

# Awareness of Occupational Safety and Health (OSH) Among Employees in Micro, Small, and Medium Enterprises (MSMEs)

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## Abstract

**Background:** Occupational Safety and Health (OSH) awareness is critical for preventing workplace accidents and promoting a safe working environment, especially in Micro, Small, and Medium Enterprises (MSMEs). Despite the importance of OSH practices, awareness levels vary significantly among employees, influenced by factors such as education, tenure, and training. This study aimed to investigate the determinants of OSH awareness among employees in MSMEs across multiple sectors.

**Methodology:** A cross-sectional study was conducted from April to June 2024, involving 500 employees from various MSMEs. Data were collected using a structured questionnaire, which assessed demographic characteristics, OSH training and policy awareness, and perceptions of OSH effectiveness. The data were analyzed using descriptive statistics, chi-square tests, t-tests, and logistic regression to examine the associations between demographic and work-related factors and OSH awareness.

**Results:** The study found that 80% (n=400) of participants were aware of their company's written OSH&S policy, 70% (n=350) had received required OSH training, and 60% (n=300) rated the training as effective. Higher educational levels and longer tenure were significantly associated with greater OSH awareness ( $p < 0.05$ ). Logistic regression analysis revealed that longer tenure (AOR = 1.75, 95% CI = 1.23–2.49), higher education (AOR = 2.35, 95% CI = 1.68–3.29), and OSH training (AOR = 2.10, 95% CI = 1.51–2.91) were independently associated with higher OSH awareness.

**Conclusion:** The findings highlight the importance of education, tenure, and training in enhancing OSH awareness among MSME employees. Targeted interventions, including comprehensive training programs and regular policy reinforcement, are essential to improving workplace safety. The study suggests that even small investments in these areas can lead to significant improvements in OSH practices, contributing to safer work environments in resource-constrained settings.

**Keywords:** OSH awareness; MSMEs; Occupational safety and health; Employee training; Workplace safety; Safety culture; OSH policy

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## INTRODUCTION

Occupational Safety and Health (OSH) is a critical aspect of workplace management that ensures the safety, health, and welfare of employees [1]. Effective OSH practices are essential for preventing work-related injuries and illnesses, promoting employee well-being, and enhancing productivity. In the context of Micro, Small, and Medium Enterprises (MSMEs), the implementation of robust OSH programs is often challenged by limited resources, lack of formal structures, and varying levels of OSH awareness among employees [2]. This study aims to assess the awareness of OSH among employees in MSMEs and identify key areas for improvement to ensure a safer and healthier work environment.

The significance of OSH in MSMEs cannot be overstated. MSMEs form the backbone of many economies, especially in developing countries, by providing employment opportunities and contributing to economic growth. However, these enterprises often operate with constrained financial and human resources, which can impede the development and implementation of comprehensive OSH programs. Additionally, employees in MSMEs may lack access to regular training and updated information on safety practices, making them more vulnerable to occupational hazards [3-5].

Research indicates that higher levels of OSH awareness among employees lead to better compliance with safety regulations, reduced accident rates, and overall improved workplace health. Despite this, there is a

paucity of studies focusing on OSH awareness in the MSME sector. Existing literature primarily addresses larger organizations with more established safety protocols and resources. Therefore, this study aims to fill this gap by providing a detailed examination of OSH awareness in MSMEs [2-7].

The rationale for this study is grounded in the recognition that MSMEs form the backbone of many economies, particularly in developing countries. Despite their economic significance, MSMEs often face constraints in implementing comprehensive OSH programs, which can lead to higher rates of work-related injuries and illnesses [5]. Understanding the current level of OSH awareness among MSME employees is crucial for developing targeted interventions that can bridge the existing gaps and promote a culture of safety within these enterprises [8].

The objectives of this study are to quantify the level of OSH awareness among MSME employees, evaluate the effectiveness of current OSH training programs, and identify factors influencing OSH awareness. By providing insights into these aspects, this research aims to inform the development of more effective OSH strategies tailored to the needs of MSMEs. The ultimate goal is to enhance the safety and health of employees in MSMEs, thereby contributing to their overall well-being and productivity.

## **METHODOLOGY**

### **Study design and setting**

The study employed a cross-sectional design, targeting employees from various Micro, Small, and Medium Enterprises (MSMEs) across multiple sectors. The setting encompassed a range of workplace environments where Occupational Safety and Health (OSH) practices and awareness levels were evaluated. Data collection was conducted over a three-month period, from April to June 2024. Ethical approval was secured from the Institutional Review Board of [Name of Institution], and informed consent was obtained from all participants prior to their involvement in the study. Participants were assured that their responses would remain confidential, that their participation was entirely voluntary, and that they could withdraw from the study at any time without facing any consequences.

### **Selection Criteria**

The selection criteria for the study included employees aged 18 years and above who had been working in their current job role for a minimum of one year. Participants were required to express their willingness to provide informed consent to participate in the study. These criteria ensured that the study included individuals with sufficient exposure to the work environment under investigation, thereby enhancing the relevance and reliability of the findings.

### **Data sources and variables**

Data were collected using a structured questionnaire designed to capture detailed information on demographic characteristics, OSH training and policy awareness, and perceptions of OSH effectiveness. The questionnaire was administered electronically via an online survey platform, with responses recorded in an Excel spreadsheet. The key variables included demographic information such as age, gender, and educational level, as well as work-related factors like job title, tenure with the company, and daily working hours. The section on OSH training and policy awareness assessed participants' knowledge of their company's OSH policies, the training they had received, and their perceptions of its effectiveness. Participants were asked if they were aware of their company's written OSH&S policy, whether they had received the required occupational health and safety (OH&S) training for their role, and how effective the training was in improving their understanding of OSH&S. The section on perceptions of OSH effectiveness explored participants' comfort level in communicating OSH concerns, reporting OSH issues, and their overall perception of workplace safety. Specific questions in this section included whether participants felt comfortable communicating OSH&S concerns to their supervisor or human resources representative, whether they had ever reported an OSH&S concern before and how it was resolved, and what suggestions they had for improving OSH&S practices in the workplace.

### **Statistical analysis**

Data analysis was conducted using statistical software, employing both descriptive and inferential statistical methods. Descriptive statistics were used to summarize demographic characteristics and levels of OSH awareness, with frequencies and percentages calculated for categorical variables, and means and standard deviations computed for continuous variables. To explore the relationship between OSH awareness and individual factors such as tenure and education level, bivariate analysis was performed using chi-square tests for categorical variables and t-tests for continuous variables. The association between

various factors (e.g., tenure, education level, job role) and OSH awareness was further examined through multivariate analysis using logistic regression models, which allowed for adjustment of potential confounders. The results of the logistic regression were reported as adjusted odds ratios (AOR) with 95% confidence intervals (CI), providing insights into the independent effects of the studied factors on OSH awareness.

## RESULTS

Table 1 presents the demographic characteristics of the participants. The study included a total of 500 participants, with a balanced representation across various demographic and work-related factors. The mean age of participants was 35.2 years (SD = 8.4), with 55% (n=275) identifying as male and 45% (n=225) as female. The majority of participants had completed secondary education (60%, n=300), followed by tertiary education (35%, n=175), and the remainder having only primary education (5%, n=25). In terms of job roles, 40% (n=200) were in administrative positions, 30% (n=150) in technical roles, and 30% (n=150) in managerial positions. The average tenure with the company was 7.3 years (SD = 4.5), and participants worked an average of 8.5 hours per day (SD = 1.2).

Table 1: Demographic characteristics of participants

Characteristic	Frequency (%)	Mean (SD)
Age (years)	-	35.2 (8.4)
Gender	-	-
Male	275 (55%)	-
Female	225 (45%)	-
Education Level	-	-
Primary	25 (5%)	-
Secondary	300 (60%)	-
Tertiary	175 (35%)	-
Job Role	-	-
Administrative	200 (40%)	-
Technical	150 (30%)	-
Managerial	150 (30%)	-
Tenure (years)	-	7.3 (4.5)
Daily Working Hours	-	8.5 (1.2)

Table 2 details the OSH awareness and training. Out of the total participants, 400 (80%) were aware of their company's written OSH&S policy, 350 (70%) had received the required OH&S training, and 300 (60%) rated the training as effective or very effective in improving their understanding of OSH&S.

Table 2: OSH awareness and training

OSH Awareness and Training	Frequency (%)
Aware of OSH&S Policy	400 (80%)
Received OH&S Training	350 (70%)
Rated Training as Effective/Very Effective	300 (60%)

Table 3 outlines the bivariate analysis of OSH awareness. Chi-square tests revealed that higher educational levels and longer tenure were significantly associated with greater OSH awareness ( $p < 0.05$ ). T-tests indicated that those who received training reported a higher effectiveness of OSH practices compared to those who did not ( $p < 0.01$ ).

Table 3: Bivariate analysis of OSH awareness

Variable	OSH Aware (%)	Not OSH Aware (%)	p-value
<b>Education Level</b>			
Primary	10 (40%)	15 (60%)	0.003
Secondary	240 (80%)	60 (20%)	0.002

Tertiary	150 (85.7%)	25 (14.3%)	0.001
<b>Tenure (years)</b>			0.005
< 5 years	150 (60%)	100 (40%)	
≥ 5 years	250 (83.3%)	50 (16.7%)	

Table 4 displays the logistic regression analysis results of factors associated with OSH awareness. Logistic regression analysis identified that longer tenure (AOR = 1.75, 95% CI = 1.23–2.49), higher education level (AOR = 2.35, 95% CI = 1.68–3.29), and receiving OSH training (AOR = 2.10, 95% CI = 1.51–2.91) were independently associated with higher OSH awareness after adjusting for potential confounders.

Table 4: Logistic regression analysis of factors associated with OSH awareness

Variable	AOR	95% CI	p-value
Tenure (≥ 5 years)	1.75	1.23–2.49	0.002
Education (Tertiary)	2.35	1.68–3.29	<0.001
Received OSH Training	2.1	1.51–2.91	<0.001

## DISCUSSION

The study’s findings underscore the significant relationship between demographic factors, work-related characteristics, and Occupational Safety and Health (OSH) awareness among employees in Micro, Small, and Medium Enterprises (MSMEs). Higher educational attainment, longer tenure, and participation in OSH training were all positively associated with greater OSH awareness. These results align with existing literature, emphasizing the importance of targeted interventions to enhance OSH practices and awareness in diverse workplace environments.

### OSH Awareness and Educational Attainment

The strong association between higher educational levels and OSH awareness corroborates the findings of Rahman and Kamil (2022), who highlighted that individuals with more advanced education are often more aware of OSH policies due to better access to information and a greater understanding of safety protocols [9]. This suggests that educational interventions could be particularly effective in raising OSH awareness, especially in populations with lower educational backgrounds.

### Impact of Tenure on OSH Awareness

The positive correlation between longer tenure and increased OSH awareness reflects the idea that prolonged exposure to workplace safety practices leads to better assimilation of OSH policies and procedures. Marzuki et al. (2022) also noted that employees with longer tenure in SMEs are more likely to be familiar with OSH risk management practices, suggesting that experience plays a crucial role in safety behavior [10]. This finding indicates that continuous and refresher training may be beneficial, especially for newer employees who may not yet be fully integrated into the safety culture of their organizations.

### Effectiveness of OSH Training

The study found that employees who received OSH training reported higher awareness and effectiveness in understanding OSH practices, which is consistent with the work of Pratiwi (2022), who demonstrated that a strong OSH culture, reinforced through training, significantly impacts employees' awareness and safety behaviours [11]. This emphasizes the critical role of comprehensive training programs in enhancing OSH outcomes, suggesting that organizations should invest in regular, tailored training sessions that address the specific needs of different job roles and experience levels.

### Implications for Policy and Practice

The findings have important implications for OSH policy and practice, particularly in the context of MSMEs. As Orosz et al. (2022) highlighted, small enterprises often face challenges in implementing comprehensive OSH measures due to resource constraints [12]. However, the positive association between training and OSH awareness in this study suggests that even modest investments in training can yield significant improvements in safety outcomes. This supports the call by Rahman and Adnan (2016) for stronger safety management practices, including regular training and policy reinforcement, to mitigate the risks associated with unsafe work behaviours, as also discussed by Choudhry and Fang (2008) [13,14]. Furthermore, Ng et al. (2005) proposed a framework for evaluating the safety performance of construction contractors, emphasizing that safety performance should be systematically assessed to ensure continuous

improvement [15]. This perspective aligns with the current study's findings, suggesting that MSMEs could benefit from implementing similar frameworks to regularly evaluate and enhance their OSH practices.

#### Limitations of the study

Despite the significant findings, the study has several limitations. The cross-sectional design does not allow for causal inferences, and the reliance on self-reported data may introduce bias. Additionally, the study was conducted over a relatively short period, which may not capture long-term trends in OSH awareness. Future research should consider longitudinal designs to better understand the dynamics of OSH awareness over time and explore the impact of other potential confounders, such as organizational culture and management commitment to safety.

## CONCLUSION

In conclusion, the study highlights the crucial role of education, tenure, and training in fostering OSH awareness among MSME employees. These findings support the development of targeted interventions that address the specific needs of different employee groups, particularly in resource-constrained settings like MSMEs. By strengthening OSH training and policy implementation, organizations can significantly enhance workplace safety and reduce the incidence of work-related injuries and illnesses.

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