

An operational study on Knowledge and Practices towards occupational health and safety management strategies among sculptors



Field Research Partner

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An operational study on Knowledge and Practices towards occupational health and safety management strategies among sculptors (Stone Carving, Silver Jewelleries and Bell Metal Production Workers) in Odisha, India under SFRUTI Cluster project of MSME Department, Government of Odisha/India

Introduction:

Occupational safety and health (OSH), also commonly known as occupational health and safety (OHS), occupational health, or occupational safety, refers to the protection provided to employees and workers in various industries.

Occupational health and safety encompass programs, policies, and procedures aimed at safeguarding the well-being, safety, and health of individuals employed in different jobs. The primary objective of any health and safety program is to establish the safest possible work environment and reduce the risks of workplace accidents, injuries, and fatalities. Occupational health and safety extend protection not only to employees but also to customers, the general public, and anyone else who may be affected by the work environment.

Proper implementation of health and safety measures can prevent accidents, reduce the risk of employee injuries and diseases.

Due to rapid urbanization, a significant number of people seek employment in the informal sector, which comprises small-scale units involved in the production and distribution of goods and services, mainly operated by independent, self-employed producers.

Small-scale industries play a crucial role in improving the economy and meeting the needs of local communities by generating employment and contributing to the gross national product. In countries like India, which have a large population and abundant cheap labour, occupational hygiene practices are often neglected in informal workplaces, where many workers lack access to healthcare, knowledge of safe practices, and are not covered by employment laws. Personal protective equipment (PPE) for workers is not adequately provided, and often considered a luxury rather than a necessity, leaving workers in informal sectors highly exposed to physical and chemical pollutants.

Such countries lag behind in implementing occupational hygiene and pollution control measures at worksites, especially in industries like stone carving, bell metal, and silver jewellery, which involve labour-intensive and hazardous activities posing unique safety and health risks.

The study commenced in January 2023 and was rigorously conducted for over 6 months, focusing on assessing the knowledge, practices, and perceptions of workers regarding health and safety. Special Occupational Health Camps were organized to identify prevalent injuries and potential health hazards among the workers in 100 sculptors, workers, and Small and Medium Entrepreneurs (SMEs) from three SFRUTI units supported by the Government of India through three NGOs in Bhubaneswar and Cuttack regions of Odisha, India. The findings were documented and communicated to employers and employees, along with suggested corrective measures.

Materials and Method:

Surveying and sampling were done through various phases along with health camps during the six months of study period. A descriptive research design was used. The population (n) is sculptors working in stone carving, bell metal and silver jewellery works. The three sculpture sites in Bhubaneswar and Cuttack area were surveyed and studied. Hundred workers from the three sites who are working in the sculpture site for more than 1 year were included in the study.

The investigators developed the structured questionnaire based on the guidelines issued by the Directorate General Factory Advice Service and Labour Institutes (DGFASLI, Government of India [GoI]) in collaboration with International Labour Organization. The knowledge questionnaire had three parts: knowledge related to occupational hazard and safety management, preventive measures and the use of PPE such as safety helmets, eye protectors, ear protectors, PVC/leather/rubber hand gloves, safety belt and full body harness, safety shoes, PVC/leather suit/clothing/apron (DGFASLI, GoI) and various sources of information. The practice questionnaire had six divisions focused on the sculpture sites and working environment, welfare facilities, emergency procedures, management arrangements and use of PPE at work. The health team while conducting health camps gathered the health hazard related data besides patients suffering from TB or suspected silicosis or cancer.

Observations and Results:

Age of the worker:

Age group	Numbers	Percentage
21-30	26	26
31-40	35	35
41-50	25	25
51 above	14	14

Sex: Male/Female

Sex	Frequency	Percentage
Male	69	69
Female	31	31

Qualification

Educational Qualification	Frequency	Percentage
HSC	80	80
Graduate	18	18
Post Graduate	2	2
Higher education	0	0

Marital status: Married/Unmarried

Status	Frequency	Percentage
Married	90	90
Unmarried	10	10

Work Experience: Less than 1 year/1-3 years/3-5 years/Above 5 years

Experience in years	Frequency	Percentage
<1 year	20	20
1 – 3 years	73	73
3-5 years	1	1
> 5 years	6	6

Total number of workers suffering from health hazards:

Type of Disease/Hazard	Frequency	Percentage
1. Eye problem	25	25
2. Skin disease	43	43
3. Respiratory disease	44	44
4. CNS problems	1	1
5. Headache/Constitutional symptoms	60	60
6. HTN/CVS disease	62	62
7. Ear/Nose disease	3	3

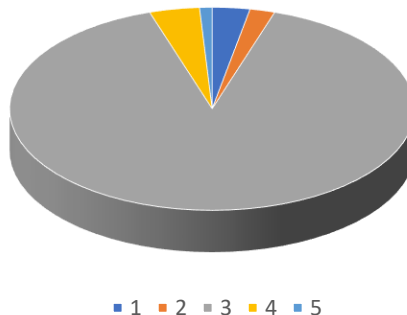
CODE	GENERAL	Yes	No	Percentage
G	Did you get any compensation from your employees for your treatment like TB or Other Diseases?	0	100	Nil

QUESTIONS	Frequency of getting 1	Frequency of getting 2	Frequency of getting 3	Frequency of getting 4	Frequency of getting 5	Frequency of getting Don't Know
1.How do you rate the health measures that are followed by your company? (From a scale of 1 to 5)	3	2	90	4	1	0
2.Has your company been	1	0	0	0	99	0

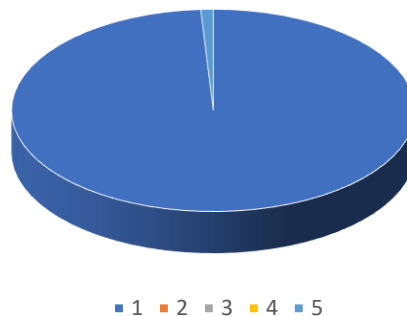
accident/incident free for the last six months?						
3.Do you have a sufficient warning and evacuation system?	10	0	0	0	80	10
4.Do you have proper health and safety at your workplace.	60	2	3	20	10	5

GRAPHICAL REPRESENTATION OF RATING OF OH SERVICES IN THE FACTOR

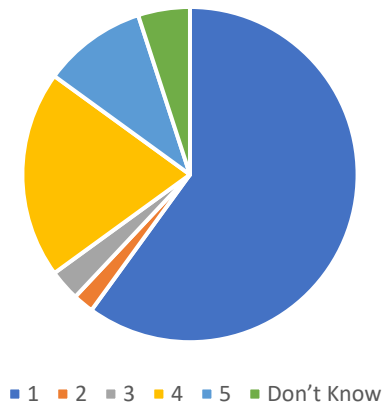
1.How do you rate the health measures that are followed by your company? (From a scale of 1 to 5)



2.Has your company been accident/incident free for the last six months? From scale 1 to 5.



4.Do you have proper health and safety at your workplace.



KAP TOWARDS OH AND SAFETY AMONG SCULPTORS:

CODE	KNOWLEDGE	Frequency of getting YES	Frequency of getting NO	Frequency of getting DON'T KNOW
K1	Are you aware about the OHS problems among sculptors?	90	08	02
K2	Did you know Fever, cough, difficulty in breathing are the major symptoms of OH at industries.	05	95	00
K3	There is no cure of Scoliosis, but early treatment can help most patients recover from TB/Scoliosis.	01	99	00
K4	TB/Scoliosis spreads through dust coming out from sculptors	00	99	01
K5	Non-infected and normal people should wear face mask/respirators to prevent Ott and safety.	10	90	00

AWARENESS/ATTITUDE:

CODE	AWARENESS	Frequency of getting YES	Frequency of getting NO	Frequency of getting DON'T KNOW
AW1	Consumption of banana/guda would result in OHH.	04	96	00
AW2	To prevent ohh Hazards should wear respirators, shoes, gloves, etc.	36	54	10
AW3	Regular health checkup required for ohhs.	90	05	05

CODE	PRACTICES	Frequency of getting YES	Frequency of getting NO	Frequency of getting DON'T KNOW
P1	Are you using any respirators/masks to avoid ott hazards?	02	98	00
P2	Are you regularly undergoing health check-ups?	06	94	00
P3	Have you ever done a TB check-up if you have any cough/fever symptoms for a long duration.	01	99	00

Discussion:

From the data presented in the preceding table, it can be observed that 69% of the participants are male, while 31% are female. This indicates a predominance of male respondents. Regarding age distribution, 35% fall within the 31-40 age group, 26% belong to the 21-30 age group, 25% are in the 41-50 age group, and 14% are aged 50 or above. The majority of respondents, therefore, fall within the 31-40 age bracket, representing a youthful segment.

Examining the education qualifications of the respondents, 80% were selected based on their HSC results, 18% have completed graduation, 2% possess a Post Graduate degree, and none have attained education beyond post-Graduate level. Consequently, a considerable proportion of employees hold at least a graduate-level education, indicating a literate workforce.

Looking at marital status, 90% of the respondents are married, while the remaining 10% are unmarried. This points to a majority of married employees in the organization.

Concerning work experience, 20% of the respondents have less than 1 year of experience, 73% have 1-3 years of experience, 1% have 3-5 years of experience, and 6% have more than 5 years

of experience. It is evident that the largest portion of the workforce falls within the 1-3 years of work experience category.

Among a group of 100 workers, the prevalent health conditions were hypertension (62%) in the age range of 31 to 50, followed by headache (60%), respiratory disease (44%), skin lesions (43%), eye diseases (25%), and ear disease (1%). Workers diagnosed with essential hypertension were referred to a higher medical facility for further examination, including ECG, Serum Lipid profile, and Cardiovascular assessment. Headaches were also commonly observed among workers, potentially related to hypertension and prolonged exposure to noise. Among those with COPD-like symptoms, chronic bronchitis and Asthma were probable diagnoses requiring evaluation at a higher medical centre. Skin lesions were primarily fungal infections and allergic dermatitis. Eye diseases included both occupational injuries and refractive errors. Strikingly, the company owners did not provide any treatment for occupational hazards; workers had to bear the expenses themselves for diagnosis, treatment, and management of these diseases.

Regarding employee perceptions, 90% rated the health measures implemented by the company with a score of 3, while 99% gave a score of 5 for maintaining an accident-free working atmosphere. However, 80% of the workers believed that the health safety practices at their workplace deserved only 1 score.

According to the Occupational Safety and Health Administration (OSHA), the risk of fatal injuries alone is more than four deaths per thousand workers over a working lifetime. While 90% of the workers reported being aware of occupational health problems among sculptors, only 8% claimed to be unaware. Many sculptors lacked knowledge about terms such as scoliosis, tuberculosis, silicosis, silico-tuberculosis, and other respiratory illnesses. Surprisingly, 90% of sculptors believed that wearing masks, gloves, and other protective gear had no impact on preventing occupational health hazards (OHHs). However, regular health checkups were common, indicating the prevalence of OHHs in this group. The findings suggest a need for increased awareness and education regarding OHHs among workers and the importance of proper work practices and personal protective equipment (PPE).

Limitations:

Limitations of the study include a focus on specific health and safety aspects within one particular company and environment. A broader study encompassing more variables across different cultural settings and multiple companies may yield different and more comprehensive conclusions. Additionally, employees may not always provide accurate answers in fear of being unfavourable to the organization, and peer influence could also affect their responses.

Conclusion:

In conclusion, the analysis indicates that the factories have adopted scant to moderate health and safety measures for employees in line with the requirements of the factories act. The majority of employees don't demonstrate awareness of health and safety measures in the workplace, and management's efforts in implementing these practices are effective. The factory's inefficiency in safeguarding employee well-being and ensuring organizational success is evident from the study's outcomes. Thus, training and awareness campaigns is need of the hour to overcome the current situation.



Workers in Bell Metal Industry



Workers in Silver Jewellery Industries



Health Check Up camp in Stone Crushers/Stone Carving Industries



Suspected TB and Silicosis Patients