

## Assessment of occupational health illnesses and injuries encountered by female workers in building construction in Ahmedabad city

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### Abstract

**Background:** Informal/unorganised sector covers approximately 92% of total workforce in India. About 50% of construction industrial workers belong to unorganised sectors. They are at risk of encountering certain health injuries and illness and the scenario get worsened if workforce is female.

**Aim & Objectives:** 1.To look in to socio-demographic profile of workers.2.To find out occupational health hazards & injuries encountered by women engaged in construction industry.

**Study Design:** It was a cross-sectional study carried out among 360 female workers from 30 different construction site by simple random sampling. Data was collected and analysed by statistical package for social science. Microsoft word and excel have been used to generate tables etc.

**Results:** The study revealed that majority of the female workers belongs to 15 to 45 years of age; most common injuries among construction worker in their work life were cuts & bleeding (88.8%) followed by boils (83.3%) & puncture of foot sole (80.5%) respectively. Also, most common illness experienced by female was urinary tract infection (95.5%) followed by fever (95.8%) & Dehydration (94.4%) respectively.

**Conclusion:** Poor working conditions, lack of facility for basic amenities, lack of security, lack of training make these workers vulnerable populations and it shows imperative need for an overall socio economic development as key for achieving the desired status.

**Keywords:** unorganized sector, building construction workers, Ahmedabad city, injury

### Introduction

The global workforce is about 2600 millions with 75% of these working people in the developing countries. The total labor force in India is estimated to be 317 millions in which organized sector employees are only 26.8 millions (8.5%) while unorganized sector employees are as many as 290.2 million (91.5%). The construction industry in India is the sector providing largest number of employment opportunities after the agricultural sector in which 31 million persons get employment. Expanding and fast growing construction sector and, in general lack of greater employment opportunity elsewhere has drawn large number of workers in this sector. Unorganized sector of work is full of health hazards, and if the workforce is female, the problems at work site will doubled. The workers engaged in this industry are victims of different occupational health hazards & Injuries that could be preventable if appropriate measures are taken.

The construction industry is a mobile one, where the workers move from site to site. Occupational injuries and accidents among these workers are high due to illiteracy, poverty, lack of health and safety training and information on health hazards and risks at the work place. Such workers are known to face rapidly changing workplaces; a high degree of competition and bouts of unemployment in India has the world's highest accident rate among construction workers. These construction laborers, as part of unorganized work force remain the most exploited ones even after five decade of independence.

Pratik K. *et al.* (2016) [1] carried study of morbidity profile among 312 construction workers in Surendranagar city,

Gujarat. The studies recorded that illiteracy, poor working conditions, lack of infrastructure and security, inadequate health service utilization make construction workers more vulnerable population for illness and injuries.

Basu *et al.* (2009) [2] mentioned some of the health problems in their study on worksite injuries in female laborers' included: severe muscular pain, intestinal problems, gastroenteritis, fevers, coughs and colds, pains and more serious ailments like pneumonia, tuberculosis, leprosy, etc. Gujarat is one of the leading states among the western states of India. The state is presently on top position as far as urbanization rate is concerned. The present study is focused on the Female construction workers who are mainly working in the unorganized sector in Ahmedabad city in which construction business is blooming in vast proportion.

### Materials and Methods

This was a cross-sectional study carried out among 360 female construction workers from 30 different construction sites. We selected different construction sites located in Ahmedabad corporation area. We selected different construction site by simple random sampling method to get sufficient sample. 12 female workers from each construction site were selected. Verbal informed consent of each worker was taken. Data was collected through oral questionnaire method using pretested Performa. The data was analyzed by Statistical Package for Social Sciences (SPSS), Microsoft Word and Excel were used to generate tables etc.

**Table 1:** Nature & frequency of injuries experienced by female labourer (n=360)

Type of injuries	Occurrences of injuries		Frequency of injury experiences		
	Yes	No	Once/twice	Past few months	Recently
Cuts & bleeding	320(88.8)	40(11.1)	10(2.7)	270(75)	40(11.1)
Sprain	253(70.2)	107(29.7)	0(0)	56(15.5)	197(54.7)
Abrasion of skin	272(75.5)	88(24.4)	3(0.83)	75(20.83)	194(53.88)
Crushing & pinching	244(67.7)	116(32.2)	0(0)	187(51.9)	57(15.8)
Bite by insects	283(78.6)	77(21.3)	12(3.33)	178(49.4)	93(25.8)
Eye injury	220(61.1)	140(38.8)	11(3.05)	172(47.7)	37(10.27)
Falls/slips/trips	213(59.1)	147(40.8)	134(37.2)	44(12.2)	35(9.7)
Puncture of foot sole	290(80.5)	70(19.4)	78(21.6)	134(37.2)	78(21.66)
Boils	300(83.3)	60(16.6)	137(38.05)	76(21.1)	87(24.1)
Swelling of body parts	211(58.6)	149(41.3)	53(14.7)	132(36.6)	26(7.22)
Fracture	20(5.5)	340(94.4)	12(3.33)	6(1.6)	2(0.55)
Internal injury	16(4.4)	344(95.5)	9(2.84)	4(1.1)	2(0.55)
Burns	10(2.77)	350(97.2)	6(1.66)	3(2.5)	1(0.27)

(Multiple response given) (Figures in parenthesis indicate percentage)

**Table 2:** Type of illness and its occurrence (n=360)

Type of illness	Occurrence of illness		Frequency of illness		
	Yes	No	Once /twice	Past few month	Recently
UTI	344(95.5)	16(4.4)	61(16.94)	140(38.8)	143(39.7)
Fever	345(95.8)	15(4.1)	136(37.7)	130(36.1)	79(21.94)
Heat stroke & dehydration	312(86.6)	48(13.3)	89(24.7)	134(37.2)	89(24.7)
Constant headache	234(65)	126(35)	12(3.33)	88(24.4)	134(37.2)
Ear problems	3(0.83)	357(99.16)	1(0.27)	2(0.5)	0(00)
Musculoskeletal problems	172(47.7)	188(52.2)	5(1.38)	144(40)	23(6.3)
Respiratory problems	197(54.7)	163(45.2)	13(6.94)	75(20.8)	109(30.2)
Skin problems	123(34.1)	237(65.8)	80(22.2)	33(9.1)	10(2.7)
Gynaecological problems	44(12.2)	316(87.7)	26(7.2)	12(3.33)	6(1.66)

(Multiple response given) (Figures in parenthesis indicate percentage)

**Results and Discussion**

Result of present study (Table 01) reveals that\_(81.38%) of female labourer were in age group of 15 to 45 years followed by 46 to 60 years (14.44%). only 4.14 % of female labourer were less than 14 years old. Similar findings were found in study done by Pratik *et al.* [1] and other studies by Tiwary *et al.* [3]. Bhanara *et al.* [4] shows similar socio demographic findings. Majority (67.5%) of the workers were lived in nuclear family & majority (76.9%) of them were married, its probably due to fact that when men migrated to construction site they brought their wives along, so married women were part of major female work force. Study by Bhanara *et al.* [4] support these findings. Considerable numbers (42.22%) of female labourer are from Gujarat but out of Ahmedabad followed by proper Ahmedabad (27.77%). 30.01% of female labourer were from outside Gujarat from the state like Rajasthan (12.24%), Bihar (7.7%) & few (10%) from other states including Uttar pradesh, maharashtra, Madhya pradesh, Orissa, Jharkhand. Study by chintul *et al.* [5] shows similar findings.

In present study distribution of respondents according to frequency of injuries inflicted due to construction work (Table 01) shows that 75% of workers reported to have experienced cuts and bleeding in ‘past few months back’. Lack of personal protective measures and building material used in construction site seems to be reason for such injuries. Jaselskis *et al.* [6] also reported workplace injuries were due to lack of personal protective measures & proper safety training.54.7% of the worker said that they had ‘recently’ suffered from sprain, this may be due to their vigorous work schedule and weight they carried, this can be attributed to high incidence of

musculoskeletal disorders. More than half (53.8%) of workers reported that they had abrasion of skin ‘recently’, this may be due to fact that the workers do not have any supportive gear. Crushing and pinching of body parts due to building materials reported by 51.9% workers followed by insect bite (50%) in ‘past few month back’ experiences. Eye injury due to construction work was reported by 47.7% of the workers this may due to lack of personal protective measures during work. The study in India by Bharara *et al.* [4] support this finding. About 37.2% of workers reported to have experienced falls, slip, trips ‘once or twice’ since they entered this unorganized sector and puncture of sole (37.2%) in ‘past few months’. Construction site do not have railings to prevent them from falling. Bentley TA *et al.* [7] support these findings. About 38%of worker said that they had boils in feet ‘once or twice’ since they enter this. This may be due to reason that they do not wear any foot wear during work and hence experienced boils. About one fourth (36.6%) of workers reported that they had swelling in the various parts of the body in the ‘past few months back’. This may due to the fact that the worker do not lift weight properly and assume improper posture of the body. Few (5.5%) of worker had history of fracture in past, (2.84%) of workers experiences internal injury followed by burns (1.66%) ‘‘Once or twice’ since they work as a laborers. None of the workers say that they never received any injury due to work. (NIOSH)National institute of Occupational Health and safety [10] has ample data to support this finding.

In present study the distribution of female workers according to illeness caused due to working in construction work (Table 02) shows that majority of the workers experienced illness at

one time or other since their employment. 95.5% of workers admitted that they had urinary tract infection in their work life, 39.7% of workers said that they had 'recently' suffered from urinary tract infections, 38.8% of them suffered in 'past few months' followed by 'once or twice'(16.94%) since they entered this sector. This may be due to holding of urine and lack of toilet facility at workplace. Study by Bhanara *et al.* [4] support this finding. 95.8% of worker reported that they had fever, among which 37.7% had 'once or twice' in work life, 36.1% had in 'past few month' followed by 21.9% had history of fever 'recently'. 86.6% of workers experienced dehydration & heat stroke, among which 24.7% had 'recent' heat stroke followed by in 'past' (37.2%) & 'once' (24.7%) respectively. This attributed to hot weather of Ahmedabad city & constant work and lack for facility for food and water. 65% of workers experienced feeling of constant headache, out of them 37.2 % had 'recent' experience followed by 'past' (24.4%) & 'once'(3.3%) in work life respectively. 54% of workers admitted that they had respiratory problems like cough, breathlessness, asthma, chest pain since they enter this sector, this may be attributed to toxicants present in the working environment.

Musculoskeletal disorders were reported in our study by 47.7% of workers. It includes body ache backache, weakness, joint pain etc. Out of those who reported musculoskeletal disorders 40% of worker had in 'past few month back' followed by 'recent' (6.3 %) illness. Similar result also found in the study conducted by Sarika Manhas *et al.* [9]. 34.1% of workers had skin problems in their work life, skin problems due construction materials was reported as 'recently encountered' incidence in 2.7% of workers followed by 'past few months'(9.1%) & 'once or twice'(22.2%) respectively. contact with cement and lime, chromate, cobalt may leads to skin problems like irritant dermatitis and allergic contact dermatitis. Similar findings were there in study by Kartik Shah *et al.* [8] where skin problems were in 48% of workers. Gynecological problems were reported by 12.2 % of the female workers, out of them 7.2 had 'once or twice' in their work life followed by 'past'(3.3% )and 'recently'( 1.6%) respectively. This was due to improper sanitation and hygiene. Only three were reported ear problems including deafness, ear pain since they enter in the unorganized sector.

### Conclusions

It can be thus concluded from the present study that majority of women belong to reproductive age group i.e.15 to 45 years of age, married and lived in nuclear family as they migrated from other places with their spouse in the search of work. Incidents of work related injury and illnesses were very high among the female workers working in building construction. Poor working conditions, lack of facility for basic amenities, lack of security, lack of training make these workers vulnerable populations and it shows imperative need for an overall socio economic development as key for achieving the desired status.

### Recommendations

1. Create awareness of construction workers rights and set up mechanism of redressed.
2. Providing decent working condition and basic health care facility in case of mild injury and referral in case of accidents and falls.

3. Government should take steps for health, safety and welfare of the construction workers.
4. Facility of separate toilets should be there to reduce frequent urinary tract infection.

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