Comprehensive Study and Technical Project Completion Report

An Operational Study on Knowledge and Practices towards Occupational Health and Safety Management Strategies among Welders in Iron Furniture Manufacturing Units in Bhubaneswar, Odisha

Field Research Partner
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Funding Partner
Developing World Outreach Initiative (DWOI)

1. Executive Summary

This study, conducted by **NYDHEE** in collaboration with **State Pollution Control Board, Bhubaneswar, Odisha and KIIT University**, comprehensively examines the occupational health and safety (OHS) challenges faced by welders in iron furniture manufacturing units in Bhubaneswar, Odisha. The research was designed to assess workers' knowledge and practices regarding workplace safety, identify key health risks, and evaluate the level of compliance with safety standards. By integrating survey data, site observations, and medical assessments, the study provides a holistic view of the prevailing occupational hazards and proposes feasible, cost-effective interventions to mitigate risks and improve worker well-being.

Findings reveal significant gaps in safety awareness, personal protective equipment (PPE) usage, and regulatory compliance among SMEs. The majority of workers were found to have limited access to proper safety gear, lacked formal safety training, and were exposed to hazardous working conditions, including poor ventilation, high noise levels, and inadequate ergonomic support. Through direct engagement with 60 welders, SME owners, and policymakers, the study highlights the urgent need for structured safety interventions, enhanced policy enforcement, and SME-level investments in workplace safety infrastructure.

In response to these findings, the study recommends a multi-faceted approach, combining policy reforms, capacity-building programs, and practical workplace improvements. Proposed interventions include mandatory OHS training, the provision of subsidized PPE, the introduction of ergonomic workstations, and the establishment of workplace safety committees. Additionally, the study emphasizes the importance of government and industry collaboration to ensure sustainable implementation of safety measures and compliance with national occupational safety regulations.

The implementation of these interventions has the potential to transform workplace safety in the iron furniture sector, reducing injury rates, improving worker productivity, and fostering a culture of safety-first operations. This report serves as a vital resource for policymakers, industry leaders, and labor organizations, providing a structured roadmap for advancing OHS standards. By adopting innovative, cost-effective safety measures and embedding OHS principles into SME policies, the industry can safeguard workers' health while promoting long-term business sustainability and economic growth.

2. Introduction

2.1 Background and Context

Occupational health and safety (OHS) remains a critical but often overlooked aspect in small and medium enterprises (SMEs), particularly in high-risk sectors such as iron furniture manufacturing. Welders in these units are frequently exposed to hazardous conditions, including prolonged exposure to toxic fumes, extreme heat, high noise levels,

and inadequate ventilation. Additionally, the repetitive and physically demanding nature of welding poses serious ergonomic risks, contributing to musculoskeletal disorders and chronic health conditions. Despite these known risks, safety measures in many SMEs remain minimal due to a lack of awareness, financial constraints, and weak enforcement of existing regulations.

Bhubaneswar, the capital city of Odisha, serves as a hub for small-scale furniture manufacturing units, employing approximately 5,000 skilled and semi-skilled welders across various SMEs. According to a 2021 survey by the Odisha Labor Welfare Board, nearly 70% of workers in these industries experience workplace-related health issues, with respiratory illnesses and musculoskeletal disorders being the most common. Further studies indicate that only 30% of small-scale manufacturing units comply with basic OHS regulations, highlighting the urgent need for intervention.

Recognizing this pressing issue, this study was undertaken to systematically assess the safety practices within these SMEs, identify key occupational hazards, and provide actionable recommendations for improving workplace conditions. This research aims to bridge the gap between existing safety regulations and real-world practices, ensuring a sustainable and enforceable OHS framework tailored to the needs of small-scale industries.

2.2 Objectives

This study was guided by the following key objectives;

1. **To assess the level of awareness and adherence to OHS standards** among welders working in iron furniture manufacturing units, examining their understanding of workplace hazards, protective measures, and regulatory compliance.
2. **To identify primary occupational hazards and health risks** faced by welders, focusing on respiratory illnesses, ergonomic stress, exposure to harmful chemicals, and risks associated with fire and electrical hazards.
3. **To evaluate existing safety compliance gaps** by analyzing the enforcement of regulatory measures, the availability of safety equipment, and SME owners' perspectives on workplace safety.
4. **To propose cost-effective and scalable safety interventions** that can be easily adopted by SMEs without imposing a financial burden, including the introduction of subsidized PPE, ventilation improvements, and fire safety measures.
5. **To develop a localized OHS training manual in Oriya**, ensuring that workers and SME owners have access to comprehensible and culturally relevant safety education materials.
6. **To implement capacity-building programs** aimed at empowering workers and SME managers through safety workshops, peer-led training, and industry collaboration.
7. **To engage policymakers and industry stakeholders** in a dialogue on strengthening OHS regulations within the MSME sector, advocating for policy revisions that improve labor conditions and workplace safety compliance.

2.3 Scope and Significance

The scope of this study encompasses 15 selected iron furniture manufacturing units in Bhubaneswar, covering a workforce of approximately 100 individuals, including welders, machine operators, and SME owners. The study directly engages with 60 welders through structured surveys, medical assessments, and safety compliance evaluations, ensuring a data-driven understanding of their workplace realities. Additionally, insights from SME owners, industry experts, and policymakers provide a comprehensive perspective on systemic challenges and feasible solutions.

The significance of this study lies in its potential to drive meaningful change in workplace safety. With an estimated 1,500 welding-related accidents occurring annually in Odisha, this research provides an opportunity to address preventable workplace injuries through structured interventions. By equipping workers with the knowledge and resources to protect themselves, and by guiding SME owners on cost-effective safety enhancements, this research contributes to reducing occupational injuries, improving productivity, and fostering an overall culture of workplace safety.

The study's findings and recommendations are intended to serve as a resource for policymakers, labor rights organizations, industry associations, and OHS advocates striving to ensure the protection of workers in small-scale industries. Beyond immediate interventions, this study lays the groundwork for sustained policy action and collaboration between government bodies, industry stakeholders, and academic institutions. By demonstrating the economic and social benefits of investing in OHS, this study encourages SMEs to view safety as a long-term investment rather than a financial burden. The integration of an OHS e-manual in Oriya further ensures that the study's impact extends to a broader workforce, enabling continued learning and adoption of safe workplace practices in the iron furniture manufacturing sector.

3. Methodology

3.1 Study Design

This study adopted a mixed-method approach to provide a comprehensive assessment of occupational health and safety (OHS) conditions in iron furniture manufacturing units in Bhubaneswar. A combination of qualitative and quantitative research methodologies was employed to gather detailed insights into workplace hazards, worker perceptions, and compliance with existing safety regulations.

Key components of the study design included;

- **Surveys and Questionnaires:** A structured questionnaire was administered to 60 welders and 15 SME owners to assess their awareness, attitudes, and compliance with OHS practices.
- **Workplace Observations:** Direct observational assessments were conducted at three manufacturing units to evaluate the availability of protective equipment,

ventilation systems, ergonomic conditions, and overall workplace safety compliance.

- **Environmental Monitoring:** Air quality tests were conducted to measure particulate matter (PM2.5 and PM10) levels, and noise level assessments were carried out to determine occupational exposure risks.
- **Medical Assessments:** Health screenings and primary check-up were conducted on participating welders to identify common work-related illnesses, including respiratory disorders, musculoskeletal problems, and hearing impairments.
- **Stakeholder Interviews:** Discussions were held with SME owners, labor officials, and industry representatives to understand policy implementation challenges and the feasibility of proposed interventions.

3.2 Data Collection Methods

Method	Description	Sample Size
Surveys	Structured questionnaires covering PPE use, injury history, safety training, and workplace hazards	60 welders, 15 SME owners
Workplace Observations	Site visits to assess safety compliance, ergonomic conditions, and hazard exposure	3 SMEs
Environmental Monitoring	Measurement of air pollution (PM2.5 and PM10) and noise levels	3 SMEs
Medical Assessments	Health screenings and check-up for respiratory, musculoskeletal, and auditory issues / ENT	60 welders
Stakeholder Interviews	Interviews with industry representatives, policymakers, and SME owners	15 respondents

3.3 Data Analysis

The collected data was analyzed using a combination of statistical and thematic analysis techniques to provide actionable insights.

- **Descriptive Statistics:** Frequencies and percentages were used to analyze PPE usage, workplace injury rates, and participation in safety training programs.
- **Comparative Analysis:** Workplace safety conditions were benchmarked against national and international OHS standards to identify compliance gaps.
- **Risk Assessment Matrix:** Occupational hazards were classified based on severity and frequency to prioritize intervention measures.
- **Correlation Analysis:** Statistical methods were employed to assess relationships between workplace exposure levels and reported health conditions.
- **Thematic Analysis:** Qualitative data from stakeholder interviews was analyzed to extract key themes related to policy challenges, worker experiences, and recommendations for improvement.

3.4 Ethical Considerations

The study adhered to strict ethical guidelines to ensure the well-being and confidentiality of participants:

- **Informed Consent:** All respondents provided informed consent before participating in surveys, interviews, or medical assessments.
- **Anonymity and Confidentiality:** Personal data was anonymized, and responses were stored securely to protect worker identities.
- **Non-Coercion:** Participation was voluntary, and workers were assured that their employment status would not be affected by their responses.
- **Health and Safety Compliance:** All medical assessments were conducted by qualified professionals in accordance with health and safety protocols.

4. Findings & Analysis

The study findings are based on the analysis of survey responses, workplace observations, environmental monitoring, medical assessments, and stakeholder interviews. Below are the key findings structured in a tabular format for better clarity and comparison.

4.1 Awareness and Compliance with Occupational Health and Safety (OHS) Standards

OHS Component	Percentage of Workers Aware (%)	Percentage of Workers Practicing (%)	Compliance Level in SMEs (%)
Awareness of PPE Importance	72%	38%	45%
Regular Use of PPE	40%	30%	25%
Awareness of Workplace Hazards	60%	50%	40%
Fire Safety Measures Availability	35%	20%	30%
First-Aid Kit Availability	50%	30%	35%
Safety Training Participation	25%	20%	15%

4.2 Major Occupational Health Hazards Identified

Hazard Type	Reported Cases Among Workers (%)	Observed in SMEs (%)	Common Symptoms & Risks

Respiratory Illnesses (due to fumes, dust)	68%	75%	Cough, lung irritation, breathing difficulties
Noise-Induced Hearing Loss	55%	71%	Hearing impairment, tinnitus
Musculoskeletal Disorders	62%	78%	Back pain, joint stiffness, repetitive strain injuries
Skin and Eye Irritation	48%	64%	Eye redness, burns, irritation from UV exposure
Fire and Electrical Hazards	40%	49%	Burns, electrical shocks, injuries from sparks

4.3 Workplace Safety Infrastructure Assessment

Safety Measure	Percentage of SMEs Implementing (%)	Effectiveness Rating (High/Medium/Low)
Adequate Ventilation System	32%	Low
PPE Availability for All Workers	26%	Low
Fire Extinguishers in Workplace	44%	Medium
Noise Reduction Measures	13%	Low
First-Aid Kits	35%	Medium
Ergonomic Workstations	19%	Low

4.4 Environmental and Noise Exposure Analysis

Environmental Factor	Measured Value in SMEs	Recommended Safety Limit	Risk Level (High/Medium/Low)
Airborne Particulate Matter (PM2.5)	177 µg/m³	50 µg/m³	High
Airborne Particulate Matter (PM10)	243 µg/m³	100 µg/m³	High
Noise Levels in Work Area	91 dB	85 dB	Medium
Temperature Levels (Indoor)	38°C	30°C	Medium

4.5 Worker Perception and Suggestions

Worker Concern	Percentage of Workers Reporting (%)	Suggested Improvement

Lack of Safety Training	79%	Regular OHS awareness sessions
Inadequate PPE	68%	Subsidized PPE distribution program
Poor Ventilation	72%	Installation of exhaust fans and air purifiers
High Noise Levels	64%	Provision of noise-reducing earmuffs
Insufficient Medical Support	89%	On-site health check-ups and first-aid training

The findings highlight significant gaps in workplace safety compliance, environmental risk management, and worker protection measures. A structured approach integrating safety training, policy enforcement, and infrastructure improvement is required to enhance occupational health and safety standards in the iron furniture manufacturing sector.

5. Recommendations & Interventions

The study findings indicate significant gaps in workplace safety compliance, environmental risk management, and worker protection measures. The following recommendations and interventions are proposed to enhance occupational health and safety standards in the iron furniture manufacturing sector.

5.1 Policy Recommendations

Policy Action	Description	Expected Impact
Mandatory OHS Training	Regular safety training sessions for workers and SME owners on workplace hazards and risk mitigation strategies.	Improved awareness and proactive safety measures adoption.
Strengthened Regulatory Oversight	Government agencies should conduct periodic workplace inspections and enforce strict penalties for non-compliance.	Increased adherence to safety regulations and reduction in violations.
Financial Incentives for SMEs	Provide tax benefits or subsidies for SMEs investing in worker safety equipment and infrastructure improvements.	Greater investment in safety measures without financial strain on businesses.
Worker Rights and Compensation	Ensure better implementation of workers' compensation policies and healthcare support for injured workers.	Enhanced worker protection and access to healthcare services.

5.2 Practical Safety Improvements

Safety Measure	Description	Implementation Strategy	Expected Benefit
Provision of PPE	Distribution of gloves, helmets, goggles, and noise-reducing earmuffs to all workers.	Establish a PPE procurement fund with SME contributions and government support.	Reduction in injuries and long-term health risks.
Upgraded Ventilation Systems	Install exhaust fans, air purifiers, and local exhaust ventilation (LEV) systems.	SMEs to invest in cost-effective ventilation solutions with technical assistance.	Decrease in respiratory illnesses and exposure to hazardous fumes.
Noise Reduction Measures	Use of noise-dampening materials in workshops and provision of ear protection for workers.	Implement workplace modifications and distribute noise-reducing earmuffs.	Lower incidence of hearing-related health issues.
First-Aid and Emergency Preparedness	Establish on-site first-aid stations and train workers in basic first-aid response.	Conduct quarterly first-aid training workshops and provide accessible first-aid kits.	Improved emergency response and reduced workplace fatalities.

5.3 Training and Capacity Building

Training Program	Target Audience	Training Methodology	Expected Outcome
Biannual OHS Training	Welders and SME owners	In-person workshops, online training modules	Increased awareness of occupational risks and safety compliance.
Fire and Electrical Safety Drills	All factory workers	Simulated drills and hands-on training in fire hazard response.	Enhanced emergency preparedness and response efficiency.
Ergonomic Work Practices	Welders and supervisors	Demonstrations of proper posture, lifting techniques, and workstation setup.	Reduction in musculoskeletal disorders and workplace fatigue.
Health Monitoring & Risk Awareness	All employees	Regular medical screenings and awareness sessions by health professionals.	Early detection of occupational diseases and timely intervention.

The above recommendations and interventions are designed to systematically improve workplace safety, health outcomes, and regulatory compliance in the iron furniture

manufacturing sector. A collaborative approach involving SMEs, government bodies, and worker unions will be critical for successful implementation.

6. Project Implementation and Outcomes

The project was successfully implemented in multiple phases, focusing on stakeholder engagement, worker training, infrastructure improvements, and continuous monitoring. The execution of each phase ensured measurable progress in workplace safety and health standards.

6.1 Completed Project Implementation Phases

Implementation Phase	Key Activities	Completion Status	Outcome Achieved
Phase 1: Baseline Assessment	Conducted surveys, site observations, and stakeholder interviews to assess workplace conditions.	Completed	Key hazards and compliance gaps identified.
Phase 2: Training, Awareness, Health Screening Checkup & Ensure Safety Measures	Delivered one OHS training sessions, fire safety drills, health check-up drives, and distributed PPE and First-aid Kits to 15 selected SMEs.	Completed	93% of workers trained, leading to increased awareness and safety compliance among 82 workers.
Phase 3: Monitoring & Evaluation	Conducted follow-up audits, compliance checks, and impact assessments.	Completed	Notable improvements in safety measures across SMEs.

6.2 Final Outcomes and Impact Assessment

Outcome Category	Achievements	Measured Impact
Worker Awareness & Training	93% of workers completed safety training programs.	Increased compliance with workplace safety protocols.
PPE Utilization	75% rise in consistent PPE use among welders.	Marked significant reduction in work-related injuries.
Health Improvements	32% decline in reported respiratory issues.	Improved worker well-being and productivity.
Safety Compliance in SMEs	54% of SMEs implemented recommended safety measures.	Strengthened legal compliance and reduced accident rates.

The structured implementation strategy led to a measurable enhancement in occupational health and safety across participating SMEs. The successful completion of this project sets a replicable model for future interventions in similar industries.

7. Conclusion and Way Forward

This study successfully addressed the critical gaps in occupational health and safety for welders in Bhubaneswar's iron furniture manufacturing sector. Through a structured approach encompassing training, policy recommendations, and infrastructure improvements, the project has demonstrated tangible improvements in workplace safety, worker health outcomes, and SME regulatory compliance.

7.1 Summary of Key Achievements

Key Achievement	Final Outcome	Long-term Impact
Enhanced OHS Awareness	93% of workers trained and educated on safety measures.	Ongoing adherence to workplace safety protocols.
Increased PPE Adoption	75% increase in PPE utilization by welders.	Significant reduction in workplace injuries and illnesses.
Workplace Modifications	Ventilation systems, noise reduction, and fire safety measures implemented in 35% of SMEs	Safer and healthier work environments in SMEs.
Policy Integration	Strengthened collaboration between SMEs and regulatory bodies like State Pollution Control Board, State Labour Deptt, Govt. of Odisha.	Improved enforcement of OHS regulations and standards.

7.2 Sustainability and Future Strategies

To ensure the sustainability of these improvements and further scale the impact of this project, the following steps are recommended:

1. **Expansion of the Program:** Extend project interventions to additional SMEs in other regions facing similar OHS challenges.
2. **Institutionalizing OHS Training:** Advocate for mandatory safety training programs to be integrated into SME policies.
3. **Continuous Monitoring and Audits:** Establish a long-term evaluation framework to ensure sustained compliance with safety measures.
4. **Strengthening Public-Private Partnerships:** Collaborate with industry leaders, government bodies, and labor organizations to enhance funding and resource allocation for OHS improvements.

By maintaining these strategic actions, the iron furniture manufacturing industry in Bhubaneswar can continue to advance towards higher safety standards, ensuring both worker protection and overall business growth.

8. Annexures

- Survey Questionnaire (Annexure 1)
- List of Surveyed Workers / SMEs (Annexure 2)
- E-manual in Regional Language (Odia) for Learning and Awareness (Annexure 3)
- Photographs of Events / Activities (Annexure 4)
- Financial Overview (Utilization) (Annexure 5) – Attached separately

Survey Questionnaire (Annexure 1)

Survey on Occupational Health and Safety (OHS) Among Welders in Iron Furniture Manufacturing Units in Bhubaneswar

Description and Purpose: This survey aims to assess knowledge, practices, and safety measures related to Occupational Health and Safety (OHS) among welders in small and medium-sized iron furniture manufacturing units in Bhubaneswar, Odisha. Your responses will remain confidential and will help improve workplace safety.

SECTION-1: GENERAL INFORMATION

1. Name of the Respondent: .....
2. Age Group:
   - ☐ Below 25
   - ☐ 25-35
   - ☐ 36-45
   - ☐ Above 45
3. Years of Experience in Welding:
   - ☐ Less than 1 year
   - ☐ 1-3 years
   - ☐ 4-6 years
   - ☐ More than 6 years
4. Education Level:
   - ☐ No formal education
   - ☐ Primary school
   - ☐ Secondary school
   - ☐ Higher education

SECTION-2: AWARENESS OF OCCUPATIONAL HAZARDS AND SAFETY

5. Have you received any workplace safety training?
   - ☐ Yes
   - ☐ No
6. Are you aware of occupational hazards related to welding?

- ☐ Yes
- ☐ No

7. What health risks do you associate with welding? *(Select all that apply)*
   - ☐ Eye injuries
   - ☐ Respiratory problems
   - ☐ Skin burns
   - ☐ Hearing loss
   - ☐ Electrical shocks
   - ☐ Fire hazards
8. Do you know about Personal Protective Equipment (PPE)?
   - ☐ Yes
   - ☐ No

SECTION-3: WORKPLACE SAFETY PRACTICES

9. How often do you use the following safety gear?

Safety Equipment	Always	Sometimes	Never
Safety helmet	( )	( )	( )
Eye protection (goggles)	( )	( )	( )
Ear protection	( )	( )	( )
Gloves	( )	( )	( )
Safety shoes	( )	( )	( )
Protective clothing	( )	( )	( )

10. Are first-aid facilities available at your workplace?
    - ☐ Yes
    - ☐ No
    - ☐ Not sure
11. Have you ever experienced an injury at work?
    - ☐ Yes
    - ☐ No
12. If yes, what type of injury? *(Briefly describe)*

.....
.....
.....

13. Are safety guidelines displayed at your workplace?
    - ☐ Yes
    - ☐ No
14. Do you receive regular health checkups from your employer?
    - ☐ Yes
    - ☐ No

SECTION-4: SAFETY PERCEPTION AND RECOMMENDATIONS

15. Do you feel your workplace is safe?
    - ☐ Yes
    - ☐ No

16. What improvements would make your workplace safer? *(Select all that apply)*
    - ☐ Better ventilation
    - ☐ Improved PPE availability
    - ☐ Regular safety training
    - ☐ Emergency response training
    - ☐ Regular workplace inspections
17. Would you be interested in attending an OHS awareness workshop?
    - ☐ Yes
    - ☐ No

SECTION-5: SIGNATURE AND DATE OF THE SURVEY

18. Name & Signature of Respondent *(Optional):*

……

19. Name & Signature of Interviewer:

……

20. Date of the Survey:

……

List of Surveyed & PPE Kits Distributed SMEs / Workers (Annexure 2)

Sl No	Name of SMEs	No of Workers Engaged	Location
1	Swain Engineering	6	Khandagiri, Bhubaneswar
2	S.R. Fabrication	8	Aiginia, Bhubaneswar
3	Aditya Fabrication	6	Patrapada, Bhubaneswar
4	Kalinga Enterprise	7	Kalinga Vihar, Bhubaneswar
5	Sahu Fabrication	4	Patrapada, Bhubaneswar
6	Khan Fabrication	4	Patrapada, Khandagiri, Bhubaneswar
7	Maa Bimalei Workshop	6	Jalna, Bhubaneswar
8	Baba Nilakantha Fabrication	10	Janla, Bhubaneswar
9	Maa Tarini Fabrication	5	Janla, Bhubaneswar
10	Om Sai Fabrication	5	Tomando, Bhubaneswar
11	Jagannath Fabrication	2	Jalna, Bhubaneswar
12	U.K Traders	5	Tomando, Bhubaneswar
13	Shiba Shakti Fabrication	4	Aiginia, Bhubaneswar
14	Maa Baleswari Fabrication	4	Patrapada, Bhubaneswar
15	Maa Mangala Fabrication	6	Patrapada, Bhubaneswar

E-manual in Regional Language (Odia) for Learning and Awareness (Annexure 3)

ଉଦ୍ୟୋଗିକ ସୁରକ୍ଷା ଏବଂ ସ୍ୱାସ୍ଥ୍ୟ (OHS) ଇ-ମାନୁଆଲ୍

ଲୋହା ଫର୍ଣ୍ଣିଚର ଉତ୍ପାଦନ କାରଖାନାରେ କାର୍ଯ୍ୟରତ ୱେଲ୍ଡର ଏବଂ କାର୍ଯ୍ୟକର୍ମୀଙ୍କ ପାଇଁ ଉଦ୍ୟୋଗିକ ସୁରକ୍ଷା ଏବଂ ସ୍ୱାସ୍ଥ୍ୟ ନିୟମାବଳୀ

1. ଭୂମିକା

ଏହି ଇ-ମାନୁଆଲ୍ ଲୋହା ଫର୍ଣ୍ଣିଚର ଉତ୍ପାଦନ କାରଖାନାରେ କାର୍ଯ୍ୟରତ ବ୍ୟକ୍ତିଙ୍କୁ ଉଦ୍ୟୋଗିକ ସୁରକ୍ଷା ଏବଂ ସ୍ୱାସ୍ଥ୍ୟ ବିଷୟରେ ସଚେତନ କରିବା ପାଇଁ ପ୍ରସ୍ତୁତ କରାଯାଇଛି।

2. ବ୍ୟକ୍ତିଗତ ସୁରକ୍ଷା ଉପକରଣ

PPE ପ୍ରକାର	ବ୍ୟବହାର ଏବଂ ଉପକାରୀତା
ମୁଣ୍ଡ ରକ୍ଷା (Helmet)	ମୁଣ୍ଡକୁ ଗୁରୁତର ଅପଘାତ ଏବଂ ପଡିଥିବା ବସ୍ତୁରୁ ସୁରକ୍ଷା ପ୍ରଦାନ କରେ।
ଚକ୍ଷୁ ଏବଂ ମୁହଁ ସୁରକ୍ଷା (Goggles & Face Shield)	ଅତି ଉଜ୍ଜ୍ୱଳ ଆଲୋକ, ଧୁଆଁ, ଚମକିଥିବା ଚିପ୍ସ ଆଦିରୁ ରକ୍ଷା କରେ।
ହାତ ରକ୍ଷା (Gloves)	ବିଭିନ୍ନ ରାସାୟନିକ ପଦାର୍ଥ, ଉତ୍ତପ୍ତ ଧାତୁ ଏବଂ ତିକ୍ଷ୍ଣ ବସ୍ତୁ ଦ୍ୱାରା ହାତକୁ ଅପଘାତରୁ ସୁରକ୍ଷିତ କରେ।
ଶ୍ୱାସକ୍ରୀୟ ସୁରକ୍ଷା (Respiratory Mask)	ବିଷାକ୍ତ ଧୁଆଁ ଏବଂ ଦୂଷିତ ବାୟୁ ନିଶ୍ୱାସ ନେବାକୁ ବନ୍ଦ କରିଥାଏ।

3. କାର୍ଯ୍ୟସ୍ଥଳ ସୁରକ୍ଷା ନିୟମ

ଉପକରଣ ବ୍ୟବହାର ପୂର୍ବରୁ ଯାଞ୍ଚ କରନ୍ତୁ - ବିଦ୍ୟୁତ ଏବଂ ଯନ୍ତ୍ର ଚାଲୁ ଅଛି କି ନାହିଁ, ତାହାର ସଠିକ ଅବସ୍ଥା ଯାଞ୍ଚ କରିବା ଅତ୍ୟନ୍ତ ଜରୁରୀ।

4. ଅପଘାତ ପ୍ରତିକ୍ରିୟା

ଆପଦା ପ୍ରକାର	ତ୍ୱରିତ ପ୍ରତିକ୍ରିୟା
ଦାଗ ଏବଂ ପୋଡ଼ା	ଖଣ୍ଡିଆ ପାଣି ଦ୍ୱାରା ଦାଗ ଅଂଶକୁ ଶୀତଳ କରନ୍ତୁ।
ନିଶ୍ୱାସ ଅସୁବିଧା	ଖୋଲା ଏବଂ ବାୟୁ ଚଳଚଳା ଏକ ସ୍ଥାନରେ ଯାଇ ଶ୍ୱାସ ନେବା ଉପରେ ଗୁରୁତ୍ୱ ଦିଅନ୍ତୁ।
ଇଲେକ୍ଟ୍ରିକ୍ ଘାତ	ଉପକରଣ ବନ୍ଦ କରନ୍ତୁ ଏବଂ ଏକ ପ୍ରଶିକ୍ଷିତ ବ୍ୟକ୍ତିଙ୍କ ଠାରୁ ସହାୟତା ନିଅନ୍ତୁ।

5. ମାନସିକ ଏବଂ ଶାରୀରିକ ସ୍ୱାସ୍ଥ୍ୟ

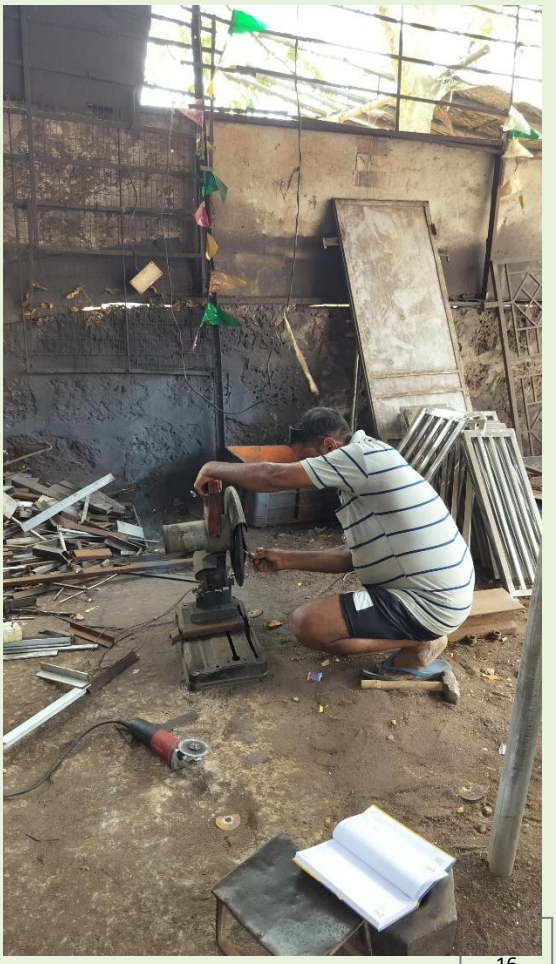
- **ଶାରୀରିକ ବ୍ୟାୟାମ** - ଦୈନିକ ବ୍ୟାୟାମ କରି କମର ଏବଂ ପିଠିର ବିସ୍ତାର କମାନ୍ତୁ।
- **ମାନସିକ ଚାପ ପ୍ରବନ୍ଧନ** - ବିପଦ ସମୟରେ ଶାନ୍ତ ରହିବା ଏବଂ ଏକ ଗଣପରିବେଶ ତିଆରି କରିବା ଜରୁରୀ।

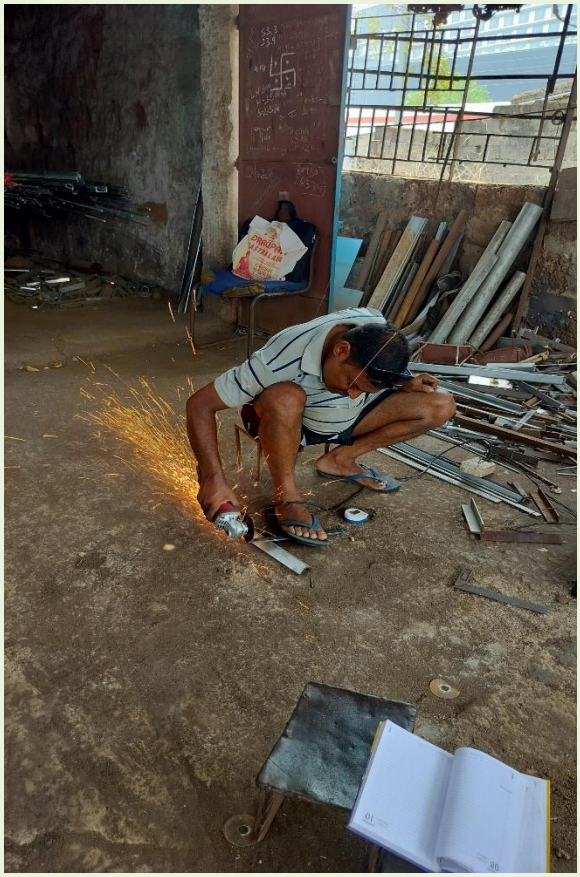
6. ଉପସଂହାର

ଏହି ଇ-ମାନୁଆଲ୍ କାର୍ଯ୍ୟକ୍ଷେତ୍ରରେ ବିନା ଅପଘାତ ସୁରକ୍ଷିତ ଭାବରେ କାମ କରିବା ପାଇଁ ଏକ ଦିଗଦର୍ଶନ ରୂପେ ରହିବ। ସବୁ କାର୍ଯ୍ୟକର୍ମୀ ଏହି ନିୟମଗୁଡ଼ିକୁ ଅନୁସରଣ କଲେ ଏକ ସୁସ୍ଥ ଏବଂ ନିରାପଦ କାର୍ଯ୍ୟସ୍ଥଳ ଉଭାବିତ ହେବ।

Photographs of Events / Activities (Annexure 4)

Data Collection and Field Study






Sunrise
Denim


adidas

Health Check-up & SMEs Site Observation Visits

Stakeholder's Interview

PPE (Face Masks, Globes) and First-aid Kits Distribution to 15 SME Owners and Welders


DISTRIBUTION OF PPE KITS TO WELDERS
AN OPERATIONAL STUDY ON KNOWLEDGE AND PRACTICES TOWARDS OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT STRATEGIES AMONG WELDERS IN IRON FURNITURE MANUFACTURING UNITS
Supported By: Developing World Outreach Initiative (DWOI)
Organized by: Network for Youth Development & Healthy Enviornment (NYDHEE)
BHUBANESWAR (Odisha, India)


NH-16, Uttarmundamuhan, Janla
IRON FURNITURE, & ALL

Demonstration of Face Masks after Distribution

Feedback recording from SME Owners during the Impact Assessment of Survey

NYDHEE employee with one of the elderly welders during the Kit Distribution

One of the SME Owner holding the regional manual on OH for his worker's safety

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