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Original Research Article

A descriptive study to assess the knowledge attitude and practice of employees regarding prevention of occupational health hazards in a selected sugar mill of Uttar Pradesh

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ABSTRACT

Background: Approximately 30 to 50% works exposed to occupational health hazard and 120 million workers become victim in 200000 fatalities annually. Aim of the study was to assess the knowledge attitude and practice of employees regarding prevention of occupational health hazards in a selected sugar mill of Uttar Pradesh.
Methods: A descriptive survey was done on co-operate sugar mill Baghat. Data has been taken from the co-operate sugar mill employees working on the machine and in field areas. 100 participants had chosen using convenient sampling technique. Structured knowledge questionnaire was developed to assess knowledge, structured checklist to measure practices and Likert scale to assess attitude of employees.
Results: 60% employees worked in machinery area and 40% were in field area. 37% have not faced any hazards faced, 26% has faced eye infection, 19% got fracture,18% developed respiratory problems, 17% faced crush injuries, 16% had back problem, 13% have burn injuries and 4% had history of any kind of allergy. 6% of sugar mill employees had good knowledge, 51% sugar mill employees had average and 43% employees had poor knowledge. 15% employees had good practice; 85% employees had poor 90% employees had good attitude; 10% employees had poor attitude regarding occupational health hazard.
Conclusions: Lack of knowledge regarding prevention of occupational health hazard put workers on risk of many diseases. Awareness program should be conducted regularly to enhance knowledge of workers and improve their skills.

Keywords: Attitude, Knowledge, Occupational health hazard, Perception, Sugar mill

INTRODUCTION

Occupational health hazards are factors in the workplace that pose risks to the health and well-being of employees. These hazards can be physical, chemical, biological, ergonomic, or psychosocial. There are 85% of workers in informal sector, small enterprises, migrants and agriculture who lacks occupational health coverage and 70% workers do not have any insurance against occupational diseases and injuries. Approximately 30 to 50% works exposed to occupational health hazard and 120 million become victim of occupational health hazard in 200000 fatalities annually. There is a huge burden of diseases occurs due to occupational hazards 37% from back pain, 16% of the employees suffering from hearing

loss, 13% of COPD, 11% asthma, 8% from lung cancer and depression each, 2% leukemia.[1,2]

India is the world's largest sugar consumer country. One of the most significant agro-based sectors in the nation, the sugar industry affects the livelihoods of around 5 crore farmers and their families as well as 5 lakh people who are directly employed by the sugar refineries. Approximate 700 sugar factories are there in the country and has a crushing capacity of about 340 lakh MT.[3] Employees of sugar mill get exposed to heat and solar radiation during sugarcane farming, and harvesting and during also in the industries during manufacturing of sugar from sugarcane. People work in field of sugarcane at extreme temperature for farming, taking care of plants, harvesting, cultivation and during cutting of the plants. Working in at extreme temperature put employees at risk of getting heat stroke and skin related problems or skin damage.[4] Sugarcane cutters said that wet bulb globe temperature in the field of sugarcane increased to 31.2°C which is higher than continuous worker.[5] There are so many studies in which health hazards of the working in the sugar mills has been found.[6] Lack of knowledge regarding occupational hazards put the employees at higher risk of exposure as there will be fewer preventive measures taken by employees to reduce the risk. This motivated researcher to assess the knowledge, attitude and practice of employees regarding prevention of occupational health hazards in a sugar mill.

METHODS

Study design

A descriptive survey was done to conduct this study. Setting of the study was co-operate sugar mill Baghat. Data has been taken from the co-operate sugar mill employees working on the machine and in field areas. 100 participants had chosen using convenient sampling technique. Participants who were willing to participate and understood English and Hindi language were recruited. Participants who were on leave during the period of data collection were excluded.

Measuring tools

Tool A: self-developed structured socio-demographic tool

It consisted of items describing characteristics such as age, gender, religion, educational qualification, monthly income, work experience, nature of work, hazards faced, sources of information regarding occupational health hazards, in which of these locations where you posted most frequently during last one year do you carry out your work in same area, in which shift are you frequently posted in the year and whether provide with PPE.

Section 2: structured knowledge questionnaire

The knowledge questionnaire developed in English language for assessing the knowledge regarding occupational health hazard. Content validity of the knowledge questionnaire was obtained by 5 experts and the reliability of the tool was measured by split half method. The Pearson correlation coefficient was 0.88.

It consisted of 17 multiple choice questions regarding occupational health hazards in a sugar mill. Each correct answer was scored as 1 and incorrect as 0. Minimum score was 0 and maximum score was 35. Score above 66% was considered adequate knowledge, 33-66% as moderate knowledge and <33% as inadequate knowledge.

Section:3 structured checklist to measure practices

The checklist was developed in English language for assessing the practices regarding occupational health hazard. Content validity of the checklist was obtained by 5 experts and the reliability of the tool was measured by test-retest method. The Pearson correlation coefficient was 0.86. It consisted of total 16 questions. Score above 50% considered good practices and below 50% as poor practices.

Section 4: Likert scale to assess attitude of employees

The Likert scale was developed in English language for assessing the attitude regarding occupational health hazard. Content validity was obtained by 5 experts and the reliability of the tool was measured by test-retest method. The Pearson correlation coefficient was 0.78. It consisted of total 12 questions. Score above 50% considered favorable attitude and below 50% as unfavorable attitude.

Ethical approval

Ethical permission has been obtained from Holy Family Hospital, New Delhi to conduct the research study and ethical clearance was done. Written permission was taken from the concerned authority of the sugar mill to take data from employees.

Data collection procedure

Data was collected from 12th January 2021 to 26th January 2021 in the co-operative sugar mill of Bagpat Ltd. 100 sugar mill employees were selected by convenient sampling. The samples were selected for each shift in a day almost 10-15 employees per day. An informed and written consent has taken from the employees. Explained about each tool and what it will basically it is assessing about them. Following explanation of purpose tool was administered to them. Time taken by the employees to fill the knowledge, practices and attitude was approximate 15-20 minutes. After collection of all data of 100 samples the data was entered in data master sheet and

analysis and interpretation done as per the objectives of the study.

Data analysis

Data were analysed using SPSS version 20, and Stata 11.1. Appropriate descriptive and inferential statistics was used for data analysis.

For statistical significance p value of <0.05 was considered. Chi square test was used to find association between knowledge level and practice level and sociodemographic variables.

RESULTS

Table 1 shows that out of 100 employees' majority of employees were in the age group of above 45 years (37%) 26-34 years were in (25%) 35-45 year were in (20%) 17-25 years were (19%) only. Majority were male 98 (98%) and only 2 (2%) were female. Regarding religion majority were Hindu 94 (94%), 5 (5%) were Muslim and 1% were Christian. Most of them i.e., 53 (53%) was having diploma while 23 (23%) were having higher secondary education 12 (12%) were having primary education, 11 (11%) having secondary education and only 1 (1%) was illiterate.

Table 1: Sociodemographic characteristics of participants.

Demographic variables	Frequency	Percentage (%)
Age (years)		
17-25	19	19
26-34	25	25
35-45	20	20
Above 45	36	36
Gender		
Male	98	98
Female	2	2
Religion		
Hindu	94	94
Muslim	5	5
Christian	1	1
Any other	0	0
Educational qualification		
Illiterate	1	1
Primary	12	12
Secondary	11	11
Higher secondary	23	23
Diploma	53	53
Monthly income (Rs)		
Less than 10,000	31	31
10,000-20,000	27	27
21,000-30,000	30	30
Above 30,000	12	12
Work experience (years)		
Less than 2	12	12
2-4	34	34
5-7	9	9
8-10	5	5
Above 10	40	40
Nature of work		
Field area	40	40
Machinery area	60	60
Hazards faced		
Crush injuries	17	17
Burn	13	13
Fracture	19	19

Continued.

Demographic variables	Frequency	Percentage (%)
Back problem	16	16
Head injuries	10	10
Eye infection	26	26
Respiratory problem	18	18
Allergy	4	4
No hazard faced	37	37
Source information		
Employer	10	10
Supervisor	18	18
Colleague	9	9
Health personnel	2	2
Mass media	5	5
Social worker	0	0
No information received	56	56

Table 2: Frequency, percentage, mean and standard deviation distribution of knowledge of sugar mill employees regarding prevention of occupational health hazard (n=100).

Level of knowledge/score	Frequency	Percentage (%)	Mean	Standard deviation
Good	6	6		
Average	51	51	9.21	3.923
Poor	43	43		

Table 3: Frequency, percentage, mean and standard deviation distribution of practice of sugar mill employees regarding prevention occupational health hazards (n=100).

Practice score	Frequency	Percentage (%)	Mean	Standard deviation
Good practice	15	15	6.47	2.0373
Poor practice	85	85		

Table 4: Frequency and percentage distribution of attitude of sugar mill employees regarding prevention of occupational health hazards (n=100).

Attitude score	Frequency	Percentage (%)	Mean	Standard deviation
Favourable attitude	90	90	7.12	2.852
Unfavourable attitude	10	10		

Majority, that is 31 (31%) having monthly income less than Rs 10,000, 30 (30%) having Rs 21,000-30,000 monthly income, 27 (27%) were having monthly income Rs 10,000-20,000 and only 12 (12%) having monthly income above 30,000. Majority of the employees 40 (40%) having above 10 years of experience 34 (34%) having 2-4 years' experience 12 (12%) having experience less than 2 years and 9 (9%) 5-7 years and 5 (5%) were having experience of 8-10 years. Majority of the sugar mill employees 60 (60%) worked in machinery area and rest are 40 (40%) were in field area. Majority of them have not faced 37 (37%) have no hazards faced, 26 (26%) has faced eye infection, 19 (19%) have faced fracture, 18 (18%) have faced respiratory problems, 17 (17%) faced crush injuries, 16 (16%) have back problem, 13 (13%) have burn injuries and only 4 (4%) have faced any kind of allergy.

Most of employees i.e., 56 (56%) have not received any information about occupational health hazards 18 (18%) have got information from supervisor, 10 (10%) from employer, 9 (9%) from colleagues, 5 (5%) from mass media and only 2 (2%) from health personnel.

Table 2 depicts that knowledge of sugar mill employees about occupational health hazards 6 (6%) of sugar mill employees had good knowledge, 51% sugar mill employees had average knowledge and 43% employees had poor knowledge.

Table 3 depicts that practice score of sugar mill employees about prevention of occupational health hazards 15% employees had good practice, 85% employees had poor practice.

Table 4 depicts attitude score of sugar mill employees about occupational health hazards 90% employees had

good attitude, 10% employees had poor attitude. There was no association found between socio demographic variable and knowledge level, practice and attitude of employees regarding occupation health hazards.

No statistically significant association has been found between knowledge level, practices and attitude regarding prevention of occupational health hazards and socio-demographic characteristics at $p<0.05$ level of significance.

DISCUSSION

Majority of employees were in the age group of above 45 years (37%) 26-34 years were in (25%) 35-45 year were in (20%) 17-25 years were (19%) only. Majority were male 98 (98%) and only 2 (2%) were female. Majority of the employees 40 (40%) having above 10 years of experience 34 (34%) having 2-4 years' experience 12 (12%) having experience less than 2 years and 9 (9%) 5-7 years and 5 (5%) were having experience of 8-10 years of working in sugar mills. 60% employees worked in machinery area and rest are 40% were in field area. Majority of them (37%) have not faced any hazards faced, (26% has faced eye infection, 19% got fracture, 18% developed respiratory problems, 17% faced crush injuries, 16% had back problem, 13% have burn injuries and 4% had history of any kind of allergy. Rabiul et al found that 63.3% participants have been affected due to their working environment 25% have been diagnosed any kind of skin problem, 6.3% had respiratory and cardiovascular problems each, 8.5% gastrointestinal problem, 3.5% had eye problems 8.2% headache and 5.7% allergies.[7]

More than half of the participants (56%) had not received any information about occupational health hazards, 18% got information from supervisor, 10% from employer, 9% from colleagues, 5% from mass media and 2% from health personnel.

6% of sugar mill employees had good knowledge, 51% sugar mill employees had average knowledge and 43% employees had poor knowledge. Maky et.al found 71.2% participants had poor knowledge regarding occupational hazards.[8] While Abdelwahab concluded that all participants had poor baseline knowledge before any kind of educational intervention.[9] 15% employees had good practice; 85% employees had poor practice regarding occupational health hazard. In contrary Abdelwahab found all participants had poor practices before any kind of educational intervention.[9] 90% employees had good attitude; 10% employees had poor attitude regarding occupational health hazard. Onowhakpor et al found that 83% participants had good attitude regarding occupational health hazard.[10]

CONCLUSION

60% employees worked in machinery area and rest 40% were in field area. 6% of sugar mill employees had good knowledge, 51% sugar mill employees had average knowledge and 43% employees had poor knowledge. 15% employees had good practice; 85% employees had poor practice regarding occupational health hazard. 90% employees had good attitude; 10% employees had poor attitude regarding occupational health hazard. Lack of knowledge regarding prevention of occupational health hazard put workers on risk of many diseases. Awareness program should be conducted regularly to enhance knowledge of workers and improve their skills.

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