



OCCUPATIONAL SKIN DISEASES IN CONSTRUCTION WORKERS AT A LARGE CONSTRUCTION SITE

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ABSTRACT

Occupational risks have been classed as the tenth leading cause of morbidity and mortality and occupational skin diseases are important problem in the construction industries. The current study was conducted to see the type of skin diseases among construction workers at large construction site. It was a cross sectional study conducted at construction site of a cement factory in Srinagar in May 2014. All the 200 workers present at the construction site were enrolled in the study. History was taken, physical examination and laboratory tests were done to see the presence of skin diseases. Among 200 workers only 28.0% used protective measure and 60% have suffered with at least one form of skin disease. Among them different diseases were found in following percentages i.e. irritant contact dermatitis (ICD) (35%), allergic contact dermatitis (ACD) (26.7%), acne (15.8%), seborrheic dermatitis (15%), burn/scald (6.6%), accidental injury (10%), scabies (24.16%) and fungal infection (28.3%). Construction workers bear a great burden of skin diseases, among which contact dermatitis is the most common and other skin diseases include fungal infection, scabies and acne. These occupational skin diseases may be prevented by providing improved work place, protective means, health education, adequate health services and improving professional skills.

KEYWORDS: Construction, occupational, skin, diseases, workers.

INTRODUCTION

The construction industry is one of the world's major industries. It is an essential contributor to the process of development. 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 occupation¹ is one of the frequent occupational diseases. 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. 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, fitters, supervisors, carpenters and painters. The common irritants at construction site are cement, chalk, fly ash, hydrochloric and hydrofluoric acids, fiberglass and rock wool, chromate, cobalt, epoxy resin, rubber, leather gloves, adhesives (phenol or urea formaldehyde resins), wood preservatives and polyurethane resins. Among

workers who contact with cement regularly, occupational dermatoses, especially contact dermatitis, has been one of the most frequently reported disorders for many years.^[1]

Skin contact with cement and other construction materials has been associated with irritant contact dermatitis, which ranges from cement burns to cumulative irritant contact dermatitis. Cement burns causes an acute ulceration^[2] most frequently seen in new and untrained cement workers. In non-sensitized workers who are exposed to cement on a regular basis, cumulative irritant contact dermatitis may result.^[3] In addition to irritant contact dermatitis, the exposure to other allergens in cement is a significant cause of occupational allergic contact dermatitis. The most important allergens in cement are soluble hexavalent chromium (chromate) compounds.^[4] In addition to soluble hexavalent chromium, other metals such as nickel, cobalt and also ingredients of the gloves such as rubber chemicals, latex, epoxy resins and preservatives are well-known allergens for the cement workers. Reported prevalence of allergic contact dermatitis to

chromate among this population usually is more than 10%.^[5] Concrete, which is widely used in masonry, floor laying and other occupations, is a mix of portland cement (calcium, silica, iron and alumina), sand, aggregate and water. Fly ash, gypsum and blast-furnace slag may be added to produce blended-cement products. Contact with wet concrete can cause both irritant and allergic contact dermatitis. Irritant dermatitis, which can be acute or chronic, is caused by the concrete's alkaline and abrasive properties. Irritant dermatitis can also be caused by solvents, soaps, asphalt, dust, fiberglass, abrasives and mechanical trauma or friction.^[6] Diagnosis and management of occupational dermatoses (OCD) is often inadequate. It is more poorly addressed in resource limited countries. A Huge number of workers are employed in its construction sectors. The skin contact to cement or its mixtures or other construction materials can therefore be a major health problem in this group. The present study was done to see various skin diseases prevalent in construction site workers.

Methods

A cross sectional study was conducted at a large construction site in Srinagar in May 2014. All the 200 construction workers working at the site in were selected. After a complete physical 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. The duration of exposure was calculated as years in occupation. In addition, the subjects were asked about their personal work habits, use of protective gloves and the type of gloves used. All collected data were checked and rechecked for omissions, inconsistencies and improbabilities. Data analysis were performed by Statistical Package for Social Science (SPSS), version-17. Prevalence, percentage, mean and median were calculated.

RESULTS

Table 1: Age wise distribution

Age	Frequency	Percentage
<18	20	10
18-45	136	68
>45	44	22

Table 2: Duration of work (Year/s)

Duration	Frequency	Percentage
<1	20	10
1-5	136	68
>5	44	22

Table 3: Protective measures.

Protective measures (Boot, Gloves, Apron/jacket, Goggles and Sufficient water)	Frequency	Percentage
Available or used	56	28
Not available or not used	144	72

Table 4: Prevalence of skin disease among construction workers (n=200).

Skin disease	Frequency	Percentage
Present	120	60
Absent	80	40
Total	200	100.0

Table 5: Distribution of skin diseases among construction workers (n=120).

Disease	Frequency	Percentage
Irritant contact dermatitis	32	26.7
Allergic contact Dermatitis	16	13.3
Contact dermatitis	48	40
Acne	19	15.8
Seborrheic dermatitis	18	15
Burn/scald	8	6.6
Accidental injury	12	10
Scabies	29	24.16
Fungal infection	34	28.3
Frictional callosities	18	15

DISCUSSION

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

In the current study among two hundred construction workers 60% of them have at least one form of skin disease. Out of all skin diseases, 48 (40%) patients were suffering from contact dermatitis, among which was irritant contact dermatitis (ICD) 26.7% and 13.3% allergic contact dermatitis (ACD). Other skin diseases were acne, seborrheic dermatitis, burn/scald accidental injury, scabies, fungal infection and palmoplantar keratoderma. The findings are consistent with various other studies.^[7,8,9]

In the current study only 28.0% workers had opportunity to use any form protective measure. The 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 found in a higher rate among workers, these may be due to dirty, unhealthy, hot humid working areas and residence.

The construction workers are a group of less skilled workers who start the occupation without previous training; this situation facilitates the emergence of occupational dermatitis. More over in this study almost all workers are belong to low socio-economics class, they have limited excess to healthcare, lack of sufficient health education. All these factors produce a cumulative affect to their health specially skin health which can be prevented by providing improved work place, protective means, health education, adequate health services and improving professional skills.

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