Occupational Dermatitis among the Hair Dressers of Selected Area of Dhaka City

Abstract

Background: Dermatitis among hairdressers has been recognized as a significant occupational health problem.

Objective: To assess occupational dermatitis among the hairdressers of selected area of Dhaka city was aim of this study.

Methodology: This was a cross sectional observational study conducted among randomly selected 116 hairdressers.

Results: Mean age was 26.69±8.565 years. Among them 65.5% had primary level of education. About 62.1% had BDT within 10000 and rest had more than BDT 20000. Mean working duration was 10.53±7.47 years. It was reported that majority 42.2% of the respondents had to serve up to ten clients per day, 26.8% served 11-15 clients and 31% had to serve more than 15 clients per day. Result found 76.7% had dermatitis lesions in their hands. Dry scaly plaque was found among 43.8% cases followed by hyper pigmentation (39.3%), erythematous plaque (11.2%) and vesicle & patch (5.6%). Lesions appeared mostly on lateral side of middle finger (71.9%), index finger (18%) and index & middle finger (10.1%). Significant association was found between dermatitis and duration of work (p<0.05).

Conclusion: Promotion of use of protective gloves among the hair dressers and further research is needed to explore the specific etiological factors of hairdresser’s dermatitis.

Keywords: Dermatitis; Hair dresser

Introduction

Occupational hand dermatitis among hairdressers has been recognized as a significant health concern [1]. Hairdressers belong to an occupational group that is commonly affected by occupational skin disease, specifically contact dermatitis, which may be allergic or irritant and, less commonly, contact urticaria. Occupational contact dermatitis predominantly affects apprentices, and atrophy is a recognized risk factor associated with a poor prognosis. Repetitive wet work leading to irritant contact dermatitis, followed by exposure to allergens and the development of allergic contact dermatitis, are the main factors contributing to occupational contact dermatitis. Once developed, it is often difficult to manage and is a cause of significant morbidity [2]. Numerous data from the medical literature show that working as a hairdresser is associated with a high risk of occupational contact dermatitis. In Europe, hairdressers rank first of all occupation groups with the highest prevalence of occupational dermatitis. It is estimated that 10-20% and even 50% of hairdressers are affected with skin disorders. Skin problems occur soon after commencing hairdressing, in the first 2 years of work, sometimes during vocational training. The most common factors contributing to skin damage include water, shampoos, detergents, conditioners, hair dyes, bleaches, permanent wave solutions and components of gloves [3]. Occupational dermatitis is a well-known problem among hairdressers, as either irritant contact dermatitis or allergic contact dermatitis, or often a combination of both. Hairdressers are exposed to extensive wet work that can cause irritant contact dermatitis, and they have daily skin contact with innumerable cosmetic products containing compounds that are known to cause contact allergy. In Britain, hairdressers and barbers are in the top three occupational groups in terms of prevalence of dermatitis [4]. Traditional and low-income hairdress/Barbers in Bangladesh carry on their existence by providing shaving and hairdressing service in the bazaar and in the street-side, commonly known as Saloon. Most of them have to use shaving cream/foam/gel and hair dressing instruments. Most of the time they keep their hand wet which may help in developing dermatitis. No such information related to occupational dermatitis among hairdressers in Bangladesh available.

Methodology

This was a cross-sectional observational study. Study was conducted among 116 hair dressers in Dhaka city. Simple random sampling technique was adopted in the study. The following steps were taken to obtain the sample:

i. 1st step: Dhaka North City Corporation has 36 wards, Ward-9 (Shewrapara) was selected by lottery system

ii. 2nd step: A list of hair dressing salons of the ward was made by road-to-road survey
iii. 3rd step: All (a total 39) hair dressing salons of the ward were included in the study.

iv. In each salon, there were 2-4 hairdressers.

All were included in this study. Data were collected from the respondents through face-to-face interview. After data collection, data were sent to the researcher, which was sorted, scrutinized by the researcher himself by the selection criteria and then data were analyzed by personal computer by SPSS version 12.0 program. Data were analyzed by descriptive statistics and inferential statistics.

Results

Table 1: Socio-demographic characteristics (n=116).

| Variables            | Number | Percentage |
|----------------------|--------|------------|
| Age Group in Years   |        |            |
| <20                  | 33     | 28.4       |
| 21 - 30              | 55     | 47.4       |
| 31 - 40              | 20     | 17.2       |
| ≥ 40                 | 8      | 6.9        |
| Mean ± SD age        | 26.69 ± 8.565 |
| Education            |        |            |
| Primary level        | 76     | 65.5       |
| Secondary level      | 40     | 34.5       |
| Marital Status       |        |            |
| Unmarried            | 56     | 48.3       |
| Married              | 60     | 51.7       |
| Monthly Income (BDT) |        |            |
| <10000               | 72     | 62.1       |
| ≥10000               | 44     | 37.9       |
| Mean ± SD income     | 10180 ± 3944 |

Results are expressed as number (%) and M ± SD.

Mean ± SD age of respondents was 26.69 ± 8.565 years. Two third of respondents (65.5%) had primary level of education. Married and unmarried was nearly equal. Mean ± SD monthly income of respondents was 10180 ± 3944 BDT.

Table 2: Distribution of the respondents by duration of work in occupation (n=116).

| Duration in years | Frequency | Percentage |
|-------------------|-----------|------------|
| <5                | 36        | 31.0       |
| 6 - 10            | 34        | 29.3       |
| 11 - 15           | 24        | 20.7       |
| ≥15               | 22        | 19.0       |
| Total             | 116       | 100.0      |

About 31% were found working in this occupation for up to five years, followed by 29.3% for 6-10 years, 20.7% for 11-15 years and rest 19% for more than 15 years.

Table 3: Distribution of the respondents by number of clients per day (n=116).

| Clients | Frequency | Percentage |
|---------|-----------|------------|
| <10     | 49        | 42.2       |
| 11-15   | 31        | 26.8       |
| ≥15     | 36        | 31.0       |
| Total   | 116       | 100.0      |

It was reported that majority (42.2%) had to serve up to ten clients and 31% had to serve more than 15 clients per day.

Table 4: Distribution of the respondents by dermatitis lesion (n=116).

| Dermatitis Lesion | Frequency | Percentage |
|-------------------|-----------|------------|
| No                | 27        | 23.3       |
| Yes               | 89        | 76.7       |
| Total             | 116       | 100.0      |

Result found that 76.7% had dermatitis lesions in their hands.

Table 5: Distribution of the respondents by clinical manifestation (n=89).

| Clinical Manifestations | Frequency | Percentage |
|-------------------------|-----------|------------|
| Dry scaly plaque        | 39        | 43.8       |
| Erythematous plaque     | 10        | 11.2       |
| Hyper pigmentation      | 35        | 39.3       |
| Vesicle & patch         | 5         | 5.6        |
| Total                   | 89        | 100.0      |

Dry scaly plaque was found among 43.8% cases followed by hyper pigmentation 39.3%, erythematous plaque 11.2% and vesicle & patch 5.6%.

Table 6: Distribution of the respondents by site of lesion (n=89).

| Site of lesion | Frequency | Percentage |
|----------------|-----------|------------|
| Index Finger   | 16        | 18.0       |
| Middle Finger  | 64        | 71.9       |
| Index & Middle Finger | 9 | 10.1 |
| Total          | 89        | 100.0      |

Lesions appeared mostly on lateral side of middle finger (71.9%).

Table 7: Association between years in occupation and development of dermatitis lesion (n=116).

| Occupation in Years | Dermatitis Lesion | Total |
|---------------------|-------------------|-------|
| No                  | 22(81.5%)         | 36(31.0%) |
| Yes                 | 14(15.7%)         | 34(29.3%) |
| Total               | 27(100.0%)        | 116(100.0%) |

Statistical significant association was found between increase of age in this occupation and development of dermatitis lesion (p<0.05).

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Discussion

Dermatitis among hairdressers has been recognized as a significant occupational health problem. To explore the occupational hand dermatitis among hairdressers the present cross-sectional study was conducted in a selected area of Dhaka city. By dermatitis lesion, the current study found that among the respondents 76.7% had lesions in their hands. Clinical features consist of scaly plaques, vesicles, hyper pigmentation and erythematous plaque. Dry scaly plaque was found among forty three percent cases followed by hyper pigmentation among forty percent cases, erythematous plaque among one-tenth cases and vesicle & patch among five percent cases. It was observed that lesions appear mostly on lateral side of middle finger (71.9%), index finger (18%) and Index & middle finger (10.1%). In the study in Taiwan [5], 83% hairdressers had occupational dermatitis and 32% had scissor induced scars or wounds. Study in UK [6] the prevalence of hand dermatitis was 38.6% and in Poland [7] it was 43.9%. Dermatitis lesion was found 15.7% among respondents who were in this occupation for up to 5 years, 32.6% among respondents who were for 6-10 years, 27.0% among respondents who were for 11-15 years and 24.7% among respondents who were in this occupation for more than 15 years. Statistically it was found significant (p<0.05). This finding was found similar with the study conducted by Stovall et al. [8], where they found the association between the occurrence of dermatitis and a medically confirmed history of allergy was highly significant (p<0.001) and decreases with increasing numbers of years in hairdressing, indicating perhaps that highly susceptible individuals leave their jobs. Significant factor in increasing the dermatitis risk was young age observed in a study by Uter et al. [9] in Germany. The progressive nature of contact dermatitis in hairdressers was confirmed in a study by Holm and Veierod [10] who found a higher prevalence in experienced hairdressers than in trainees. Majoie et al. [11] also found that the prevalence of dermatitis increased with the time of exposure.

Conclusion

The current study concludes that three fourth of respondents had dermatitis lesions in their hands. Dry scaly plaque was common. Development of dermatitis lesion was statistically significant with duration of working age. Personal protective equipment should be used.

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