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A STUDY ON AWARENESS OF LABOUR SAFETY AND WELFARE MEASURES IN IRON AND STEEL INDUSTRY

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ABSTRACT

This study explores the awareness of safety and welfare measures among employees in the iron and steel industry, a sector where maintaining a safe and supportive work environment is critical due to the inherent risks involved. Ensuring workers are knowledgeable about safety protocols and welfare programs is essential for preventing accidents and enhancing overall well-being. This study examines the awareness of safety and welfare measures among employees in the iron and steel industry, focusing on different age groups. The research involved 150 participants, using a quantitative approach with a structured questionnaire to assess their knowledge and practices related to safety protocols and welfare programs. Results show that 65.5% of respondents are aware of safety measures, with the 35-44 age group displaying the highest awareness. In contrast, 34.5% lack safety awareness, indicating a need for improved communication. For welfare measures, 52.33% of respondents are aware, particularly among those aged 35-44, yet a significant 47.67% remain unaware. The study suggests that younger employees under 25 show the lowest awareness for both safety and welfare measures, highlighting a gap that requires targeted educational initiatives. The findings emphasize the importance of comprehensive training and information dissemination to enhance workplace safety and welfare awareness.

KEYWORDS: *Iron And Steel Industry, Labour Safety, Welfare Measures, Worker Awareness, Occupational Health and Safety.*

1) INTRODUCTION

In the bustling world of factories, where innovation and production thrive, the welfare and safety of employees are the cornerstones of responsible industry. Every worker deserves a safe and nurturing environment that not only protects their physical well-being but also enhances their quality of life. Employee safety in factories encompasses vigilant compliance with stringent protocols and emergency readiness, while welfare extends to health, financial security, and equitable treatment. Beyond mere legal obligations, fostering a culture of care and accountability is a moral imperative. In the pages ahead, we will explore the vital realm of employee safety and welfare in factories, understanding the laws, best practices, and evolving trends that shape this critical landscape. Together, we embark on a journey to ensure that every factory worker enjoys a work environment where their safety and well-being are the highest priorities, propelling industry and humanity forward hand in hand.

2) REVIEW LITERATURE

Md Ulang N et al. (2014) studied on construction workers' awareness and usage of Personal Protective Equipment (PPE). It emphasizes the significance of proper PPE selection and highlights a moderate level of awareness among workers. Factors influencing PPE usage, such as comfort and perceived effectiveness, are identified. The review underscores the need for improved education and training to enhance worker understanding and encourage voluntary compliance with PPE regulations, ultimately aiming to reduce workplace accidents on construction sites.

Jasiulewicz-Kaczmarek, K. Szwedzka, and M. Szczuka (2015) investigated In the article "Behaviour-Based Intervention for Occupational Safety – Case Study", the efficacy of behaviour-based interventions in enhancing safety awareness within occupational settings. Through a focused examination of case studies, the authors demonstrate how such interventions can effectively promote safety consciousness among workers. By linking behaviour-based strategies with safety awareness, the article emphasizes the practical importance of fostering a culture of vigilance and precaution in workplaces. This research underscores the crucial role that proactive

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measures, driven by behaviour-based interventions, play in ensuring the well-being of employees and minimizing occupational hazards.

Petkovic, V. Nikolic, and T. Vukić (2023), the authors examine the level of safety awareness among healthcare professionals regarding regulatory compliance. Through their case study, they shed light on the critical importance of understanding and adhering to occupational safety regulations within the healthcare sector. By emphasizing the link between safety awareness and regulatory compliance, the article underscores the necessity of prioritizing safety measures to protect the well-being of healthcare workers. This research highlights the significance of education and training in fostering safety awareness and underscores the importance of proactive measures in ensuring a safe working environment for healthcare professionals.

3) NEED FOR THE STUDY

Awareness of employee safety and welfare in factories is imperative due to several compelling reasons. Firstly, it safeguards the lives and well-being of the workforce, preventing accidents, injuries, and health hazards. Secondly, it enhances productivity and quality of work as healthy and content employees are more efficient. Moreover, adhering to safety standards and welfare measures is often a legal requirement, and non-compliance can result in penalties and legal consequences. Beyond legalities, a strong focus on employee well-being boosts employee morale, engagement, and loyalty, reducing turnover rates. It also contributes to a positive public image and can attract talent to the organization. In an era of increased social awareness and accountability, companies that prioritize employee safety and welfare not only fulfil ethical responsibilities but also secure a sustainable and prosperous future.

4) OBJECTIVES OF THE STUDY

1. To study the awareness of safety measures among different age group of employees.
2. To study the awareness of Welfare measures among different age group of employees.
3. To find out the overall awareness level about safety and welfare measures.

5) METHODOLOGY

This study employed a quantitative approach, utilizing a structured questionnaire distributed to 150 participants from iron and steel manufacturing factories, using a convenient sampling method. Data were analysed using percentage method used. Ethical guidelines were followed, and participant consent was obtained. Limitations include potential response bias and the sample's representativeness.

6) DATA ANLYSIS AND INTERPRETATION

Data analysis entails the summarization, tabulation, and interpretation of collected data to derive meaningful insights or information, facilitating informed decision-making.

I). Demographic Analysis

Table 1. Demographic data

Sl.no	Factors	Respondents	Percentage
1.	**Gender**		
	Male	144	96
	Female	**6**	4
	Total	**150**	**100**
2.	**Age**	**Respondents**	**Percentage**
	Under 30	7	4.7
	31-40	58	38.7
	41-50	70	46.7
	Above 50	15	10.0
	Total	**150**	**100**
3.	**Work Type**	**Respondents**	**Percentage**
	Skilled	4	2.7
	Semi-Skilled	127	84.7

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	Unskilled	19	12.7
	Total	**150**	**100**
4.	**Experience**	**Respondents**	**Percentage**
	less than one Year	42	28.0
	1-3 years	88	58.7
	4-6 years	17	11.3
	7-10 years	3	2.0
	Total	**150**	**100**

Source: Compiled from primary data

- **Gender:** The data provided illustrates a significant gender disparity among respondents, with males comprising a substantial majority at 96 percentage, while females represent only a small fraction, constituting merely 4 percentage of the total sample of 150 respondents. Such a stark contrast in gender distribution suggests a notable skew towards male participation in the surveyed population. This discrepancy could be indicative of various underlying factors such as societal norms, cultural influences, or even the nature of the survey itself, which might have inadvertently discouraged female participation.

- **Work type:** The data provided highlights the distribution of respondents based on their work types, delineated into skilled, semi-skilled, and unskilled categories. Among the surveyed population of 150 respondents, the majority, constituting 84.7 percentage, are categorized as semi-skilled workers, indicating a prevalent representation of this demographic group within the sample. Meanwhile, skilled workers account for a mere 2.7 percentage of respondents, representing a relatively small fraction of the surveyed population. Unskilled workers make up 12.7 percentage of the total respondents, signifying a notable, albeit lesser, presence within the sample. This distribution underscores the predominant presence of semi-skilled workers within the surveyed population, potentially reflecting the prevailing composition of the workforce under study.

- **Age**: The data provided presents a breakdown of respondents based on their age groups. Among the 150 individuals surveyed, the majority fall within the age range of 25 to 44 years, encompassing 85.4 percentage of the total sample. This indicates a significant concentration of respondents in their late twenties to mid-forties. Specifically, the age groups of 25-34 years and 35-44 years represent 38.7 percentage and 46.7 percentage of the respondents, respectively. Conversely, respondents outside of this age range are less prevalent in the sample. Those under 25 years old constitute a smaller proportion at 4.7 percentage, while individuals aged 45 to 54 years make up 10.0 percentage of the respondents. This suggests a relative scarcity of younger and older participants in the surveyed population.

- **Experience:** The data provided offers insights into the experience levels of the respondents, categorized into four distinct brackets. Among the 150 individuals surveyed, the majority, comprising 58.7 percentage of the total sample, possess 1 to 3 years of experience. This indicates a significant presence of relatively early-career professionals within the surveyed population. Additionally, respondents with less than one year of experience represent 28.0 percentage of the total, suggesting a considerable proportion of newcomers or individuals in the nascent stages of their careers. Conversely, those with more extensive experience beyond three years are less prevalent in the sample. Respondents with 4 to 6 years of experience make up 11.3 percentage of the surveyed population, while those with 7 to 10 years constitute a mere 2.0 percentage. This distribution underscores a concentration of respondents within the early to mid-stage of their professional trajectories, with fewer individuals demonstrating longer tenures in their respective fields.

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II). Awareness levels among different age group of employees towards safety and welfare measures:

Table 2. Awareness of safety measures

Sl.No	Statements	Response	Age in years				N	Percentage
			Under 25	25-34	35-44	45-54		
1	Familiar with the safety protocols and procedures	No	0	0	0	0	0	0
		Yes	7	25	44	15	91	60.7
		Partially	0	33	26	0	59	39.3
						Total	**150**	**100.0**
2	Received safety training or orientation	Yes	7	57	68	15	147	98.0
		No	0	1	2	0	3	2.0
						Total	**150**	**100.0**
3	How to operate and use safety equipment relevant to your job (e.g., helmets, safety harnesses, ear protection)?	Yes	6	55	67	14	142	94.7
		No	0	0	0	0	0	0
		Not sure	1	3	3	1	8	5.3
						Total	**150**	**100.0**
4	Ever reported a safety concern or hazard to your supervisor or safety officer?	Yes	3	4	6	0	13	8.7
		No	4	54	64	15	137	91.3
						Total	**150**	**100.0**

Source: Compiled from primary data

Awareness about Safety Measures

- **Familiarity with Safety Protocols and Procedures:** According to the data, 60.7 percentage of employees are fully aware of the safety protocols and procedures, with the maximum number (44 people) lying in the 35-44 age bracket. Furthermore, 39.3 percentage of employees have partial acquaintance, which is most noticeable among those aged 25-34, with 33 people reporting partial awareness. All age groups exhibit a basic level of awareness of safety standards, with no employee being wholly ignorant of them. Though there is still an opportunity for improvement to guarantee that every employee is completely familiar with safety procedures, this high degree of familiarity indicates that safety training and communication efforts have been fairly successful.

- **Received Safety Training or Orientation**
  A significant 98.0 percentage of employees have attended safety training or orientation, demonstrating the company's dedication to worker safety. The 35-44 age range has the most trained employees, at 68. Only 2.0 percentage of respondents reported not receiving any training, demonstrating a high level of compliance with safety training requirements. This extensive training coverage is critical for maintaining a safe working environment and lowering the risk of accidents or incidents caused by a lack of knowledge.

- **Knowledge on Operating Safety Equipment**
  The knowledge on how to operate and use safety equipment is widespread, with 94.7 percentage of employees reporting they are knowledgeable. The majority of these knowledgeable personnel, 67 in total, are aged 35 to 44. There are no employees who have specifically said that they do not know how to utilize the safety equipment, but 5.3 percentage are unsure. Ensuring that all personnel are confident in their abilities to operate safety equipment is critical to their safety and effective reaction in hazardous situations.

- **Reported a Safety Concern**
  Despite receiving extensive safety training and equipment knowledge, only 8.7 percentage of employees reported a safety problem or hazard to their supervisor or safety officer. This reporting rate is highest in the 35-44 age range, with six persons. In contrast, 91.3 percentage had never reported any safety issues, indicating a possible problem with the reporting culture or awareness of the significance of reporting dangers.

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Table 3. Awareness of Welfare Measures

Sl.no	Statements	Response	Age in years				N	Percentage
			Under 25	25-34	35-44	45-54		
1	Aware of any welfare benefits or support programs provided to labourers by your employer (e.g., health insurance, housing assistance, transportation, worker's compensation)?	No	0	0	0	0	0	0
		Yes	7	58	70	15	150	100.0
						Total	**150**	**100.0**
2	Know where to access information about your rights as a labourer regarding welfare benefits and support?	Yes	0	6	1	1	8	5.3
		No	7	50	55	11	123	82.0
		Not sure	0	2	14	3	19	12.7
						Total	**150**	**100.0**
3	Ever utilized any of the welfare benefits or support programs	Yes	0	3	3	0	6	4.0
		No	7	55	67	15	144	96.0
						Total	**150**	**100.0**
4	Are you aware of any programs or initiatives related to the well-being of labourers, such as health check-ups, rest breaks, or counselling services?	Yes	7	58	70	15	150	100.0
		No	0	0	0	0	0	0
						Total	**150**	**100.0**

Source: Compiled from primary data

Awareness of Welfare Measures

- **Awareness of Welfare Benefits**

  Employees are well aware of welfare benefits, with 100.0 percentage reporting knowledge of their employer's benefits or support programs. The 35-44 age group has the most awareness, with 70 people confirming their understanding. while none reported complete unawareness. This high degree of awareness indicates that the company's communication on welfare benefits is effective; yet, there may be possibilities to further educate employees who are just partially aware.

- **Access to Information on Rights**

  Despite a high awareness of welfare benefits, just 5.3 percentage of employees know where they can get information regarding their labour rights. This low figure is spread across age levels, demonstrating a general awareness deficit regarding access to rights information. The vast majority, 82.0 percentage, do not know where to look for this information, and 12.7 percentage are unclear. Improving access to information and training employees on where and how to locate their rights information are critical for enabling them to fully utilize their benefits and support systems.

- **Utilization of Welfare Benefits**

  The percentage of employees who have ever utilized any welfare benefits or support services is quite low, at 4.0 percentage. The low utilization rate and high awareness levels point to possible obstacles to taking advantage of these benefits. The majority, 96.0 percentage, stated that they had not used any benefits. Addressing the causes for low utilization, such as perceived accessibility, relevance, or awareness of how to claim these benefits, may improve employee well-being.

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- **Awareness of Well-being Programs**
  Every employee, 100.0 percentage, is aware of programs or efforts aimed at improving labourers' well-being, such as health check-ups, rest breaks, and counselling services. The company's efforts to promote these well-being activities are highly reflected in this unanimity awareness. Ensuring that all employees are aware of and have access to these programs is essential for sustaining healthy and productive employees. Continued promotion, as well as the expansion of these well-being programs, could help to improve employee health and satisfaction.

Table 4. Overall Awareness about Safety and Welfare Measures

Factors	Response	Age in Years				N	Percentage
		Under 25	25-34	35-44	45-54		
Safety measures	Yes	23 (3.83%)	141 (23.5%)	185 (30.83%)	44 (7.33%)	393 (65.5%)	100
	No	5 (0.83%)	58 (15.17%)	69 (15.83%)	16 (2.67%)	207 (34.5%)	
Welfare measures	Yes	14 (2.33%)	125 (20.83%)	144 (24%)	31 (5.17%)	314 (52.33%)	100
	No	14 (2.33%)	107 (17.83%)	136 (22.67%)	29 (4.83%)	286 (47.67%)	

Source: Compiled from primary data

Overall Awareness among Employees toward safety and welfare measures;

Awareness of Safety Measures

The data reveals that 65.5% of respondents are aware of safety measures, indicating a moderate level of awareness across different age groups. The highest awareness is observed in the 35-44 age group, with 30.83% of respondents indicating awareness, followed by the 25-34 age group at 23.5%. This suggests that middle-aged individuals may have more exposure to safety information or training in their environments. Conversely, the age group under 25 years shows the lowest awareness, with only 3.83% of respondents acknowledging awareness of safety measures. This could indicate a gap in knowledge or access to safety-related information among the younger population.

On the other hand, 34.5% of respondents are not aware of safety measures, demonstrating a significant portion of the population that might require targeted interventions. The 35-44 age group, despite having the highest awareness rate, also shows the highest percentage of unawareness at 15.83%, suggesting variability within this demographic. The data implies that while a majority have some level of awareness, there is still a need for improved communication and education efforts across all age groups, particularly among the youngest and oldest cohorts.

Awareness of Welfare Measures:

Regarding welfare measures, the data shows that 52.33% of respondents are aware of such measures, which is lower compared to the awareness of safety measures. The 35-44 age group again shows the highest level of awareness, with 24% of respondents, followed closely by the 25-34 age group at 20.83%. This pattern aligns with the data on safety measures, reinforcing the idea that middle-aged individuals might have more access to or interest in welfare-related information. The age group under 25 years again shows the lowest awareness at 2.33%, highlighting a consistent trend of lower engagement or exposure to information among younger respondents.

Meanwhile, 47.67% of respondents reported a lack of awareness about welfare measures. The highest percentage of unawareness is also found in the 35-44 age group at 22.67%, which is a notable finding given their simultaneous high level of awareness. This disparity suggests that within age groups, there might be significant differences in the level of access to welfare information or its relevance to individuals. Therefore, it may be necessary to develop more targeted strategies to enhance understanding and engagement with welfare measures, particularly among younger and less-informed groups.

Major Findings

- **Moderate Awareness of Safety Measures:** While 65.5% of employees are aware of safety measures, awareness is notably low (3.83%) among employees under 25, indicating a need for better education and engagement in this age group.
- **Gap Between Safety Training and Reporting:** Despite 98% of employees receiving safety training, only 8.7% have reported safety concerns, suggesting a disconnect between training and the actual practice of hazard reporting.

- **Low Utilization of Welfare Benefits:** Although 52.33% of employees are aware of welfare benefits, only 4% have utilized them, indicating potential barriers such as lack of knowledge on how to access or use these benefits.
- **Limited Awareness of Accessing Rights Information:** Only 5.3% of employees know where to find information about their rights, pointing to a significant communication gap.

Major Suggestions

- **Enhance Safety Training for Younger Employees:** Develop specific training programs to increase awareness and engagement among younger employees.
- **Promote Hazard Reporting Culture:** Implement measures like anonymous reporting systems and regular workshops to encourage safety concern reporting.
- **Improve Access to Welfare Benefits:** Simplify the process for claiming welfare benefits through clear guides and consistent communication.
- **Increase Awareness of Employee Rights:** Regularly provide accessible resources and sessions to educate employees about their rights and benefits.

CONCLUSION

The study highlights crucial gaps in awareness and utilization of safety and welfare measures among employees in the iron and steel industry. While the majority are aware of safety protocols, there is a disconnect between training and hazard-reporting practices. Similarly, despite knowing about welfare programs, the actual utilization of these benefits is minimal, compounded by limited access to information on employee rights. Addressing these issues requires targeted training, enhanced communication strategies, and a supportive culture that encourages safety and welfare awareness. By implementing these changes, the industry can ensure a safer, more supportive, and productive work environment.

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