

# 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 hair dressers of selected area of Dhaka city was aim of this study.

**Methodology:** This was a cross sectional observational study conducted among randomly selected 116 hair dressers.

**Results:** Mean age was 26.69±8.565years. 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±7.47years. 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

Volume 2 Issue 2 - 2015

MD Saiful Islam,<sup>1</sup> Mesbah Uddin Ahmed,<sup>2</sup>  
Abu MD Ahsan Firoz,<sup>3</sup> Muhammad Foyez  
Ullah,<sup>4</sup> Rubaiyat-E- Mortaz,<sup>5</sup> M H Faruquee<sup>6</sup>

<sup>1</sup>Medical Officer, Clinical Pathology Department, BSMMU

<sup>2</sup>MS in Microbiology, Bangladesh University of Health Sciences (BUHS)

<sup>3</sup>Medical Officer, Dermatology & Venereology Department, BSMMU

<sup>4</sup>Research Assistant, Clinical Pathology Department, BSMMU

<sup>5</sup>Assistant Professor, Department of Public Health, State University of Bangladesh

**Correspondence:** Mesbah Uddin Ahmed, MS in Microbiology, Bangladesh University of Health Sciences (BUHS), Bangladesh, Tel +8801712191479, Email mesba.lab@gmail.com

**Received:** March 03, 2015 | **Published:** March 26, 2015

## Introduction

Occupational hand dermatitis among hairdressers has been recognized as a significant health concern.<sup>1</sup> 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.<sup>2</sup> Numerous data from the medical literature show that working as a hairdresser is associated with the highest 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 2years 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.<sup>3</sup> 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.<sup>4</sup> Traditional and low-income hair dresser/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 include in the study
- iv. In each salon, there was 2-4 hair dresser

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

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 (Tables 1-7).

**Table 1** Socio-demographic characteristics (n=116)

Variables	Number	Percentage
<b>Age Group in Years</b>		
<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	
<b>Education</b>		
Primary level	76	65.5
Secondary level	40	34.5
<b>Marital Status</b>		
Unmarried	56	48.3
Married	60	51.7
<b>Monthly Income (BDT)</b>		
<10000	72	62.1
≥10000	44	37.9%
Mean±SD income	10180±3944	

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

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

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

Dermatitis lesion	Frequency	Percentage
No	27	23.3
Yes	89	76.7
Total	116	100.0

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

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

**Table 7** Association between years in occupation and development of dermatitis lesion (n=116).  $\chi^2=44.211$ ;  $p=0.000$

Occupation in years	Dermatitis lesion		Total
	No	Yes	
<5	22(81.5%)	14(15.7%)	36(31.0%)
6-10	5(18.5%)	29(32.6%)	34(29.3%)
11-15	0(0.0%)	24(27.0%)	24(20.7%)
≥15	0(0.0%)	22(24.7%)	22(19.0%)
Total	27(100.0%)	89(100.0%)	116(100.0%)

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

## 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,<sup>5</sup> 83% hairdressers had occupational dermatitis and 32% had scissor induced scars or wounds. Study in UK<sup>6</sup> the prevalence of hand dermatitis was 38.6% and in Poland<sup>7</sup> it was 43.9%. Dermatitis lesion was found 15.7% among respondents who were in this occupation for up to 5years, 32.6% among respondents who were for 6-10years, 27.0% among respondents who were for 11-15years and 24.7% among respondents who were in this occupation for more than 15years. Statistically it was found significant ( $p < 0.05$ ). This finding was found similar with the study conducted by Stovall et al.,<sup>8</sup> 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.,<sup>9</sup> in Germany. The progressive nature of contact dermatitis in hairdressers was confirmed in a study by Holm & Veierod<sup>10</sup> who found a higher prevalence in experienced hairdressers than in trainees. Majoie et al.,<sup>11</sup> 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.

## Acknowledgements

None.

## Conflict of interest

The author declares no conflict of interest.

## References

- Holness DL, Nethercott JR. Dermatitis in hairdressers. *Dermatol Clin*. 1990;8(1):119–126.
- Lee A, Nixon R. Occupational skin disease in hairdressers. *Australas J Dermatol*. 2001;42(1):1–6.
- Swierczynska MK, Krycisz B, Chomiczewska D. Occupational contact dermatitis in hairdressers. *Med Pr*. 2009;60(5):377–382.
- Lind ML. Dermatitis in Hairdressers as a Problem in Chemical Control. *Ann Occup Hyg*. 2005;49(6):457–459.
- Guo YL, Wang B, Lee JY, et al. Occupational hand dermatoses of hairdressers in Tainan City. *Occup Environ Med*. 1994;51(10):689–692.
- Perkins JB, Farrow A. Prevalence of occupational hand dermatitis in U.K. hairdressers. *Int J Occup Environ Health*. 2005;11(3):289–293.
- Krecisz B, Swierczynska MK, Chomiczewska D. Dermatological screening and results of patch testing among Polish apprentice hairdressers. *Contact Dermatitis*. 2011;64(2):90–95.
- Stovall GK, Levin L, Oler J. Occupational Dermatitis among Hairdressers. *J Occup Med*. 1983;25(12):871–878.
- Uter W, Pfahlberg A, Gefeller O, et al. Hand dermatitis in a prospectively followed cohort of hairdressing apprentices: Final results of the POSH study. Prevention of occupational skin disease in hairdressers. *Contact Dermatitis*. 1999;41(5):280–286.
- Holm JO, Veierod MB. An epidemiologic study of hand eczema. Degree and pattern of eczema in affected hairdressers with and without atopic symptoms, compared with a control group of affected teachers. *Acta Derm venereal*. 1994;187:18–22.
- Majoie IML, Blomberg VBME, Bruynzeel DP. Development of hand eczema in junior hairdressers: An 8-year follow-up study. *Contact Dermatitis*. 1996;34(4):243–247.