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Skin and Venereology

The Pattern of Occupational Skin Diseases among Construction Workers in Bangladesh

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Abstract | **Original Research Article**

Objective: In this study our main goal is to evaluate the Pattern of occupational skin diseases among construction workers in Bangladesh. ***Method:*** This experimental and observational study was carried out at the tertiary medical college and hospital, from January 2017 to June 2019. Randomly 400 construction workers were selected from 50 construction areas situated in different cities in Bangladesh were selected as a study population. ***Results:*** During the study, all working fields are dirty or unhealthy and 3.50% of workers involved in wet works or washing, 20.75% In brick/stone works, 30.75% in cement works, 11.50% in metal work/welding, 15.25% in tar/pitch works, 8.00% in wood works and 10.25% in sand/mud works. Out of all skin diseases, (37.39%) patients were suffering from contact dermatitis, among which 28.15% was irritant contact dermatitis (ICD) and 9.24% allergic contact dermatitis (ACD). Other skin diseases were acne (14.29%), seborrheic dermatitis (10.92%), burn/scald (5.46%), accidental injury (7.14%), scabies (23.53%), fungal infection (Dermatophytosis/pityriasis versicolor/candidiasis) (23.53%), palmoplantar keratoderma (13.87%), lichen simplex chronicus (3.78%), pyoderma (4.20%), photodermatitis (2.52%) and urticaria (2.52 %). Among all construction workers 60% have at least one form of skin disease and rest of the workers were not found to have any skin disease. ***Conclusion:*** From the study we can conclude that, contact dermatitis is the most common and other skin diseases include fungal infection, scabies and acne. ese occupational skin diseases may be prevented by providing improved work place, protective means, health education, adequate health services and improving professional skills.

Keywords: Occupational skin diseases, dermatophytosis.

INTRODUCTION

The construction industry is one of the world's major industries. It is an essential contributor to the process of development [1]. In Bangladesh, construction sector is a rapidly enlarging but still unorganized sector. Being an unorganized sector, the workforce is at risk of developing safety and health related hazards at work. Occupational dermatoses (OCD), defined as a skin disease that would not have occurred if the patient had not been doing the work of that occupation' is one of the frequent occupational diseases [2]. Occupational skin diseases represent approximately 40% of all occupational illnesses; different percentages from one country to another are determined by the extent and the type of industrialization and also by the knowledge and experience of the physicians [3]. OCD is a significant occupational hazard in some jobs, like the construction industry. In the construction industry, various categories of workers are involved such as masons, helpers, supervisors, carpenters and painters. Among workers who contact with cement regularly, occupational dermatoses, especially contact dermatitis, has been one of the most frequently reported disorders for many years [4].

In this study our main goal is to evaluate the Pattern of occupational skin diseases among construction workers in Bangladesh.

OBJECTIVE

- To assess the Pattern of occupational skin diseases among construction workers in Bangladesh

METHODOLOGY

Type of Study

- This was anexperimental and observational study.

Place and Period of Study

- The study was conducted at the tertiary medical college and hospital, from January 2017 to June 2019.

Study Population

- Randomly 400 construction workers were selected from 50 construction areas situated in different cities in Bangladesh during the above-mentioned period were the study population.

Detailed Procedure

- In all cases, informed consent was taken. After a completephysical examination, data were recorded in a pre-designed structured questionnaire, providing a detailed job condition, personal and past dermatological history and the length of employment in the current job position. -e duration of exposure was calculated as years in occupation. -e history of atopic symptoms, both personal and familial, was also recorded. In addition, the subjects were asked about their personal work habits, use of protective gloves and the type of gloves used. We performed clinical examination with magnifying glass and woods lamp where needed.

Data Analysis

- Collected data were analysed using software SPSS (Statistical Package for Social Sciences) version 11.5 for windows. Descriptive statistics were used to analyses the data. Analysed data were presented in the form of tables and charts with due interpretation.

RESULTS

In Table-1 shows age distribution of the patients. 12 % were from age <18, 78% from age 18-45 years and 10% from age group of >45 years. The following table is given below in detail:

Table-1: Age distribution of the participants

Age (yrs)	Percentage
<18	12
18 - 45	78
>45	10

In Figure-1 shows gender distribution of the patients where most of the patients were male. The following figure is given below in detail:

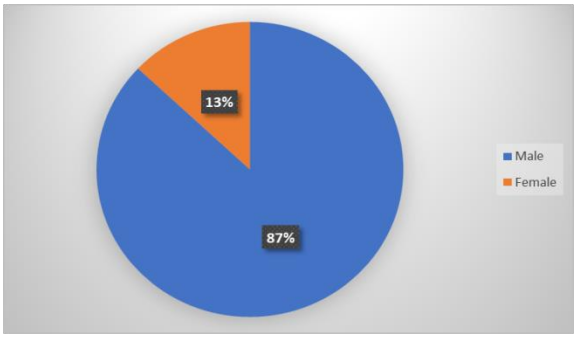

Fig-1: Gender distribution of the patients

In Table-2 shows distribution of the patients according to work where 23.75% of workers work for 8 hours, 44.25% work 8-12 hours and 32.0% work > 12 hours in a shift. The following table is given below in detail:

Table-2: Distribution of the patients according to work

Working hours per day	Percentage
8	23.75
8 to 12	44.25
>12	32
Duration of work (Year/s)	
<1	9
1 to 5	65
>5	25
Protective measure (Boot, Gloves, Apron/jacket, Googles and Sucient water) available or use	
Available or used	20
Not available or not used	80

In Table-3 shows types of works in construction in dust. All working fields are dirty or unhealthy and 3.50% of workers involved in wet works or washing, 20.75% In brick/stone works, 30.75% in cement works, 11.50% in metal work/welding, 15.25% in tar/pitch works, 8.00% in wood works and 10.25% in sand/mud works. The following table is given below in detail:

Table-3: Types of works in construction in dust

Working hours per day	Percentage
Wet work/washing	3.50
Brick/stone work	20.75
Cement work	30.75
Metal work/welding	11.50
Tar/pitch work	15.25
Wood work	8
Sand/mud work	10.25

In Table-4 shows distribution of skin diseases among construction workers. Out of all skin diseases, (37.39%) patients were suffering from contact dermatitis, among which 28.15% was irritant contact dermatitis (ICD) and 9.24% allergic contact dermatitis (ACD). Other skin diseases were acne (14.29%), seborrheic dermatitis (10.92%), burn/scald (5.46%), accidental injury (7.14%), and scabies (23.53%), fungal infection (Dermatophytosis/pityriasis versicolor /candidiasis) (23.53%), palmoplantar keratoderma (13.87%), lichen simplex chronicus (3.78%), pyoderma (4.20%), photodermatitis (2.52%) and urticaria (2.52 %). The following table is given below in detail:

Table-4

Name of skin diseases	Percentage
Irritant contact dermatitis	28.15
Allergic contact dermatitis	9.24
Contact dermatitis	37.38
Acne	14.29
Seborrheic dermatitis	10.92
Burn/scald	5.46
Accidental injury	7.14
Scabies	23.53
Fungal infection	23.53
Palmoplantar keratoderma or frictional callosities	13.87

In Figure-2 shows prevalence of skin disease among construction workers where among all construction workers 60% have at least one form of skin disease and rest of the workers were not found to have any skin disease. The following figure is given below in detail:

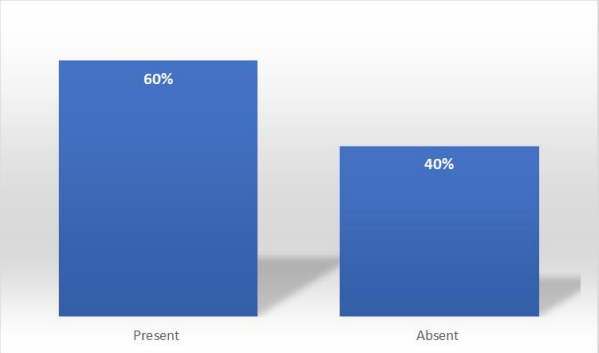

Fig-2: Prevalence of skin disease among construction workers

In Figure-3 shows distribution of sites of contact dermatitis where contact dermatitis was mostly distributed on exposed areas including hands (50%), legs (29%) and other uncovered areas (8%). Covered areas were affected in 13% cases. The following table is given below in detail:

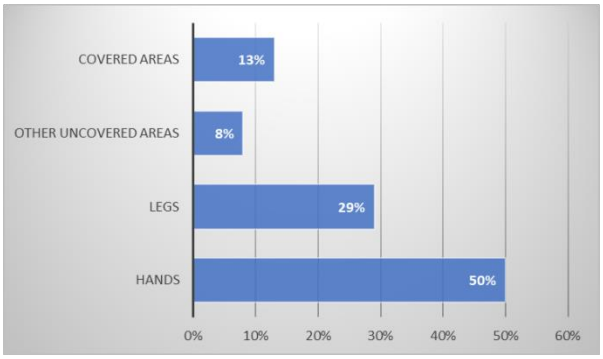

Fig-3: Distribution of sites of contact dermatitis

DISCUSSION

Rapid urbanization and industrialization have imposed a huge load of construction works worldwide, which creates different social, cultural and health impact [5].

Scarcity of water, limited availability of cleaning facilities and climatic conditions hasten the development of dermatitis in construction workers [6, 7]. In the current study among four hundred construction workers 60 % of have at least one form of skin disease. Most of the workers were involved in cement works followed by brick/stone works, tar/pitch works, metal work/welding, sand/mud works, wood work and wet works. -ese factors may contribute in the high rate of contact dermatitis here (37.39%), which is compareable with such previous studies [8, 9]. Among them irritant contact dermatitis (ICD) (28.15%), allergic contact dermatitis (ACD) (9.24 %), acne (14.29%), seborrheic dermatitis (10.92%), burn/scald (5.46%), accidental injury (7.14%), scabies (23.53%), fungal infection (Dermatophytosis/pityriasis versicolor/ candidiasis) (23.53%), palmoplantar keratoderma or frictional callosities (13.87%), lichen simplex chronicus (3.78%), pyoderma (4.20%), photo dermatitis (2.52%) and urticaria (2.52 %). Contact dermatitis is the most common skin disease and mostly occurs on exposed part (legs and hands), which support previous study in Germany [10].

In such an industry where different chemical and metallic substances are commonly handled protective measures like gloves, shoes, jacket is very important. In the current study only 23.0% workers had opportunity to use any form protective measure and all working elds were dirty or unhealthy. -e prolonged exposure to construction materials for years without almost no protective measures may be cause of this high rate of contact dermatitis. Scabies and fungal infection also foundin a higher rate among workers, these may be due to dirty, unhealthy, hot humid working areas and residence.

CONCLUSION

From the study we can conclude that, contact dermatitis is the most common and other skin diseases include fungal infection, scabies and acne. ese occupational skin diseases may be prevented by providing improved work place, protective means, health education, adequate health services and improving professional skills.

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