activity (n=10)

Body parts	Identifying symptoms of WMSDs				
	Pain	Numbness	Stiffness	Tingling	Weakness
Neck	2.4	0	0	0	0
Shoulders	2.3	0	0	0	2.2
Upper arms	2.2	0	0	0	2.4
Lower arms	1.4	0	0	0	0
Wrists	2.3	0	0	0	0
Palms	2.3	0	2.4	0	0
Fingers	2.3	2.3	1.9	0	0
Upper back	2.4	0	0	0	0
Mid back	2.3	0	0	0	0
Lower back	2.1	0	0	0	0
Buttocks	0	0	0	0	0
Thighs	1.9	0	0	0	0
Legs	2.2	0	0	0	2.2
Ankles	0	0	0	0	0
Feet	2.2	0	0	2.1	0

selected for the second phase of the study. Ergonomic evaluation of threading activity was performed for the same sample with the help of low cost tool named Rapid Entire Body Assessment (REBA). Table 4 reveals the results of REBA for the threading activity. The final REBA score (9) of the threading activity depicted that it involved high risk as a result of which investigation and changes were needed.

Table 5 indicated the risk factors associated with the threading activity that would develop into musculoskeletal disorder if left untreated and unattended. The professionals were asked for different discomforts faced after performing the threading activity in their busiest hours. After performing the activity they faced certain pain, numbness, stiffness, tingling sensation or weakness in different body parts. The highest degree of pain was felt in neck and upper back (2.4) followed by shoulders, wrists, palms, fingers and mid back (2.3), upper arms, legs and feet (2.2) and low back (2.1). Numbness was felt in fingers (2.3), stiffness in palms (2.4) and fingers (1.9), tingling sensation in feet (2.1) and weakness in shoulders (2.2), upper arms (2.4) and legs (2.2).

Conclusion :

The female beauty parlour employees worked for an average 51 hours per week which is much more than the recommended period of 40 hours per week (ILO, 1962). The major activity they performed daily was the threading of eyebrows and upper lips. The REBA

analysis depicted that the threading activity involved high risk, needed investigated and change. Further the risk assessment was done with the help of scale developed on three point continuum which revealed that very high risk was associated with different body parts as pain was felt in the neck and upper back (2.4) followed by shoulders, wrists, palms, fingers and mid back (2.3), upper arms, legs and feet (2.2) and low back (2.1). Numbness was felt in fingers (2.3), stiffness in palms (2.4) and fingers (1.9), tingling sensation in feet (2.1) and weakness in shoulders (2.2), upper arms (2.4) and legs (2.2). Therefore, it can be concluded that beauty parlour workers are prone to develop work related musculoskeletal discomforts if left unattended. Certain tools should be developed to reduce their repetitive neck flexion and extension while performing threading activity. There are many more activities like facial and body massage performed by them that needed repetitive action. Tools should be designed to reduce their discomforts while performing the repetitive and jerky tasks.

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