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Analysis of Factors Influencing the Implementation of K3 on Employees at the Oksibil Community Health Center

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Abstract: Clinical laboratory services are crucial for public health, requiring adequate facilities, modern technology, and well-trained personnel to meet safety standards. In line with the Indonesian Minister of Health Regulation No. 66 of 2016, Occupational Safety and Health (OSH) systems are essential to safeguard hospital staff, patients, visitors, and the environment by preventing accidents and illnesses. **Objective**: This study aims to investigate the relationship between Occupational Safety and Health Management components (K3 Promotion, Training, Supervision, Investigation, Reporting) and workplace accidents in the laboratory at Dr. Wahidin Sudirohusodo General Hospital, Makassar. **Methodology**: A descriptive analytical approach with a cross-sectional design was used, involving 110 laboratory staff selected through total sampling. Data were collected using structured questionnaires and analyzed with the Chi-Square statistical test. **Findings**: A significant relationship was found between Training and workplace accidents ($\rho = 0.041$), while K3 Promotion ($\rho = 0.141$), Supervision ($\rho = 0.153$), Investigation ($\rho = 0.575$), and Reporting ($\rho = 0.078$) did not show significant associations. **Implications**: This study emphasizes the need to re-socialize OSH practices to all hospital staff, highlighting that work accidents should include all incidents, not just needle-stick injuries, and must be reported for preventive measures. **Originality**: This research offers new insights into the importance of training in improving OSH outcomes in hospital laboratories, providing valuable guidance for optimizing OSH management in healthcare settings.

Keywords: K3 Promotion; Training; Supervision; Investigation; Work accidents.

INTRODUCTION

The Oksibil Community Health Center (Puskesmas) is located in a remote area with limited resources and facilities. Difficult geographical conditions and limited access to various medical facilities make implementing OHS (Occupational Health and Safety) at the Oksibil Community Health Center particularly challenging. While quality healthcare services must be provided to the community, puskesmas staff must also contend with an environment that is less than conducive to maintaining occupational safety and health (Sutrisno, 2021). The greatest risk faced by community health center staff is direct exposure to infectious diseases from patients. Healthcare workers, from doctors and nurses to

administrative staff, are at risk of contracting dangerous diseases if they are not equipped with adequate knowledge and skills related to OHS. Inappropriate use of personal protective equipment (PPE), or even a shortage of PPE, can increase the potential for disease transmission, which of course risks the safety of staff and patients (Amanda & Ayu, 2025; Fatma et al., 2022; Firdaus, 2022; Tarmidi, 2019) and even reduce the quality of healthcare services (Sari, 2020).

Knowledge is a crucial factor that must be considered in implementing OHS at the Oksibil Community Health Center. Many employees do not fully understand the importance of OHS procedures and their implementation in their daily work. Limited knowledge can lead to misunderstandings regarding the use of personal protective equipment and substandard medical waste handling. Therefore, OHS education and training are essential to improve employee awareness and skills at community health centers (Putra, 2022). Employee attitudes toward OHS also play a crucial role in the effectiveness of its implementation. It is not uncommon for employees at the Oksibil Community Health Center to underestimate OHS procedures due to a lack of understanding or a perceived lack of adequate supervision. This attitude can be dangerous, given that proper OHS implementation requires a commitment from every individual in the workplace to comply with established safety procedures. Therefore, a better approach is needed to foster a positive attitude toward occupational safety (Nur'aini et al., 2024; Nurdin, 2020; Nurlaili & Al Ridha, 2022).

The completeness of facilities and infrastructure is also a crucial aspect supporting optimal OHS implementation. The Oksibil Community Health Center, with its limited budget and facilities, often experiences difficulties in providing personal protective equipment, adequate workspace, and medical waste management facilities that comply with OHS standards. This situation adds to the challenges for community health center employees in carrying out their duties safely and comfortably. The work culture at the Oksibil Community Health Center also influences the extent to which OHS can be implemented. A work culture that does not support safety can hinder OHS implementation. Therefore, it is crucial to build a work culture that prioritizes safety, where every employee feels responsible for maintaining health and safety in the workplace (Hendrik, 2021). By creating a culture of OHS awareness, employees will be more skilled in dealing with potential hazards.

Supervision of OHS implementation at the Oksibil Community Health Center is also crucial. Without systematic supervision and continuous evaluation, many OHS procedures will be neglected. Therefore, a better oversight mechanism is needed, which is not only carried out by community health center management but also involves employees in ensuring the implementation of occupational safety procedures. Supportive management is also essential to ensure that OHS implementation runs smoothly at the Oksibil Community Health Center. If community health center management fails to prioritize occupational health and safety (K3), the implementation of K3 policies will be ineffective. This includes allocating a budget for the procurement of facilities and infrastructure, regular employee training, and policies that support employee well-being at work (Putra, 2022).

Furthermore, inadequate implementation of K3 can impact the quality of services provided to the public. Employees who feel unsafe or are not equipped with adequate equipment tend to experience decreased performance. Therefore, it is important to view K3 implementation not only as an obligation to maintain employee safety, but also as a crucial step to ensure optimal quality health services for the public (Sari, 2020). Good K3 implementation at the Oksibil Community Health Center is also directly related to improved employee well-being. Employees who work in safe and comfortable conditions will feel valued, which in turn will boost their morale. Furthermore, a safe work environment can reduce absenteeism due to illness or injury, thereby improving overall productivity and performance at the community health center (Sutrisno, 2021).

RESEARCH METHOD

Study Design

This study employed a quantitative research method with an analytical observational approach, aiming to examine the relationship between independent variables and the dependent variable based on data collected directly from the field. The study design was intended to analyze the association between knowledge, attitudes, facilities and infrastructure, work culture, and supervision with the implementation of Occupational Health and Safety (OHS) among employees.

Study Setting and Period

The research was conducted at the Oksibil Community Health Center (Puskesmas), Oksibil District, Pegunungan Bintang Regency, Papua Pegunungan Province. This site was

selected due to its accreditation status, which allowed for a comprehensive assessment of factors influencing OHS implementation in the workplace. Data collection was carried out over a period of one month, from June to July 2025.

Data Sources and Collection

This study utilized primary data obtained directly from the research location. Data were collected using a structured questionnaire distributed to respondents. The questionnaire employed Likert-scale and ordinal-scale measurements to assess respondents' perceptions and practices related to OHS.

Research Instrument

This study applies multiple linear regression analysis to identify factors related to the variables of knowledge, attitude, facilities and infrastructure, work culture, and supervision by using (1) Univariate analysis was conducted to describe the frequency distribution, percentage, minimum value, maximum value, mean, and standard deviation of each research variable. The dependent variable is the Implementation of OHS (Y), while the independent variables include OHS Knowledge (X_1), Attitude towards OHS (X_2), OHS Facilities and Infrastructure (X_3), Work Culture (X_4), and OHS Supervision (X_5). The results of the analysis are presented in the form of a frequency distribution table and measures of central tendency (Notoatmodjo, 2012, 2018), (2) Bivariate analysis was used to determine the relationship between each independent variable (X_1–X_5) with the dependent variable (Y). The statistical test used was the Pearson correlation test if the data was normally distributed or the Spearman test if the data was not normally distributed (Sugiyono, 2019, 2020). (3) Multivariate analysis, if more than one independent variable is found to have a significant relationship with knowledge in bivariate analysis. Thus, multivariate analysis can be carried out to identify the influence of these variables simultaneously.

Data Analysis

Data analysis was performed using multiple linear regression and consisted of the following stages:

1. **Univariate Analysis**

   Univariate analysis was conducted to describe the distribution of each research variable in terms of frequency, percentage, minimum and maximum values, mean, and standard deviation. The results were presented in frequency distribution tables and measures of central tendency (Notoatmodjo, 2018).

2. **Bivariate Analysis**

   Bivariate analysis was used to determine the relationship between each independent variable (X_1–X_5) and the dependent variable (Y). The statistical tests applied were:

   a. Pearson correlation test for normally distributed data
   b. Spearman rank correlation test for non-normally distributed data (Sugiyono, 2019).

3. **Multivariate Analysis**

   Multivariate analysis was conducted when more than one independent variable showed a statistically significant association in the bivariate analysis. This analysis aimed to identify the simultaneous influence of knowledge, attitudes, facilities and infrastructure, work culture, and supervision on the implementation of OHS.

RESULT AND DISCUSSION

The Relationship between Knowledge and the Implementation of K3 among Health Center Employees in Oksibil between Knowledge and the Implementation of K3 among Employees at the Oksibil Health Center in 2025.

Table 1. Cross Tabulation

Knowledge	Implementation K3				Total		*P-Value*
	High		Low				
	n	%	n	%	N	%	
Good	11	78.6	3	21.4	14	100	0.017
Poor	3	27.3	8	72.7	11	100	
Total	14	56.0	11	44.0	25	100	

Source: data processedd with SPSS, 2025

Table 1 shows the relationship between employees' knowledge and the implementation of Occupational Health and Safety (OHS/K3) at the Oksibil Health Center in 2025. Among employees with good knowledge, 78.6% demonstrated a high level of

OHS implementation, while 21.4% showed a low level. In contrast, among employees with poor knowledge, only 27.3% had high OHS implementation, whereas 72.7% had low implementation. Statistical analysis revealed a significant relationship between knowledge and OHS implementation (p = 0.017), indicating that higher knowledge is associated with better implementation of OHS practices.

The Relationship between Attitudes and the Implementation of K3 among Health Center Employees in Oksibil between Attitudes and the Implementation of K3 among employees at the Oksibil Health Center in 2025.

Table 2. Cross Tabulation

Attitude	**Implementation K3**				**Total**		***P-Value***
	High		**Low**				
	n	**%**	**n**	**%**	**n**	**%**	
Positive	9	90.0	1	10.0	10	100	0.005
Negative	5	33.3	10	66.7	15	100	
Total	14	56.0	11	44.0	25	100	

Source: data processedd with SPSS, 2025

As presented in Table 2, employees with a positive attitude toward OHS showed a substantially higher proportion of high OHS implementation (90.0%) compared to those with a negative attitude (33.3%). Conversely, 66.7% of employees with negative attitudes demonstrated low OHS implementation. The statistical test indicated a significant association between attitudes and OHS implementation (p = 0.005). This finding suggests that positive attitudes play an important role in supporting effective OHS practices.

The relationship between facilities and infrastructure and the implementation of K3 for employees at the Oksibil Health Center in 2025.

Table 3. Cross Tabulation

Infrastructure	**Implementation K3**				**Total**		***P-Value***
	High		**Low**				
	N	**%**	**N**	**%**	**n**	**%**	
Complate	10	83.3	2	16.7	12	100	0.008
Incomplate	4	30.8	9	69.2	13	100	
Total	14	56.0	11	44.0	25	100	

Source: data processedd with SPSS, 2025

Table 3 illustrates the relationship between the availability of facilities and infrastructure and OHS implementation. Employees working in environments with

complete facilities and infrastructure showed a high level of OHS implementation (83.3%), whereas only 30.8% of those with incomplete facilities demonstrated high OHS implementation. The analysis revealed a statistically significant relationship between facilities and infrastructure and OHS implementation (p = 0.008), highlighting the importance of adequate physical resources in ensuring workplace safety.

The Relationship between Work Culture and the Implementation of K3 among Employees at the Oksibil Health Center in 2025.

Table 4. Cross Tabulation

Work Culture	Implementation K3				Total		*P-Value*
	High		Low				
	n	%	N	%	n	%	
Good	11	84.6	2	15.4	13	100	0.003
Poor	3	25.0	9	75.0	12	100	
Total	14	56.0	11	44.0	25	100	

Source: data processedd with SPSS, 2025

Table 4 indicates that employees with a good work culture had a higher proportion of high OHS implementation (84.6%) compared to those with a poor work culture (25.0%). Meanwhile, 75.0% of employees with poor work culture exhibited low OHS implementation. The statistical results showed a significant relationship between work culture and OHS implementation (p = 0.003), suggesting that a supportive and safety-oriented work culture contributes to better adherence to OHS standards.

The Relationship between Supervision and the Implementation of K3 for Oksibil Health Center Employees Supervision and the Implementation of K3 for Oksibil Health Center Employees in 2025.

Table 5. Cross Tabulation

Supervision	Implementation K3				Total		*P-Value*
	High		Low				
	n	%	n	%	n	%	
Good	11	84.6	2	15.4	13	100	0.003
Poor	3	25.0	9	75.0	12	100	
Total	14	56.0	11	44.0	25	100	

Source: data processedd with SPSS, 2025

As shown in Table 5, employees who experienced good supervision demonstrated a high level of OHS implementation (84.6%), while only 25.0% of those under poor

supervision showed high implementation. The relationship between supervision and OHS implementation was found to be statistically significant (p = 0.003). This result indicates that effective supervision plays a crucial role in ensuring compliance with OHS procedures.

DISCUSSION

Implementation of Occupational Health and Safety (OHS)

The results of this study indicate that more than half of the employees at the Oksibil Health Center demonstrated a high level of Occupational Health and Safety (OHS) implementation (56.0%), while 44.0% showed a low level of implementation. This finding suggests that although OHS practices have been adopted by a majority of employees, there remains a substantial proportion of staff who do not consistently apply OHS standards in their daily work activities.

Relationship between Knowledge and OHS Implementation

The findings revealed a significant relationship between knowledge and OHS implementation (p = 0.017). Employees with good knowledge were more likely to demonstrate high OHS implementation compared to those with poor knowledge. This result indicates that adequate understanding of OHS principles, procedures, and potential workplace hazards plays an essential role in shaping safe work behavior. Employees who are well-informed about OHS are better equipped to identify risks and comply with safety regulations, thereby reducing the likelihood of occupational accidents. These findings are consistent with behavioral theory, which emphasizes knowledge as a key predisposing factor influencing health and safety behavior in the workplace.

Relationship between Attitudes and OHS Implementation

The analysis also showed a statistically significant association between attitudes and OHS implementation (p = 0.005). Employees with positive attitudes toward OHS exhibited a higher level of compliance with safety practices than those with negative attitudes. This suggests that favorable perceptions and beliefs regarding the importance of workplace safety encourage employees to actively engage in OHS practices. Attitudes influence motivation and willingness to comply with safety procedures, and employees who value OHS are more likely to integrate safety behaviors into their routine work activities. This

finding aligns with previous studies indicating that positive safety attitudes are strongly associated with improved safety performance.

Relationship between Facilities and Infrastructure and OHS Implementation

The availability of facilities and infrastructure was found to have a significant relationship with OHS implementation (p = 0.008). Employees working in environments with complete safety facilities and infrastructure demonstrated higher levels of OHS implementation compared to those with incomplete facilities. This finding highlights the importance of adequate physical resources, such as personal protective equipment, safety signage, and emergency response tools, in supporting the effective implementation of OHS. Even when employees possess good knowledge and positive attitudes, the absence of appropriate facilities can limit their ability to apply OHS practices consistently.

Relationship between Work Culture and OHS Implementation

A significant relationship was observed between work culture and OHS implementation (p = 0.003). Employees operating within a positive and supportive work culture were more likely to demonstrate high levels of OHS implementation. A strong safety-oriented work culture promotes shared values, norms, and behaviors that prioritize safety and risk prevention. When safety is embedded in organizational culture, employees are encouraged to adhere to safety standards collectively, thereby enhancing overall workplace safety performance.

Relationship between Supervision and OHS Implementation

The results further demonstrated a significant association between supervision and OHS implementation (p = 0.003). Employees who received good supervision showed higher compliance with OHS practices compared to those who experienced poor supervision. Effective supervision ensures that safety procedures are consistently monitored, reinforces accountability, and provides immediate feedback or corrective actions when unsafe behaviors are observed. This finding underscores the role of leadership and management oversight in strengthening the implementation of OHS policies at the health center.

Overall Discussion

Overall, the findings of this study indicate that knowledge, attitudes, facilities and infrastructure, work culture, and supervision are all significantly associated with the implementation of OHS among employees at the Oksibil Health Center. These results support the view that OHS implementation is influenced by a combination of individual, organizational, and environmental factors. Improving OHS performance therefore requires an integrated approach that includes increasing employee knowledge through training, fostering positive attitudes toward safety, providing adequate facilities, strengthening safety-oriented work culture, and enhancing supervisory practices. Addressing these factors simultaneously may lead to more effective and sustainable implementation of OHS in primary healthcare settings.

CONCLUSION

The results of the univariate analysis showed that the majority of employees were in the high OHS implementation category. This indicates that employees generally understand the importance of implementing OHS in their daily work activities. The majority of respondents also had good knowledge, a positive attitude toward OHS implementation, and adequate support from facilities and infrastructure, supervision, and a work culture. This overview indicates that the work environment at the Oksibil Community Health Center is relatively conducive to OHS implementation.

Based on the results of the bivariate analysis using the chi-square test, a significant relationship was found between knowledge, attitudes, facilities and infrastructure, work culture, and supervision with OHS implementation. A p-value of less than 0.05 for each independent variable indicates that these five factors individually have a significant relationship with variations in OHS implementation among employees. This means that improving any one of these factors has the potential to improve the overall quality of OHS implementation.

Multivariate analysis with multiple logistic regression shows that the constructed regression model is suitable for predicting factors that play a role in the implementation of OHS, as indicated by the results of the Omnibus Test of Model Coefficients with a significance of $p < 0.05$ at each stage. The Nagelkerke R^2 value in the final model is 0.640, which means that 64% of the variation in OHS implementation can be explained by the variables studied, while the remaining 36% is influenced by other factors outside the study.

The classification accuracy level of the model reaches 84%, which confirms that this model is quite strong in predicting the status of OHS implementation in employees.

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