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Occupational injuries among construction workers

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Abstract
Construction work considered as highest injury prone industry. It causes injuries to the joint, bones and nerves and leads to musculoskeletal disorders among workers. Multi stage random sampling technique was used to select zone, construction site and respondents. Total 150 respondents of three different professions i.e. mason workers, plumber and electrician were interviewed. The result of the study shows that plumber work was found most injury prone occupation, followed by masonry work whereas electrician work was identified as least injury prone occupation.

Keywords: Occupational injury, musculoskeletal disorder

Introduction
The construction industry has been identified as one of the most hazardous industry in many parts of world and fall from height are a leading cause of fatalities in construction operation Sarock *et al.,* (1993) [1]. Workers frequently perform their task at elevation, work with heavy construction machinery, face exposure to various type of hazardous energy such as electrical energy, or manually handle a wide variety of bulky, heavy materials. In addition, at construction sites, the work environment, the work to be done and the composition of crews are subject to continuous change. These are various factors that make construction a high risk industry. Kisner *et al.* (1994) [2] reported in their study that fatality rate in construction was more than 3.5 times the occupational fatality rate for all other industry.

Methodology
A multistage random sampling technique was used to select the zones, construction sites and the respondents. Total 150 respondents of three different professions of the construction industry i.e. mason worker (50), plumber (50) and electrician (50) were selected. Three point rating scale i.e. ‘always’, ‘some time’, ‘never’ with score 3,2,1 respectively were used to analyze the data to pertaining the common injuries in related occupation. Mean and average mean value were used to interpret the results.

Results and discussion
It is evident from the Table-1 that in mason work injury of sprain/strain (2.02) and cut (2.14) were highest while making slab whereas contusion (2.06) and fracture (1.24) were highest while laying bricks, contusion (1.28), fracture (1.04) and cut (1.52) was found lowest while plastering whereas sprain/strain (1.32) was lowest while laying bricks. Injury of burn was equal for all the activities of mason work with mean score 1.00.
Table-2 shows that in plumber work injuries of sprain/strain (2.35), cut (2.28) and fracture (1.15) were highest while fitting of drainage pipe whereas contusion (2.26) and burn (1.2) were highest while making groove and fitting of accessories respectively. Sprain/strain (1.88) and cut (2.06) were found lowest while mating groove whereas contusion (1.62), fracture (1.0) and burn (1.06) were lowest while cutting and fitting of GI pipes, fitting of accessories and fitting of drainage pipes respectively.
It is clear from the table-3 that in occupation of electrician the injuries of contusion (2.12) and fracture (1.28) were highest while making groove whereas sprain/strain (1.82) and cut (1.9) were highest while fitting of accessories. Highest injury of burn (1.54) was found while making connection. Injury of contusion (1.24) was lowest for both fitting of power supply pipe and making connection whereas fracture was found lowest (1.0) while fitting of power supply

pipes, making connection and fitting of accessories. Similarly the injury of burn was identified lowest while making groove and fitting of power supply pipes.

Table-4 depicts a comparative analysis of injury prone occupation in construction industry. It shows that profession of plumber was found as most injury prone occupation with average mean value 1.69 followed by mason work and electrician with average mean values 1.49 and 1.42 respectively. Injury of cut was found as most common in construction industry with average mean value 2.00 followed by sprain/strain and contusion with average mean values 1.75 and 1.72 respectively. Fracture and burn were found as equally least common injury in construction industry with average mean value 1.10.

Most of the injuries of cut (2.18), contusion (1.97) and sprain/strain (2.09) were found in plumber occupation whereas injury of burn and fracture were most common injury in electrician and mason occupation with mean values 1.20 and 1.12 respectively in construction industry.

Table 1: Mean distribution of the respondents on the basis of common injuries in mason occupation.

S. No.	Selected activities	Strain/ Sprain	Confu-sion	Frac-ture	Cut	Burn
1.	Making of column	2.0	1.56	1.08	2.12	1.0
2.	Laying of bricks	1.32	2.06	1.24	2.00	1.0
3.	Making slab	2.02	1.68	1.12	2.14	1.0
4.	Plastering	1.48	1.28	1.04	1.52	1.0

Table 2: Mean distribution of the respondents on the basis of common injuries in plumber occupation.

S. No.	Selected activities	Strain/ Sprain	Confu-sion	Frac-ture	Cut	Burn
1.	Fitting of drainage pipe	2.35	2.05	1.15	2.28	1.06
2.	Making groove	1.88	2.26	1.20	2.06	1.10
3.	Cutting and fitting of GI pipes	2.12	2.62	1.06	2.22	1.10
4.	Fitting of accessories	2.02	1.94	1.00	2.16	1.20

Table 3: Mean distribution of respondents on the basis of common injuries in electrician occupation.

S. No.	Selected activities	Strain/Sprain	Confu-sion	Frac-ture	Cut	Burn
1.	Making of column	1.54	2.12	1.28	1.88	1.00
2.	Fitting of power supply pipes	1.40	1.24	1.00	1.84	1.00
3.	Making connection	1.40	1.24	1.00	1.80	1.54
4.	Fitting of accessories	1.82	1.58	1.00	1.90	1.24

Table 4: Average mean distribution of the respondents according in injury prone occupation.

S. No.	Common injuries	Mason	Plumber	Electrician	Average mean
1.	Strain/ Sprain	1.71	2.09	1.54	1.78
2.	Contusion	1.65	1.97	1.55	1.72
3.	Fracture	1.12	1.10	1.07	1.10
4.	Cut	1.95	2.18	1.86	2.00
5.	Burn	1.0	1.11	1.20	1.10
	Average mean	1.49	1.69	1.42	

Conclusion

It can be concluded from the study that laying of bricks, fitting of drainage pipes and fitting of accessories were found as most injuries prone activities of mason workers, plumbers and electricians respectively. Among three selected occupations the plumber work was identified as most injury prone occupation, whereas electrician work was found as least injury prone occupation. Hsiao *et al.* (1993) [3] also found the similar result in their study on eight different occupational industries.

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