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Occupational health hazards of women workers in brick industry

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Abstract

A study was conducted during the year 2018-19 with the aim to study the occupational health hazards of women workers in brick industry. Gulbarga district were selected through purposive random sampling technique with the sample of 90 women workers of brick industry from three villages. The self-structured interview schedule was used to collect the required information. Appropriate statistical techniques like, frequency and percentage was used for analysis. Result revealed that majority of the respondents belonged to age group of 25-50 years and illiterates. Majority of the respondents belonged to Hindu religion (94.40%). Most of the respondents (86.66%) manufactured 1000-2000 bricks per day and more than half (53.33%) of the respondents carried 10-12 bricks each trip. Cent per cent of the respondents had cold, fever, headache and fatigue. Majority (58.90%) of the respondents experiencing the respiratory problems.

Keywords: Brick industry, occupational hazards, women workers, risk factors

Introduction

The ever-growing population in company with rapid industrialization and urbanization process is necessarily demands millions of new houses and buildings every year. This has made the construction activity as one of the most rapidly developing businesses in India. Because of all these reasons building materials industry is a rapidly developing sector in India. These industries are the major users of natural resources, energy, labour and capital. The construction sector is responsible for 22 per cent of India's overall Carbon dioxide emissions. Brick is a building material used to make construction of walls and one of the important element in machinery construction in India and other country. The Indian brick industry is the second largest in the world after China. In India, brick production is widely scattered and located in generally rural and semi-urban areas. It is estimated that in India, more than 115,000 brick making units operate, out of these 15,000 are larger units, which use continuous kilns. It is one of the largest employment generating industries, providing about 1.5 millions jobs in the country. More than 90 per cent of brick industries are in the small scale industry sector in India (Shodhaganga).

The manual brick manufacturing process in India has been going on for centuries and millions of people were working and a large number of women workers were engaged in the brick industry. There are two groups of women workers in brick industry, brick making and carrying bricks were the main tasks performed by women in one group. The other group women workers engaged in all the tasks which are carried out in brick industry.

In unorganized sectors, these workers are recruited temporarily on a seasonal basis and thus they are neither trained nor sufficiently experienced. Therefore, they do not have any previous knowledge about unsafe acts and hazards related to this work or they simply ignore the safe working process (Basu *et al.*, 2005) ^[1].

Brick industry workers were suffering from occupational problems were identified in terms of respiratory problems, gastrointestinal problems, skin problems, eye problems and ear problems because of environmental factors or activity performed by workers in the industry. The workers are exposed to the sun for long hours, high concentration of hazardous dust, open fire and hot surface; because of all these things they get various types of problems like skin allergy, eye irritation, tuberculosis, joint diseases *etc.* Due to the exposure to dust particle they have problems like asthma, breathlessness, cough *etc.*

Methodology of the study

The explorative research design was used to investigate the present study. Exploratory research was undertaken to explore an area is known or to investigate the possibilities of undertaking a particular research study. The present study was aimed to identifying the occupational hazards of women workers in brick industry.

The study was conducted in Gulbarga taluk in three village's viz., Sultanpur, Biddapur and Bhabalad. Based on the secondary data and researcher vicinity these areas will be selected. In Gulbarga district brick making activities starts in the end of Manson season, compared to other districts of Northern Karnataka. Investigator being resident of Gulbarga city and familiarity with local areas and familiar to the language formed as important criteria for the selection of the study location.

The sample consisted of women workers of brick industry. The population of the study was selected 90 women workers from industrial units of villages of Gulbarga district Karnataka. Purposive random sampling was followed by selecting 90 workers from the selected areas were women workers.

The research tools used to collect the required information from the selected samples under the study were pre-structured schedule. The tools were formulated by reviewing the relevant literature. The pre-structured interview schedule were prepared to eliciting information form women workers of brick manufacturing industry.

The collected data was tabulated by keeping in view the objectives of the study. Data was analysed by frequency, percentage and weighted mean.

Result and Discussion

Table 1: Socio-demographic characteristics of Women Workers in Brick Industry

N = 90

Particulars	Frequency	Percentage
Age (Yrs)		
Young (<25)	22	24.40
Middle (25-50)	49	54.50
Old (>50)	19	21.10
Education		
Illiterate	48	53.30
Primary	32	35.60
Secondary	10	11.10
Caste of the family		
Upper caste	12	13.33
OBC	30	33.33
Dalits	28	31.11
Tribals	20	22.22
Religion		
Hindu	85	94.40
Muslim	05	05.60
Marital Status		
Married	63	70.00
Unmarried	23	25.60
Widow	04	04.40

To know the socio-demographic characteristics of women workers in brick industry included in the exploration. It was observed from the Table 1 that 54.50 per cent of respondents belonged to 25-50 years of age followed by below 25 years (24.40%) and least was observed that above 50 years (21.10%) of age. The findings of the present study are in line

with the study conducted by Prasad *et al.* (2016) [4], they found that a total 82 per cent of the respondents belonged to below 50 years of age.

Pertaining to the education of women workers in brick industry, most of the women workers belonged to illiterates (53.30%) followed by primary school (35.60%) and secondary school (11.10%) education. The findings of the present study are supported with the study conducted by Irumjahan and Rajan (2017) [2].

Majority of the women workers in brick industry (94.40%) belonged to the Hindu religion and only 5.60 per cent of them were Muslim religion. The results are on par with the findings of Rabin (2015) [5] as revealed that a majority (96.00%) of the respondents belonged to Hindu religion.

It was observed that 33.33 per cent of the respondents belonged to OBC category followed by Dalits (31.11%), Tribals (22.22%) and only 13.33 per cent of the respondents belonged to upper caste category.

More than half of the respondents were married (70.00%) followed by unmarried (25.60%) and only 4.40 per cent of the respondents were widow. The results of the present study are in line contradictory to the findings of Swapan Kumar (2012) [7], revealed that majority (57.00%) of the respondents were married.

Table 2: Occupational profile of women workers in brick industry

N = 90

Particulars	Frequency	Percentage	
Bricks manufactured per day	<1000 bricks	02	02.20
	1000-2000 bricks	78	86.66
	>2000 bricks	9	10.00
Number of bricks carried	<10	11	12.22
	10-12	48	53.33
	>12	31	34.44
Mode of carrying bricks	Trolley	07	07.80
	Plank	83	83.00
Distance travelled in each trip (mtr)	<100 mtr	28	31.11
	100-150 mtr	38	42.22
	>150 mtr	24	26.66
Number of trips travelled per day	<32	12	13.33
	32-34	61	67.77
	>34	17	18.88
Weight of load carried (kg)	<20	13	14.40
	20-25	02	02.20
	>30	75	83.30

Occupation profile of women workers in brick industry is noticed in the Table 2. It was observed that 86.66 per cent of the respondents manufactured 1000-2000 bricks per day followed by more than 2000 bricks (10.00%) and only 2.20 per cent of the respondents manufactured less than 1000 bricks.

With respect to the number of bricks carried, more than half (53.33%) of the respondents carried 10-12 bricks per trip on their head followed by above 12 bricks (34.44%) and only 12.22 per cent of them carried below 10 bricks. Majority of the respondents carry 10-12 bricks in each trip. Because they were carrying on their head so maximum they can carry 12-15 because each brick weighs 2.5 kg.

Majority of the respondents carried bricks on plank (83.30%) followed by trolley (7.80%) in brick industry.

With regard to distance travelled in each trip, majority (42.22%) of the respondents travelled 100-150 m followed by below 100 m (31.11%) and only 26.66 per cent of them

travelled more than 150 m in brick industry. Maximum per cent of the respondents were travelled 32-34 times per day (67.77%) followed by above 34 times (18.88%)

and only 13.33 per cent of them travelled below 32 times per day.

Table 3: Reasons for occupational hazard experienced by women workers in brick industry

N = 90

Type of hazard	Reasons	Frequency	Percentage
Brick fall on the leg	Physical strain and fatigue	90	100.00
	Loss of balance / Imbalance	45	50.00
	Variation in level of floor and work surface	15	16.66
	Due to negligence	05	05.55
	Heavy physical load	16	17.77
Burning of hand	Warm Bricks	90	100.00
Crack on fingers	Handling sharp edged tools (moulds)	40	44.44
	Presence of glass pieces and stone in clay	34	37.77
Fall down	Physical strain and fatigue	53	47.70
	Repetitive movements	18	20.00
	Over exertion	14	15.55
	Variation in level of floor and work surface	38	42.22
	Due to illness	26	38.88
Skin problems	Exposure to sun and dust	64	71.11
	Warm Bricks	22	24.44
Eye injuries	Dust particle in the air	90	100.00
Stumbling	Repetitive movements	39	43.33
	Variation in level of floor and work station	24	26.66

Note: Multiple responses

Risk factors faced by women workers in brick industry and their reasons are showed in Table 3. It was clear that the brick industry women workers faced ricks are brick fall on leg, burn to hand, cracks fingers, fall down, skin damage, skin peels, eye injuries, stumbling. Regarding brick fall on the leg cent per cent of the respondents met accident by physical strain and fatigue followed by loosing balance (50.00%). Further in burn to hand, cent per cent of the respondents met accident because of warm bricks. With regard to crack fingers majority (44.44%) of the respondents met accidents by handling sharp edged tools. Fall down, about 47 per cent of the respondents

met accident because of physical strain and fatigue. With regard to skin damage, 71.11 per cent of the respondents met accident by exposure to sun and dust. Regarding eye injuries, cent per cent of the respondents met accident by dust particles in the air. Reference to stumbling, 43.33 per cent of the respondents met accident by repetitive movements followed by variation in level of floor and work station (26.66%). The result findings are in line with Mukhopadhyay (2009) regarding brick manufacturing units Gujarat states of India. The results of the present study are in line contradictory to the findings of Swasti and Jayashree (2019) [8].

Table 4: Occupational Health Problems experienced by Women Workers in brick industry

N = 90

Sl. No.	Health Problem	Always 3	Sometimes 2	Never 1
Respiratory problems				
1	Chest Tightness	-	11 (11.20)	79 (80.60)
2	Cough	24 (26.60)	57 (58.20)	9 (09.20)
3	Sneezing	18 (18.40)	-	72 (73.50)
4	Wheezing	1 (1.10)	-	89 (90.80)
5	Shortness of breath	57 (58.20)	33 (33.70)	-
6	Suffocation	83 (84.70)	-	7 (7.10)
7	Breathlessness	36 (36.70)	-	54 (55.10)
Gastrointestinal problems				
8	Stomach ache	55 (56.10)	-	35 (35.70)
9	Burning Sensation in mouth	73 (74.50)	-	17 (17.30)
10	Burning Sensation in Throat	79 (80.60)	2.2 (2.00)	9 (9.20)
Skin problems				
11	Atopic Dermatitis (Skin irritation)	12 (13.30)	4 (4.44)	74 (82.20)
12	Pruritus (Skin itching)	54 (60.0)	1 (1.10)	35 (38.88)
13	Skin burn	74 (82.20)	13 (14.44)	3 (3.33)
Eye problems				
14	Irritation of eyes (Red eyes)	63 (70.00)	27 (30.00)	-
15	Epiphoria (Watery eyes)	54 (60.00)	36(40.00)	-

(Figures in the parentheses indicate percentages)

Occupational health problems of women workers in brick industry are depicted in Table 4. The respiratory problem

includes chest tightness, cough, sneezing, wheezing, shortness of breath, suffocation, breathlessness experienced by women

workers in brick industry. It was found that majority (58.90%) of the respondents experiencing the respiratory problems moderately, further 28.90 per cent of them had severe and only 12.20 per cent of the respondents had less respiratory problems. Sahu *et al.* (2014) also found that respiratory problems, as one health problems among brick industry.

The gastrointestinal problems faced by women workers in brick industry includes stomach ache, burning sensation in mouth, burning sensation in throat, excessive salivation and tangling sensation in stomach (mucosal inflammation). Majority (77.80%) of the respondents were moderately experiencing the gastrointestinal problems followed by low (13.30%) and least number (8.90%) of the respondents experiencing severe gastrointestinal problems. Sahu *et al.* (2014) also found that gastrointestinal problems, as one health problems among brick industry.

The eye problems faced by women workers in brick industry includes irritation of eyes (red eyes), epiphoria (watery eyes). Maximum number (84.40%) of the respondents were facing severe eye problems, further 13.30 per cent of the respondents were facing moderately whereas only 2.20 per cent of the respondents were experiencing less eye problems. The results were on par with the findings of Sahu *et al.* (2013), revealed that adverse health effects caused among workers was when they were exposed to dust not only through inhalation and skin but also through eye contact.

The skin problems faced by women workers in brick industry were topic dermatitis (skin irritation), pruritus (skin itching), folliculitis (skin boil) and skin burn. It was found that majority (48.90%) of the respondents experiencing moderately, followed by severe (44.40%) and only 6.70 per cent of the respondents experiencing less problems. Sahu *et al.* (2014) also found that skin problems, as one health problems among brick industry.

Table 5: Distribution of women workers based on level of occupational health problems

N = 90

Health problems	Category	Frequency (N)	Percentage (%)
Respiratory problems	Low (<8)	11	12.20
	Moderate (8-10)	53	58.90
	Severe (>10)	26	28.90
Gastrointestinal problems	Low (<6)	12	13.30
	Moderate (6-8)	70	77.80
	Severe (>8)	08	08.90
Eye problems	Low (<4)	02	02.20
	Moderate (4-5)	12	13.30
	Severe (>5)	76	84.40
Skin problems	Low (<5)	06	06.70
	Moderate (5-8)	44	48.90
	Severe (>8)	40	44.40

(Note: Multiple responses)

Distribution of women workers based on level of occupational health problems is depicted in Table 5. With regard to the respiratory problems majority (58.90%) of the respondents belonged to moderate followed by severe (28.90%) and 12.20 per cent of the respondents belonged to low category. Regarding gastrointestinal problems majority (77.80%) of the respondents belonged to moderate category followed by low (13.30%) and severe (8.90%). With regarding eye problems, majority (84.40%) of the respondents belonged to severe category followed by moderate (13.30%) and only 2.20 per cent of the respondents belonged to low category. Regarding

skin problems, majority (48.90%) of the respondents belonged to moderate category followed by severe (44.40%) and least number of the respondents belong to low category (6.70%).

Conclusion

On the basis of the result of this study it can be concluded that the women workers experienced injuries in different body parts due to the working condition. And there were no personal protective devices to wear, so this was significant in the injuries during working. The accidents at brick industry included falls, fall from the height, cuts and burns. Surprisingly a few number of snake bites were reported at some of the units. Hence it can be concluded that there is immediate and urgent need to develop safety measurements and working area.

Reference

1. Basu K, Sahu S, Paul G. Study on construction labourers working in unorganized sectors. *Journal of Science* 2005; 1:53-60.
2. Irumjahan K, Rajan M. Study of Musculo-skeletal discomfort in female workers of brick industry. *International Journal of Science and Research*. 2017; 6(3):315-318.
3. Mukhopadhyay P. Risk factors in manual brick manufacturing in India. *Journal of HFESA Ergonomics* 2008; 22(1):16-25.
4. Prasad MA, Smrutiranjana N, Abhay BM, Nikhil D, Deepti C. Assessment of health status of the brick industry workers in Warda district. *Journal of Academy and Industrial Research*. 2016; 5(1):1-4.
5. Rabin D. Socio-economic standing of female workers in brick kilns: mistreatment to social wellbeing-An assessment on Khejuri CD blocks in Purba Medinipur district, West Bengal. *International Journal of Humanities and Social Science Invention*. 2015; 4(1):39-49.
6. Sahu S, Sett M, Gangopadhyay. An ergonomic study on teenage girls working in the manual brick manufacturing units in the unorganized sectors in West Bengal. *Indian Journal of Human Ergol*. 2010; 39:35-44.
7. Swapan Kumar R. Socio-economic conditions of women workers in some selected brick kiln in West Bengal: An empirical study with special reference to Nadia District. *International Journal of Research in Computer IT and Management*. 2012; 2(7):121-128.
8. Swati SG, Jayashree PZ. Work related Musculoskeletal problems and risk factors of brick kiln female workers. *Bulletin of Environment, Pharmacology and Life Science*. 2019; 8(6):82-84.