

Original Article**Prevalence of Skin morbidity among construction site workers working at Vadodara**Trivedi Ashish¹, Patel Yogesh², Pandit Niraj³, Bhavsar Bharat⁴¹Associate Professor, ² Assistant Professor, ³ Associate Professor, ⁴ Professor and Head; Department of Community Medicine, SBKS Medical Institute and Research Center, Sumandeep Vidyapeeth, Piparia Vadodara Gujarat

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Abstract**Background:**

Construction workers are the second largest workforce in un-organized sector of the country. They are exposed to various hazards due to work conditions. Occupational Dermatitis is one of the commonest hazards among construction workers, most commonly due to exposure to cement and other materials like paints and resins, used at construction sites.

Objectives:

To find out prevalence of skin morbidity and its relation with provision and practice of usage of Personal Protective Equipments (PPEs) among construction workers.

Methodology:

A cross sectional study among construction workers working at various sites of Sumandeep Vidyapeeth. Data was collected with the help of a pre-designed and pre-tested questionnaire for skin morbidity.

Results:

20.3% of workers had skin morbidity like dermatitis and itching. Only 28(12.5%) out of 230 workers were provided the PPEs at workplace, however, only eight were using them regularly during work and it was found that prevalence of skin morbidity was less in this group compared to the group which was not using them regularly at workplace.

Conclusion:

Skin morbidity is one of the commonest hazards among construction workers. Morbidity is lesser among regular PPE users at workplace.

Keywords : Construction workers, Skin morbidity, Personal Protective Equipments.

Introduction:

The construction industry is one of the world's major industries. It is an essential contributor to the process of development. In India, construction workers are the second largest unorganized sector after agriculture workers⁽¹⁾.

Being an unorganized sector, the risk to limb and life is high and the workforce is at risk of developing safety and health related hazards at work⁽¹⁾.

Occupational dermatitis, 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⁾.

It is of two types, 1.Primary (irritant) Dermatitis and 2. Secondary (Contact) Dermatitis (OCD). OCD is a significant occupational hazard in some jobs, like the construction industry. Reported prevalence of allergic contact dermatitis to chromate among this population usually is more than 10%⁽³⁾.

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 rockwool and common sensitizers are cement, fly ash, chromate, cobalt, epoxy resin, rubber, leather gloves, adhesives (phenol or urea-formaldehyde resins), wood preservatives, fiberglass impregnated with phenol-formaldehyde, epoxy and polyurethane resins⁽⁴⁾.

Diagnosis and management of occupational skin disease (OSD) is often inadequate. It is even more poorly addressed in resource-limited countries, like India⁽⁵⁾.

Objectives of Study:

To find out the prevalence of skin morbidity among construction workers.

To find out the provision of Personal Protective Equipments and pattern of its usage among construction workers and its effect on skin morbidity.

Methodology:

Type of study : A Cross sectional study among workers working at various construction sites of Sumandeep Vidyapeeth University.

Sample Size: All the workers working at various sites of the campus were included in the study. Total sample size was 230 workers.

Method of study : Data Collection was done by intern doctors posted in Community Medicine department with the use of a predesigned –pretested questionnaire. Questionnaire included questions about demographic profile of the workers, availability and usage of PPEs, and skin morbidity. Presence of Dermatitis was confirmed by observation of affected part by intern doctors.

Ethical Issues: Prior Permission of the Contractors were obtained before starting the service. Confidentiality of the data was ensured to individual worker and they were involved in the study after their consent only. Ethical Clearance was obtained from Local Ethics Committee before starting the study.

Data collected was analyzed by Epi-info, Version 3.5 – a statistical package.

Results and Discussion

Demographic Profile of Construction site workers

Age of the workers ranged from 12 to 60 years with mean age of 25.14 ± 6.71. Most of the workers (51%) were in age group of 20 – 30. Total 23 (10%) workers were under 18 years of age. Majority of the workers (72.6%) were male. 65.5% were illiterate and 22.4% were literate up to primary school level.

Majority of workers (52%) were involved in construction work for the last 5 years or less (Table I). Their daily work hours were ranging from 5 to 18, with mean work hour of 10.1±

1.84. More than 85% of workers had their daily working time of more than 8 hours.

Table 1: Job Duration and Daily Work hours

Total Job duration	Number	(%)	Daily Work hours	Number	(%)
≤5 years	116	52%	≤8 hours	32	14.2
5 – 10 yrs	68	30.5	> 8 hours	193	85.8
10 –15 yrs	25	11.2	TOTAL	225	100
> 15 yrs	14	6.3			
TOTAL	223	100			

All the workers were having at least 1 hour of break during their work shift. (Table 1)

Table : 2. Provision and Usage of Personal Protective Equipments (PPE):

Provision of PPE	Number of Workers	Percentage(%)
Provided	28	12.2
Not Provided	201	87.8
TOTAL	229	100

Only 28(12%) workers were provided with any form of PPE, and only 8 were using them regularly and rest of them were irregular in usage of PPEs.

The most common reason given by the workers for not using the PPEs, even though provided was “Not needed” or “Not necessary” in their opinion. One worker had side effects with the use of gloves and he stopped utilizing them.

Skin Morbidity:

47 out of 230 workers (20.3%) had skin complain or skin lesion. out of which 18 (38.3%) had dermatitis while 29 (61.7%) complained of itching.

The commonest site of lesion was hands (51%) while, 25% of workers had skin problems involving multiple sites (mostly Hand and Feet) of the body.

Table: 3. Type & site of skin problems

Type of Skin problem	Number	Site of Skin problem	Number (%)
Dermatitis	18 (38.3%)	Hand	24 (51)
		Foot	4 (8.5)
Itching	29 (61.7%)	Forearm	5 (10.6)
		Leg	2 (4.25)
		Mutliple Site	12 (25.5)
TOTAL	47	TOTAL	47

Table: 4. Relation between PPE provision and Skin Morbidity

PPE provision	Skin morbidity		Total
	Yes	No	
PPE provided	8 (28.5%)	20	28
PPE not provided	39 (19.4%)	162	201
TOTAL	47	182	229
X ² = 1.65 P = 0.64 (Not Significant)			

It was observed that 28.5% of workers, who were provided PPEs were suffering from skin morbidity while only 19.4% of workers who were not provided PPEs were suffering from it. But while analyzing the data for regular usage of PPEs while at work the results were as under:

Table: 5. Relation between PPE usage and Skin Morbidity

PPE usage	Skin morbidity		Total
	Yes	No	
Regular Usage of PPE	1 (12.5%)	7	8
Irregular usage of PPE	7 (35%)	13	20
TOTAL	8	20	28
Yates's Corrected X ² = 0.52 P = 0.46 (Not Significant)			

Among the workers, using PPEs regularly, only one (12.5%) worker had skin morbidity, while it was 35% in those who were not using it regularly at workplace. So to

ensure regular usage of PPE at work is very important rather than just providing PPEs.

Conclusion

- 47 workers (20.3%) had skin morbidity like itching and dermatitis and 51% had hand as a site of involvement.
- Only 28(12.2%) of workers were provided Personal Protective Equipments and only 8 were using them regularly at work.
- Skin morbidity was higher among the workers who were not using PPEs regularly at work but the difference was statistically not significant.

Recommendations:

- Proper Engineering control measures should be the first target for prevention of hazard. It should be implemented for the construction site workers to reduce the burden of skin diseases.
- All the workers should be provided with the appropriate Personal Protective Equipments at the workplace.
- Awareness prgoramme related to work place hazards and for the regular usage and maintenance of the PPE should be carried out at regular interval.

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